# "ENVIRONMENTAL MANAGEMENT PLAN REPORT

#### FOR

## "MANUFACTURING AND DISTRIBUTION OF VARIOUS TYPES OF JELLIES"

## Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar



### PROPONENT

Thai Faster Products & M.K Co., Ltd. Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar Tel: 959-455640300 Email: thaifaster.mm@gmail.com

### PREPARED BY



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October, 2022 (Rev-01)

## ENVIRONMENTAL MANAGEMENT PLAN (EMP) REPORT

## FOR

## "MANUFACTURING AND DISTRIBUTION OF VARIOUS TYPES OF JELLIES"

Environmental Management Plan (EMP) Report for Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

## **Report Review Form**

<b>Report Title: Environmental Manageme</b> and Distribution of Variou	ent Plan (EMP) Report for "Manufacturing as Types of Jellies"
<b>Report Version: 01 Version</b>	
Proponent:	Prepared by:
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Submitted Date: 14/10/2022	Signature:
Approved by: U Kyaw Sow Win	Position: Managing Director ECD Registration No.0019
Approved Date: 18/10/2022	Signature:

ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ဗန်းစက်မှုဇုန်၊ ကနောင်မင်းသားကြီးလမ်း၊ မြေကွက်အမှတ် ၄၆၇ (က) ရှိ Thai Faster Products and MK Co., Ltd. ၏ ဂျယ်လီစက်ရုံအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (Environmental Management Plan – EMP) အပေါ် စိစစ်တွေရှိချက်နှင့် အစီရင်ခံစာတွင် ပြင်ဆင် ဖြည့်စွက်ရန်လိုအပ်သည့်အချက်များ အပေါ် လိုက်နာဆောင်ရွက်ချက်များ

စဉ်	စိစစ်တွေ့ရှိချက်	ပြင်ဆင်ဖြည့်စွက်ရန်လိုအပ်သည့်အချက်များ	လိုက်နာဆောင်ရွက်ချက်များ
0	ကတိကဝတ်		
	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား အကောင်အထည် ဖော်ဆောင်ရွက်သွားမည် ဖြစ်ပါကြောင်း စီမံကိန်း အဆိုပြုသူမှ လက်မှတ်ရေးထိုး ဖော်ပြထားသော်လည်း ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်န ည်း အပိုဒ် (ဂုဂု) အရ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီ အစဉ်ပါ ကတိကဝတ်၊ ပတ်ဝန်းကျင်ထိခိုက်မှုလျှော့ချရေး လုပ်ငန်း များနှင့် အစီအစဉ်များကို အပြည့်အဝအစဉ်အမြံလိုက်နာ ဆောင်ရွက်သွားမည့် အချက်ပါဝင်ခြင်း မရှိကြောင်း စိစစ် တွေ့ရှိရပါသည်။	မည် ဖြစ်ကြောင်း အစီရင်ခံစာ၌ ထည့်သွင်း	အစီရင်ခံစာ၏ စာမျက်နှာ (၉)၊ Document Certification and Declaration တွင် ဖော်ပြထားပါသည်။
ال	နိဒါန်း		
	အစီရင်ခံစာ စာမျက်နှာ (၁) တွင် ရင်းနှီးမြှုပ်နှံမှုလုပ်ငန်း အမျိုးအစားမှာ အကျိုးတူ ပူးပေါင်းဆောင်ရွက်လုပ်ကိုင် လျှက်ရှိသည့် လုပ်ငန်းဖြစ်ပါကြောင်း ဖော်ပြထားသော် လည်း လုပ်ငန်း၏နောက်ခံအကြောင်းအရာ ဖော်ပြချက် အား ဖော်ပြထားခြင်း မရှိ ကြောင်း စိစစ်တွေရှိရပါသည်။	ဆောက်ခြင်း/ လက်လွှဲရယူခြင်း/ တည်ဆောက် ခြင်း) ဆိုင်ရာအချက်အလက်များအား ထည့်သွင်း	အခန်း (၁)၊ ခေါင်းစဉ်ခွဲ (၁.၁) စာမျက်နှာ (၉၈) တွင်
19	မူဝါဒ၊ ဥပဒေနှင့်အဖွဲအစည်းဆိုင်ရာမူဘောင်		
	အစီရင်ခံစာ စာမျက်နာ (၄၁-၄၅) ထိ စီမံကိန်းနှင့် သက် ဆိုင်သော ဥပဒေများ၊ နည်းဥပဒေများကို ဖော်ပြထားသော် လည်း ဘွိုင်လာဥပဒေအား ထည့်သွင်းဖော်ပြထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိရပါသည်။	အစီရင်ခံစာတွင် ဘွိုင်လာအား ထည့်သွင်းဖော်ပြရန် လုပ်ငန်းမှ လိုက်နာမည့် ဥပဒေ၊ နည်းဥပဒေများထဲမှ Update မဖြစ်သည့် ဥပဒေများ၊ နည်းဥပဒေများ Upgrade ပြင်ဆင် ဖော်ပြရန်	<ul> <li>ဘွိုင်လာဥပေဒကို အစီရင်ခံစာ၏ အခန်း (၂) ခေါင်းစဉ်ခွဲ (၂.၅)၊ ဇယား ၂.၃ ရှိ စာမျက်နှာ - ၁၁၃ တွင် ဖော်ပြ ထားပါသည်။</li> <li>အစီရင်ခံစာ၏ အခန်း(၂)၊ စာမျက်နှာ ၁၀၄ မှ ၁၂၁</li> </ul>

			အထိ ပြန်လည်ဖော်ပြထားပါသည်။
Ģ	စီမံကိန်းအကြောင်းအရာဖော်ပြချက်		
	အစီရင်ခံစာ စာမျက်နာ (၁၉-၂၁) တွင် လုပ်ငန်း၌	လုပ်ငန်း၌ အသုံးပြုသည့် ဓာတုပစ္စည်းအမျိုးအစား	- လုပ်ငန်း၌ အသုံးပြသည့် ဓာတုပစ္စည်းအမျိုးအစား
	အသုံးပြုသည့် ဓာတုပစ္စည်းအမျိုးအစားများအား ဖော်ပြ	တစ်ခု ချင်းစီ၏ အသုံးပြုမှုပမာက၊ သိုလှောင်ထား	တစ်ခုချင်းစီ၏ အသုံးပြုမှုပမာက၊ သိုလှောင်ထား
	ထားသော်လည်း အဆိုပါဓာတုပစ္စည်းအမျိုးအစား တစ်ခု	ရှိမှု အခြေအနေ၊ အရင်းအမြစ်နေရာ (ပြည်တွင်း/	ရှိမှုအခြေအနေ၊ အရင်းမြစ်နေရာတို့ကို အစီရင်ခံစာ ၏
	ချင်းစီ၏ အသုံးပြုမှုပမာက၊	တင်သွင်းသည့် နိုင်ငံ) နှင့် Chemical တစ်ခုချင်းစီ၏	အခန်း(၃)၊ ခေါင်းစဉ်ခွဲ (၃.၉)၊ ဇယား ၃.၇၊ စာမျက်နာ
	သိုလှောင်ထားရှိမှုအခြေအနေ၊ ရယူသည့်	Material Safety Data Sheet (MSDS)	၁၄၄ နှင့် စာမျက်နာ ၁၄၈ ၏ ဇယား ၃.၉ တို့တွင်
	အရင်းအမြစ်နေရာ၊ MSDS တို့ကို ဖော်ပြ ထားခြင်း	ထည့်သွင်း ဖော်ပြရန် (နောက်ဆက်တွဲတွင်	ဖော်ပြထားပါသည်။
	မရှိကြောင်း စိစစ် တွေ့ရှိရ ပါသည်။	ဖော်ပြလျှ င် လည်းရသည်။)	- Chemical တစ်ခုချင်းစီ၏ Material Safety Data
			Sheet (MSDS) တို့ကို အစီရင်ခံစာ၏ နောက်ဆက် တွဲ
			(၂၉) တွင် ဖော်ပြထား ပါသည်။
	စာမျက်နာ (၂၁) မှ စာအပိုဒ် (၂.၁ဂ) တွင် တစ်နှစ်လျှင်	လျှပ်စစ်စွမ်းအင်ရယူသည့် အရင်းအမြစ်နေရာ	လျှပ်စစ်စွမ်းအင်ရယူသည့် အရင်းအမြစ်နေရာကို အစီရင်ခံ
	အသုံးပြုသော လျှပ်စစ်ပမာကာနှင့် လျှပ်စစ်စွမ်းအင်အား	(မဟာ ဓာတ်အားလိုင်း သို့မဟုတ် ဂျင်နရေတာ)	စာ၏ အခန်း (၃)၊ ခေါင်းစဉ်ခွဲ (၃.၁၁.၁)နှင့် (၃.၁၁.၂) ရှိ
	315 KVA ရှိသော ထရန်စဖော်မာမှ ရယူကြောင်း ဖော်ပြ	အား ထည့်သွင်း ဖော်ပြရန်	စာမျက်နှာ (၁၅၇) တွင် ဖော်ပြထား ပါသည်။
	ထားသော်လည်း ရယူသည့် နေရာအား ဖော်ပြထားခြင်း		
	မရှိ ကြောင်း စိစစ်တွေ့ရှိရပါသည်။		
	စာမျက်နာ (၂၁ - ၂၂) တွင် လုပ်ငန်း၌ ဒီဇယ်လောင်စာနှင့်	ဒီဇယ်လောင်စာနှင့် စပါးခွံလောင်စာတို့အား	- စပါးခွံလောင်စာသိုလှောင်မှုနှင့်ကာလကို အစီရင်ခံ စာ၏
	စပါးခွံလောင်စာတို့အား အသုံးပြုကြောင်းနှင့် နှစ်စဉ်	သိုလှောင် ထားရှိမှုအခြေအနေနှင့် သိုလှောင်ထား	အခန်း(၃)၊ ခေါင်းစဉ်ခွဲ (၃.၁၁.၃)၊ စာမျက်နှာ (၁၅၈)
	အသုံးပြုမှုပမာဏအား ဖော်ပြထားသော်လည်း အဆိုပါ	ရှိမည့် ကာလတို့ အား ထည့်သွင်း ဖော်ပြရန်	တွင် ဖော်ပြထားပါသည်။
	လောင်စာများကို သိုလှောင်ထားရှိမှု အခြေအနေအား		- ဒီဇယ်လောင်စာသိုလှောင်ထားရှိမှုနှင့်ကာလကို
	ဖော်ပြထားခြင်းမရှိ ကြောင်း စိစစ်တွေ့ရှိရပါသည်။		အစီရင်ခံစာ စာမျက်နာ(၁၅၇) ရှိ ဇယား ၃.၁၂ တွင်
			ဖော်ပြထားပါသည်။
	စာမျက်နာ (၁၅-၁၈) မှ စာအပိုဒ်ခွဲ (၂.၈) တွင် ကုန်ကြမ်း	ကုန်ကြမ်းပစ္စည်းများ သိုလှောင်ထားရှိမှု အခြေအနေ	- ကုန်ကြမ်းပစ္စည်းများသိုလှောင်ထားရှိမှုကို စာမျက်နာ
	ပစ္စည်း အသုံးပြုမှု ပမာက၊ ရယူသည့်အရင်းအမြစ်တို့ကို	အား ဓာတ်ပုံမှတ်တမ်းများဖြင့် ထည့်သွင်း ဖော်ပြရန်	(၁၄၅) ရှိ ပုံ ၃.၁၁ နှင့် စာမျက်နာ (၁၄၉) ရှိ ပုံ ၃.၁၂
	ဖော်ပြထားသော်လည်း သိုလှောင်ထားရှိမှု အခြေအနေ		တို့တွင်ဖော်ပြထားပါသည်။
	အား ဖော်ပြထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိရပါသည်။		
	ထုတ်လုပ်မှုလုပ်ငန်းစဉ်အား ဖော်ပြထားခြင်း မရှိကြောင်း	လုပ်ငန်းဆောင်ရွက်ပုံအဆင့်ဆင့်ကို စာသားဖြင့်	– လုပ်ငန်းအဆင့်ဆင့်ဆောင်ရွက်ပုံကို အစီရင်ခံစာ၏

	8-5	and a Durance Flow Chart Design Lowert	
	စိစစ် တွေ့ရှိရပါသည်။	သာမက Process Flow Charti Design Layout	အခန်း (၃)၊ ခေါင်းစဉ်ခွဲ (၃.၁၃.၁) ရှိ စာမျက်နာ
		Plan ဖြင့်ပါ ရှင်းလင်းစွာ ဖော်ပြရန်	(၁၆ဂ)ရှိ ပုံ ၃.၂၁ နှင့် စာမျက်နာ (၁၆၁) ရှိ ပုံ ၃.၂၂
			တို့တွင် ဖော်ပြထား ပါသည်။
	လုပ်ငန်းမှ စွန့်ပစ်ပစ္စည်းထွက်ရှိမှု ပမာဏအား ဖော်ပြ	လုပ်ငန်းမှ တစ်ရက်လျှင် စွန့်ပစ်အစိုင်အခဲ ထွက်ရှိမှု	– လုပ်ငန်းမှစွန့်ပစ်အစိုင်အခဲ ထွက်ရှိမှုပမာကာကို အစီ
	ထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိရပါသည်။	ပမာဏကို ထည့်သွင်း ဖော်ပြရန်	ရင်ခံစာ ၏ အခန်း(၃)၊ ခေါင်းစဉ်ခွဲ (၃.၁၅.၂)၊ ဇယား
			၃.၁ဂု၊ စာမျက်နာ ၁၆၅ တွင် ဖော်ပြထားပါသည်။
	လုပ်ငန်းမှစွန့်ပစ်ရေထွက်ရှိမှုပမာဏနင့်နောက်ဆုံးစွန့်ပစ်	လုပ်ငန်းမှ တစ်ရက်လျှင် စွန့်ပစ်ရေ ထွက်ရှိမှု	- လုပ်ငန်းမှ စွန့်ပစ်ရည်ထွက်ရှိမှုပမာကာကို အစီရင်ခံစာ
	သည့် နေရာအား ဖော်ပြထားခြင်းမရှိကြောင်း စိစစ်တွေ့ရှိရ	ပမာဏနှင့် နောက်ဆုံးစွန့်ပစ်သည့်နေရာတို့ အား	၏ စာမျက်နာ (၁၆၃) ရှိ ဇယား ၃.၁၆နှင့် ပုံ ၃.၂၃ တွင်
	ပါသည်။	ထည့်သွင်း ဖော်ပြရန်	ဖော်ပြထားပါသည်။
			- နောက်ဆုံးစွန့်ပစ်သည့်နေရာကို စာမျက်နာ (၁၆၄)ရှိ ပုံ
			၃.၂၄ တွင် ဖော်ပြထားပါသည်။
୭	လက်ရှိပတ်ဝန်းကျင်အရေအနေ		
	အစီရင်ခံစာ စာမျက်နာ (၃၄-၃၅) ထိ ဇယား (၂.၁၇)၊	Boiler Section ရှိ pH၊ TSS၊ Cooling Section ရှိ	Boiler section ရှိ စွန့်ပစ်ရည်တန်ဖိုးများကို အစီရင်ခံစာ၏
	(၂.၁၈) တို့တွင် စွန့်ပစ်ရေအရည်အသွေးအား တိုင်းတာ	COD၊ BOD၊ TSS နှင့် Drain ရှိ COD၊ BOD၊ TSS	စာမျက်နာ (၁၈၄) ရှိ ဇယား ၄.၁၄ အောက်တွင် ဖော်ပြ
	ထားပြီး တိုင်းတာမှုရလာဒ်များအား NEQEG လမ်းညွှန်	တန်ဖိုးများ သတ်မှတ်လမ်းညန်ဖိုးထက် ကျော်လွန်	ထားပါသည်။
	တန်ဖိုးဖြင့် လိုက်နာမည်ဖြစ်ကြောင်း ဖော်ပြထားရာ Boiler	နေမှုအပေါ် ကျော်လွန်ရသည့် အကြောင်းအရင်း	
	Section ရှိ pH၊ TSS၊ Cooling Section ရှိ COD BOD	အား ထည့်သွင်း ဖော်ပြရန်	
	TSS နင့် Drain COD၊ BOD၊ TSS တန်ဖိုးတို့မှာ သတ်မှတ်		
	လမ်းညွှန်ချက် တန်ဖိုးထက် ကျော်လွန်နေကြောင်း ဖော်ပြ		
	ထားသော်လည်းကျော်လွန်ရသည့် အကြောင်း အရင်းအား		
	ဖော်ပြထားခြင်း မရှိကြောင်း စိစစ်တွေ့ ရှိရ ပါသည်။		
	အစီရင်ခံစာ စာမျက်နှာ (၃၅-၃၈) မှ စာပိုဒ်ခွဲ (၂.၁၄.၂.၂)	လေအရည်အသွေးအား လုပ်ငန်းမှ လိုက်နာရမည့်	လေအရည်အသွေးအား အစီရင်ခံစာ၏ စာမျက်နာ (၁၈၀)
	တွင် လေအရည်အသွေးအား တိုင်းတာထားပြီး တိုင်းတာမူ	လိုက်နာမည့် လမ်းညွှန်တန်ဖိုးပါ Averaging Period	ရှိ ဇယား ၄.၈ နှင့်အောက်တွင် ဖော်ပြထားပါသည်။
	ရလာဒ် များအား NEQEG လမ်းညွှန်ချက် တန်ဖိုးဖြင့်	အတိုင်း တိုင်းတာဖော်ပြရန်နှင့် တိုင်းတာမှုရလဒ်များ	Il correction actions action action and a second action and a second action act
	လိုက်နာမည် ဖြစ်ကြောင်း ဖော်ပြထားသော်လည်း	မှာ သတ်မျတ်လမ်းညွှန်တန်ဖိုးထက် ကျော်လွန်မှု	
	Averaging Period အတိုင်း တိုင်းတာထားခြင်း မရှိ	ရှိ/မရှိနှင့် ကျော်လွန်နေပါက ကျော်လွန်နေရသည့်	
	ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	အကြောင်း အရင်း ထည့်သွင်းဖော်ပြရန်	

G	ပတ်ဝန်းကျင်အပေါ်ထိခိုက်နိုင်မှုများနှင့်လျော့နည်းစေရေးဆေ	ဘင်ရွက်မည့် နည်းလမ်းများ	
	အစီရင်ခံစာ စာမျက်နှာ (၃၄-၃၅) ထိ ဇယား (၂.၁၇)၊	Boiler Section ရှိ pH၊ TSS၊ Cooling Section ရှိ	- အသုံးပြုမည့် Treatment System (Method) အား
	(၂.၁၈) တို့ရှိ Boiler Section ရှိ pH၊ TSS၊ Cooling	COD၊ BOD၊ TSS တန်ဖိုးတို့မှာ သတ်မှတ်လမ်းညွှန်	အစီရင်ခံစာ၏ စာမျက်နာ (၁၆၃) ရှိ ဇယား ၃.၁၆ နှင့် ပုံ
	Section ရှိ COD၊ BOD၊ TSS တန်ဖိုးတို့မှာ သတ်မှတ်	တန်ဖိုး ထက် ကျော်လွန်နေမှုအပေါ် အသုံးပြုမည့်	၃.၂၃ တွင်ဖော်ပြထားပါသည်။
	လမ်းညွှန်တန်ဖိုးထက် ကျော်လွန်နေကြောင်း အစီရင်ခံစာ	Treatment System (Method) නා:	- စွန့်ပစ်ရည်တိုင်းတာမှုများကို အစီရင်ခံစာ၏ စာမျက်နှာ
	စာမျက်နှာ(၆၁)မှ စာအပိုဒ်ခွဲ (၆.၁) တွင် လုပ်ငန်းမှ	ထည့်သွင်းဖော်ပြရန်	(၁၈၆) ရှိ ဇယား ၄.၁၇ နှင့်အောက်တွင်လည်းကောင်း၊
	စွန့်ပစ်ရေထွက်ရှိကြောင်း၊ စွန့်ပစ်ရေများကို ရေမြောင်းများ		စာမျက်နာ (၁၈၇) ရှိ ဇယား ၄.၁၈ နှင့်အောက်တွင်
	ခွဲခြား၍ စွန့်ပစ်ကြောင်းနှင့် စွန့်ပစ်ရေများ ကို Treatment		လည်းကောင်း ပြန်လည်တိုင်းတာ ဖော်ပြထားပါသည်။
	ပြုလုပ်၍ စွန့်ပစ်ကြောင်း ယေဘူယျဖော်ပြ ထားသော်		
	လည်း စွန့်ပစ်ရေများကို Treatment ပြုလုပ်သည့်		
	နည်းလမ်းအား ဖော်ပြထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိ		
	ရပါသည်။		
	အစီရင်ခံစာစာမျက်နာ (၆၁) မှ စာအပိုဒ်ခွဲ (၆.၁) တွင်	စွန့်ပစ်အစိုင်အခဲများကို ရောင်းချသည့်နေရာ၊	စွန့်ပစ်အစိုင်အခဲများနှင့်ပတ်သက်၍ အစီရင်ခံစာ၏
	စွန့်ပစ် အစိုင်အခဲများအားခွဲခြား၍ စွန့်ပစ်ကြောင်းနှင့်	အိမ်သုံး စွန့်ပစ်အမှိုက်များနှင့် ဘွိုင်လာမှ ထွက်ရှိ	စာမျက်နာ (၁၆၅)ရှိ အခန်း(၃)၊ ခေါင်းစဉ်ခွဲ (၃.၁၅.၂)နှင့်
	စွန့်ပစ်အစိုင်အခဲများကို ရောင်းချကြောင်း ဖော်ပြ	သော ပြာများအား စွန့်ပစ်သည့် နည်းလမ်း တို့အား	ဇယား ၃.၁၇ တွင်လည်းကောင်း၊ စာမျက်နှာ (၁၆၆) တွင် ပုံ
	ထားသော်လည်း စွန့်ပစ်အစိုင်အခဲများကို ရောင်းချ	ထည့်သွင်း ဖော်ပြရန်	၃.၂၇ နှင့် ၃.၂၈ ဖြင့်လည်းကောင်း ဖော်ပြထားပါသည်။
	သည့်နေရာ၊ အိမ်သုံးစွန့်ပစ်အမှိုက် များနှင့်ဘွိုင်လာမှ		
	ထွက်ရှိသောပြာများအားစွန့်ပစ်သည့် နည်းလမ်းကို		
	ဖော်ပြထားခြင်းမရှိကြောင်း စိစစ်တွေ့ရှိရပါသည်။		
၇။	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်		
	အစီရင်ခံစာ စာမျက်နာ (၈၉) မှ စာအပိုဒ်ခွဲ (၁၂.၂) တွင်	စီမံကိန်းလည်ပတ်သည့်ကာလ အောက်ဖော်ပြပါ	- စီမံကိန်းလည်ပတ်သည့်ကာလ ပတ်ဝန်းကျင်အပေါ်
	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် ရံပုံငွေလျာထား	အချက် များမှ ပတ်ဝန်းကျင်အပေါ် ထိခိုက်နိုင်မှုအား	ထိခိုက်နိုင်မှု (စွန့်ပစ်ရေအရည်အသွေး၊ စွန့်ပစ်အစိုင်အ ခဲ၊
	ချက် အားဖော်ပြထားသော်လည်း စွန့်ပစ်ရေ အရည်	စီမံခန့်ခွဲမည့် လုပ်ငန်းများအား ထည့်သွင်း ဖော်ပြရန်	လေအရည်အသွေး၊ ဆူညံသံ)အား စီမံခန့်ခွဲမည့် လုပ်ငန်း
	အသွေး၊ စွန့်ပစ်အစိုင်အခဲ၊ လေအရည်အသွေး၊ ဆူညံသံ၊	- စွန့်ပစ်ရေအရည်အသွေး	များအား အစီရင်ခံစာ၏ အခန်း (၆)၊ ခေါင်းစဉ်ခွဲ (၆.၂)၊
	သဘာဝဘေး အန္တရာယ်တို့အား စီမံခန့်ခွဲမှု အစီအစဉ်အား	- စွန့်ပစ်အစိုင်အခဲ	ဇယား ၆.၁ တို့တွင် စာမျက်နာ (၁၉၉ မှ ၂၀၂) အထိ
	ဖော်ပြထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိရ ပါသည်။	- လေအရည်အသွေး	ဖော်ပြထားပါသည်။
		- ဆူညံသံ	- စီမံကိန်းလည်ပတ်သည့်ကာလ ပတ်ဝန်းကျင်အပေါ်

		0.0000000000000000000000000000000000000	
		- သဘာဝဘေးအွန္တရာယ်ဖြစ်ပွားနိုင်ခြင်း	ထိခိုက်နိုင်မှု (သဘာဝဘေးအန္တရာယ်)အား စီမံခန့်ခွဲမှု
			အစီအစဉ်ကို အစီရင်ခံစာ အခန်း(၆)၊ ခေါင်းစဉ်ခွဲ ၆.၅
			စာမျက်နာ (၂၀၅ မှ ၂၀၉) အထိတွင် ဖော်ပြထားပါသည်။
	အစီရင်ခံစာ စာမျက်နာ (၉၀-၉၁) မှ စာအပိုဒ် (၁၂.၃)	အလုပ်သမားများအတွက် သန့်ရှင်းသောရေ၊	အလုပ်သမားများအတွက် ထောက်ပံ့ပေးမှု အစီအစဉ်တို့
	တွင် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအွန္တရာယ်ကင်းရှင်း	သန့်ရှင်း သော အစားအစာများ ထောက်ပံ့ပေးထားမှု	အား အစီရင်ခံစာ၏ အခန်း (၃)၊ ခေါင်းစဉ်ခွဲ (၃.၁၇.၁)၊
	ရေးတွက် အလုပ်သမားများအား သင်တန်းများပေးထား	အစီအစဉ် ကျန်းမာရေးစောင့်ရှောက်ပေးမှု အစီ	(၃.၁၇.၂)၊ (၃.၁၇.၃)၊ (၃.၁၈) တွင် စာမျက်နာ (၁၆၈ မှ
	ကြောင်းနှင့် မတော်တဆဖြစ်ပွားမှုများအား မှတ်တမ်းများ	အစဉ်များနှင့်လုပ်ငန်းခွင်ဘေးအန္တရာယ် ကင်းရှင်း	၁ဂုဂ) အထိ ဖော်ပြထားပါသည်။
	ထားရှိကြောင်း ယေဘူယျဖော်ပြထားသော်လည်း အလုပ်	ရေးအတွက် ကာကွယ်ရေး ပစ္စည်းများ ထောက်ပံ့	
	သမားများအတွက် သန့်ရှင်းသောရေ၊ သန့်ရှင်းသောအစား	ပေးမှု အစီအစဉ်တို့အား ထည့်သွင်း ဖော်ပြရန်	
	အစာများထောက်ပံ့ ပေးထားမှုအစီအစဉ်၊ ကျန်းမာရေး		
	စောင့်ရှောက်ပေးမှုအစီအစဉ်များနှင့်လုပ်ငန်းခွင် ဘေး		
	အန္တရာယ် ကင်းရှင်းရေးအတွက် ကာကွယ်ရေး ပစ္စည်းများ		
	ထောက်ပံ့ပေးမှု အစီအစဉ်တို့အား ဖော်ပြခြင်း မရှိကြောင်း		
	စိစစ်တွေ့ရှိ ရပါသည်။		
ରା	စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်		
	အစီရင်ခံစာ စာမျက်နာ (၆၆) တွင် လေအရည်အသွေး	လေအရည်အသွေးအားစောင့်ကြပ်ကြည့်ရှုမည့်အစီ	လေအရည်အသွေးအားစောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်
	အား စောင့်ကြပ်ကြည့်ရှုမည့်နေရာ၊ အကြိမ်အရေအတွက်		နှင့်ပတ်သက်၍ စောင့်ကြပ်ကြည့်ရှုမည့် ပါရာမီတာများအား
	တို့ကိုဖော်ပြထားသော်လည်း စောင့်ကြပ်ကြည့်ရှုမည့်	ပါရာမီတာများ အား ထည့်သွင်းဖော်ပြရန်	အစီရင်ခံစာ၏ အခန်း (၆)၊ ခေါင်းစဉ်ခွဲ (၆.၈)၊ ဇယား (၆.၄)
	ပါရာမီတာများအား ဖော်ပြထားခြင်းမရှိကြောင်း စိစစ်		တို့တွင် စာမျက်နာ(၂၂၆ မှ ၂၂၉)အထိ ဖော်ပြထားပါသည်။
	တွေ့ရှိရပါသည်။		
	အစီရင်ခံစာ စာမျက်နာ (၆၇) တွင် ဆူညံသံအား	ဆူညံသံစောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်နှင့်	ဆူညံသံစောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်နင့် ပတ်သက်၍
	တောင့်ကြပ်ကြည့်ရှုမည့် အကြိမ်အရေအတွက်ကို ဖော်ပြ	ပတ်သက်၍ စောင့်ကြပ်ကြည့်ရှုမည့် နေရာအား	အစီရင်ခံစာ၏ «ယား (၆.၄) ရှိ စာမျက်နှာ(၂၂၈)တွင်
	ထားသော်လည်း စောင့်ကြပ်ကြည့်ရှုမည့် နေရာကို ဖော်ပြ		Noise Quality တွင် ဖော်ပြထားပါသည်။
	ထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိ ရပါသည်။		, j L
	အစီရင်ခံစာတွင် စွန့်ပစ်ရေအရည်အသွေးအား စောင့်ကြပ်	စွန်ပစ်ရေအရည်အသွေးအား စောင့်ကြပ်ကြည့်ရှု	စွန်ပစ်ရေအရည်အသွေးအား စောင့်ကြပ်ကြည့်ရှုမည့် အစီ
	ကြည့်ရှုမည့်အစီအစဉ်အား ဖော်ပြထားခြင်း မရှိကြောင်း	မည့် အစီအစဉ်နှင့်ပတ်သက်၍ စောင့်ကြပ်ကြည့်ရှု	
	စိစစ်တွေ့ရှိ ရပါသည်။	မည့်နေရာ၊ အကြိမ်အရေအတွက်၊ ပါရာမီတာ	စာမျက်နှာ (၂၂၇) ရှိ Water Quality, Waste water

		ထည့်သွင်းဖော်ပြရန်	Quality တို့တွင် ဖော်ပြထားပါသည်။	
	စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်အား EMT Member နင့်	EMT Member ဝင်များနှင့် တစ်ဦးချင်းစီးတာဝန်ယူ	- EMT Member ဝင်များနှင့် တစ်ဦးချင်းစီးတာဝန်ယူ	
	Manager တို့မှ တာဝန်ယူဆောင်ရွက်မည်ဟု ဖော်ပြထား	ဆောင်ရွက်မည့် အပိုင်းနှင့် ရံပုံငွေလျာထားချက်တို	ဆောင်ရွက်မည့် အပိုင်းကို အစီရင်ခံစာ၏ အခန်း(၆)၊	
	သော်လည်း EMT Member ဝင်များနှင့် တစ်ဉီးချင်းစီ	့အား ထည့်သွင်းဖော်ပြရန်	ခေါင်းစဉ်ခွဲ (၆.၇)၊ ဇယား ၆.၃၊ ပုံ (၆.၆) တို့တွင်	
	တာဝန်ယူဆောင်ရွက်မည့်အပိုင်းနှင့် ရံပုံငွေလျာထားချက်		စာမျက်နာ (၂၂၄ မှ ၂၂၆) အထိ ဖော်ပြထားပါသည်။	
	တို့အား ဖော်ပြထားခြင်း မရှိကြောင်း စိစစ်တွေ့ရှိ		- ရံပုံငွေလျာထားချက်ကို အစီရင်ခံစာ၏ အခန်း (၆)၊	
	ရပါသည်။		ခေါင်းစဉ်ခွဲ (၆.၁ဂ)၊ ဇယား (၆.၅)၊ စာမျက်နာ (၂၃ဂ)	
			တွင် ဖော်ပြထားပါသည်။	
ଜା	List of Commitment			
	စီမံကိန်းအဆိုပြုသူမှ အစီရင်ခံစာပါ အခန်းတစ်ခန်းချင်းမှ	စီမံကိန်းအဆိုပြုသူမှ အစီရင်ခံစာပါ အခန်း တစ်ခန်း	စီမံကိန်းအဆိုပြုသူမှ အစီရင်ခံစာပါ အခန်း တစ်ခန်း ချင်းမှ	
	ဆောင်ရွက်မည့် အချက်များနှင့်စပ်လျဉ်း၍ ကတိကဝတ်	ချင်းမှ ဆောင်ရွက်မည့်အချက်များနှင့် စပ်လျဉ်း၍	ဆောင်ရွက်မည့်အချက်များနှင့် စပ်လျဉ်း၍ အစီရင်ခံစာ၏	
	ပြုချက်များကို ဖော်ပြထားခြင်းမရှိကြောင်း စိစစ်တွေ့ရှိရ	ကတိကဝတ် ပြုချက်များကို ဇယားဖြင့် ဖော်ပြရန်	အခန်း (၂)၊ ခေါင်းစဉ်ခွဲ (၂.၈)၊ ဇယား ၂.၄ တွင် စာမျက်နာ	
	ပါသည်။		၁၂၈ မှ ၁၃၁ အထိ ဖော်ပြထားပါသည်။	
00	အထွေထွေ			
	ပတ်ဝန်းကျင်ထိခိုက်မှုဆးန်စစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း	း အပိုဒ် ဂုဂု အရ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EM	P) Soft Copy ကို ပူးတွဲ တင်ပြရန်၊	
	ပြန်လည်ရေးဆွဲမည့် EMP အစီရင်ခံစာတွင် ယခုပေးပို့သော အကြံပြုချက် တစ်ခုချင်းစီအလိုက် ဖြေရှင်းချက်များကို အစီရင်ခံစာ၏ မည့်သည့် အပိုင်းတွင် ရေးသားထားသည်ကို			
	ဖော်ပြသည့် (Comment Response Table) ၌ စာမျက်နှာ န	နံပါတ်နှင့်တကွ ဖော်ပြပေးရန်		

Manufacturing and Distribution of Various Types of Jellies

## TABLE OF CONTENTS

TABL	E OF CONTENTS	
LIST	OF TABLES	5
LIST	OF FIGURES	7
DOCU	JMENT CERTIFICATION AND DECLARATION	9
COM	MITMENT AND ACKNOWLEDGEMENT	
ABBF	EVIATIONS	
EXEC	UTIVE SUMMARY	
အကျဉ်	းချုပ် အစီရင်ခံစာ	
1.0	INTRODUCTION	
1.1	Background	
1.2	Salient Features of the Project	
1.3	Need of the Project	
1.4	Objectives of EMP	
1.5	Methodology Adopted	
1.6	Details of the Project Proponent	
1.7	Details of Environmental Team	
1.8	Structure of Report	
2.0	POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK	
2.1	Myanmar Regulatory Framework in Environmental Assessment	
2.2	Myanmar Environmental Policy	
2.3	Existing Myanmar Laws	
2	.3.1 National Laws and Regulations	
2.4	International Conventions, Treaties and Agreements	
2.5	Overview Myanmar Legislation Relevance to the Project	
2.6	Institutional Framework of Myanmar Government Responsible for Project	
2.7	Occupational Health and Safety Standards	
2	.7.1 Strategy to raise Occupational Safety and Health Standard	
2	.7.2 Roles of Stakeholders in Myanmar OSH Framework	
2	.7.3 Short Term / Long Term Plan for Effective Implementation	
2.8	Environmental Commitment	
3.0	<b>DESCRIPTION OF THE PROJECT AND PRODUCTION PROCESS</b>	
3.1	Project Background and Objectives	
3.2	Project Details	
3.3	Financial Information	

			· · ·
3.4	Proj	ect Location, Area and Land Ownership	
3.4	.1	Project Location	
3.4	.2 Ar	ea	
3.4	.3	Land Ownership	
3.5	Site	Boundaries and Access Road	
3.6 A	dmini	strative Offices	137
3.6	5.1	Infrastructure	
3.7	Pro	luct Profile	141
3.8	Pro	luction Capacity	
3.9	Rav	/ Materials	144
3.10	Mac	chinery and Equipment	154
3.111	Power	Supply and Power Generation	157
3.1	1.1	Transformer	157
3.1	<b>1.2</b> G	enerator	
3.1	1.3 B	biler	
3.12	Wat	er Consumption	
3.13 1	Proces	ses and Operations Involved in the Manufacture	
3.1	3.1	Manufacturing Process	
3.1	3.2	Quality Control and Inspection	161
3.14	Emj	bloyment Plan	
	3.14	.1 Working hour and days	
3.15	Waste	Generation	
3.1	5.1	Wastewater Discharge and Treatment system	
3.1	5.2 So	lid wastes Storage and Disposal System	
3.161	Fire Fi	ghting System	
3.17	Other	Facilities	
3.1	7.1	Self- cleanliness	
3.1	7.2	Medical Care	
3.1	7.3	Ways of Training	170
3.18	Гransp	portation Arrangement	170
4.0	GOVE	ERNING PARAMETERS AND SURROUNDING ENVIRONMENT	171
4.1	Reg	ulatory Requirement	171
4.2	Mya	anmar Environmental Standards	171
4.3 In	4.3 International Standards and Guidelines		
4.4 E	nviror	mental Profile of Jelly factory	174

4.	4.1	Secondary Data for the Surrounding Environment	174
4.	4.2	Primary Data for the Surrounding Environment	177
	4.4.2.1	Air Quality	177
	4.4.2.2	2 Water Quality	
	4.4.2.3	Wastewater Quality	
	4.4.2.4	Noise Level	
	4.4.2.5	Soil Quality	
5.0	POTE	NTIAL IMPACT ASSESSMENT AND MITIGATION MEASURE	
5.1 (	General	Description of the Process	
5.2	Adverse	e Impacts for Processing Step	
5.3	Imp	act Assessment Methodology	
5.	3.1 Pro	bability	
5.	<b>3.2 Du</b>	ration	
5.	3.3 Sca	le	
5.	3.4 Ma	gnitude/ Severity	
5.	3.5 Sig	nificance	
5.4	Miti	gation Measures for Operation Phase	
6.0	ENVI	RONMENTAL MANAGEMENT PLAN AND MONITORING PROGRAM	
	-	ve of Environmental Management Plan	
6.2 I	Environ	ment Management Plan	
	-	tional Safety and Health Management Program	
6.4 \$	Socio-E	conomic Management Plan	
6.5 I	Emerge	ncy Response & Disaster Management Plan	
6.60	General	ly Fire Prevention Plan	
6.	6.1	Fire risk	
6.	6.2	Suggestions Regarding Fire Safety	
6.	6.3	Firefighting Equipment	
6.	6.4	Firefighting Training and Protection Measures	
6.	6.5	Operating a Fire Extinguisher	
6.	6.6 Fir	e prevention and control plan of Thai Faster Products And M.K. Co., Ltd	
6.7	Env	ironmental Management Team	
6.8	Env	ironmental Monitoring Plan	
6.	8.1	Monitoring and Reporting	
6.9 (	Green E	Belt Development	
6.10	Budge	tary Provisions for EMP	

6.11 Re	cord Keeping and Reporting231
6.11.1	Water Use
6.11.2	Noise
6.11.3	Hazardous Substances
6.12 Ac	cident Reporting
6.12.1	Purpose of Accident reporting
6.12.2	Accident Reporting Procedures
6.12.3	Accident Investigation Procedures
7.0 CAP	ACITY DEVELOPMENT AND TRAINING
7.1 Corpor	rate Social Responsibility Plan
7.2 Emplo	yees' Welfare
7.2.1 St	aff Transportation
7.2.2 A	ccommodation
7.2.3 Ot	ther Benefits
7.3 Emplo	yee Education
7.4 Emplo	yee Involvement
7.5 Trainii	ng on Safety Production
7.6 Grieva	nce Redress Mechanism (GRM)
8.0 PUBLIC	CONSULTATION AND INFORMATION DISCLOSURE
8.1 PURP	OSE
8.2 METH	ODOLOGY AND APPROACH
8.3 MEET	ING WITH THE FACTORY'S EMPLOYEES
8.4 Me	eeting with the relevant government organizations and the vicinity of the factory240
8.5 Re	sponse for Comments and Suggestions
9.0 CONCLU	USION AND RECOMMENDATION
9.1 Conclu	usion
9.2 Findin	gs
9.3 Recom	mendations
List of Ap	opendixI

LIST OF TABLES
Table 1.1 Salient Features of the Project.   98
Table 1.2 List of Investor.   10
Table 1.3 Details of the EMP Team.10
Table 1.4 Structure of the Report.    10
Table 2.1 Existing Laws and Regulations in Myanmar    10
Table 2.2 International Conventions, Treaties and Agreements.10
Table 2.3 Myanmar Legislation Relevance of the Project.10
Table 2.4 Key Environment Commitments    12
Table 3.1 List of Directors    13
Table 3.2 Shareholding structure    13
Table 3.3 List of Product.   14
Table 3.4 Annual Production Capacities of Various Types of Jellies (Local Sale)14
Table 3.5 Annual Production Capacities of Various Types of Jellies (Export Sale)       14
Table 3.6 Sale Prices of Various Types of Jellies for Local and Export       14
Table 3.7 Annual Requirements of Raw Materials    14
Table 3.8 Annual Requirements of Raw Materials (Purchased from Local)
Table 3.9 Food grade Chemical Lists and storage condition    14
Table 3.10 List of Machinery and Equipment.15
Table 3.11 Annual Resource Requirements15
Table 3.12 Annual Requirement for Diesel consumption15
Table 3.13 Annual requirements for Paddy Husk consumption15
Table 3.14 Water consumption.   15
Table 3.15 Employment Plan16
Table 3.16 Wastewater discharging and Disposal Detail.16
Table 3.17 Solid waste disposal system16
Table 3.18 List of Firefighting Equipment    16
Table 3.19 Medicine list and PPE list.16
Table 3.20 Transportation Plan.17
Table 4.1 Effluent Level (General Guideline).    17
Table 4.2 Air Emission Levels (General Guideline)    17
Table 4.3 Noise Level (General Guidelines).    17
Table 4-4 Air Emission Levels (US-EPA Guideline).    17
Table 4.5 US-OHS Noise Exposure Limits for the Work Environment (Noise
Exposures in dBA) 17
Table 4.6 Environmental and Social Condition near the Project Area    17
Table 4.7Air Quality Monitoring Points (AMP)    17
Table 4.8 Ambient Air Quality Data (Location- 1) (30.3.2018 to 31.3.2018)18
Table 4.9 Workplace Air Quality Data (Location- 2 to 7)18
Table 4.10 Boiler Stack Gas Emission Data18
Table 4.11Water Quality Sampling Points (30.3.2018)18
Table 4.12 Water Quality Data for Tube Well Water (Location-1) (26.4.2018)18
Table 4.13 Water Quality Data for Drinking Water (Location-2) (26.4.2018)18

Table 4.14 Water Quality for Boiler Section & cooling section (Location-3 & 4)	
(26.4.2018)	184
Table 4.15 Analysis result of Factory inside drain channel (Location- 5) (26.4.2018).	185
Table 4.16 Wastewater Quality Collecting Points	186
Table 4.17 Analysis result for waste water quality, WWSP-1 & WWSP-2 (1.7.2022).	186
Table 4.18 Analysis result for waste water quality, WWSP-3 (3.8.2022)	187
Table 4.19 Noise level Monitoring Point.	187
Table 4.20 Noise Level Monitoring Data	188
Table 4.21 Laboratory Analysis Results of Soil #	189
Table 5.1 Rating for Probability	191
Table 5.2 Rating for Duration.	191
Table 5.3 Rating for Scale.	192
Table 5.4 Rating for Magnitude or Severity	192
Table 5.5 Rating for Significance.	193
Table 5.6 Impact Significances for Operation Phase	194
Table 5.7 Potential Hazards associated with the Boiler	196
Table 5.8 Mitigation Measures for Operation Phase	196
Table 6.1 Environmental Management Plan	199
Table 6.2 Emergency Response Team Structure and Responsibilities (Thai Faster	
Products and M.K Co., Ltd)	206
Table 6.3 Environmental Management Team	224
Table 6.4 Environmental Monitoring Plan.	227
Table 6.5 Estimated Costs for Environmental Monitoring	230
Table 7.1 WCC team of the Factory.	237
Table 8.1 Excerpts from suggestion of the factory staff	239
Table 8.2 Comments of Public Consultation Meeting	240

LIST OF FIGURES
Figure 3.1 Location of the Factory.
Figure 3.2 Map of Industrial Zones in Yangon
Figure 3.3 Location of Hlaing Thar Yar Township
Figure 3.4 Site Boundaries and Access Road of the Project
Figure 3.5 Factory Layout Plan
Figure 3.6 Canteen.
Figure 3.7 Boiler Room.
Figure 3.8 Employee Housing.
Figure 3.9 Photos of Factory Buildings
Figure 3.10 Photos of Product Samples.
Figure 3.11 Raw Materials Storage condition.
Figure 3.12 Food Grade Chemical Storage condition
Figure 3.13 Machine Layout
Figure 3.14 Production Machinery for HERY BOYS
Figure 3.15 Production Machinery for DIAYA MOTO
Figure 3.16 Transformer.
Figure 3.17 Generators and Diesel Storage.
Figure 3.18 Boiler and Rice Husk Storage.
Figure 3.19 Water Treatment System.
Figure 3.20 Flow Diagram of Water Treatment Process
Figure 3.21 Process Flow Chart for Manufacturing of Hero Boys
Figure 3.22 Process Flow Chart for Manufacturing of Daiya Moto
Figure 3.23 Waste water Treatment Plant.
Figure 3.24 Water Final Discharge point of Thai Faster Products and M.K Co., Ltd 16
Figure 3.25 Photos of Drainage system
Figure 3.26 Sewage systems 16
Figure 3.27 Solid waste collecting.
Figure 3.28 Solid waste Disposal system
Figure 3.29 Fire Extinguisher and firefighting Equipment
Figure 3.30 Water storage tank for Firefighting
Figure 3.31 Firefighting Training.
Figure 3.32 Facilities for Employees
Figure 3.33 First Aid Kit for Medical Facilities
Figure 3.34 Photos of Ferry for employees
Figure 4.1 Location of Air Quality Monitoring Points
Figure 4.2 Air Quality Sampling Stations.
Figure 4.3 Photos of Boiler Stack Gas Monitoring.
Figure 4.4 Locations of Water Quality Sampling Points
Figure 4.5 Photos of Water Sampling collecting
Figure 4.6 Wastewater Quality collecting points
Figure 4.7 Wastewater Quality collecting points
Figure 4.8 Soil Quality Sampling Point.

Figure 5.1 Production Lines for Manufacturing Jellies and Related Pollutions	190
Figure 6.1 Safe Procedure to follow during Earthquake Time	207
Figure 6.2 Emergency Route of Thai Faster Products and M.K Co., Ltd	209
Figure 6.3 Sequential procedures when employees discovered the fire Basic fire	
suppression plans	219
Figure 6.4 Structure on fire prevention and extinguishing severe	221
Figure 6.5 Location of Firefighting Equipment (Thai Faster Product and M.K Co.,	
Ltd)	222
Figure 6.6 Environmental Management Team (Organzation)	226
Figure 6.7 Green Plan and Landscape layout	230
Figure 7.1 Suggestion Box and WCC meeting record photo	237
Figure 8.1 Photos Record of Employees Discussion Program	239
Figure 8.2 Recorded Photos taken from Public Disclosure Meeting	242

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

#### DOCUMENT CERTIFICATION AND DECLARATION

This project report on Environmental Management Plan has been prepared by Green Myanmar Environmental Services Co., Ltd.

I, (authorize person of Thai Faster Products & M.K Co., Ltd.) as proponent of this project, do hereby solemnly affirm and declare that I fully understand and undertake to operate the project strictly in accordance with the following fact.

- Comply with all Myanmar laws, rules and regulations, including Special Economic Zone Law and Clauses 14 and 15 of the Environmental Conservation Law (2012).
- Ensure that legal and other obligations are incorporated in the designs, procedures and project controls, Communicate legal and other requirements to personnel and contractors accountable for compliance,
- Ensure all relevant legal and other requirements and associated documentation (e.g., licenses, permits, approval applications) are readily available on site to company personnel, contractors, subcontractors and consultants,
- Conduct a compliance audit at least annually and ensure there is a process in place to monitor on-going compliance with all legal and other requirements.
- According to the EIA Procedure section 77, we soundly follow the commitment of the Environmental Management Plan (EMP), mitigation measures of the EMP & Monitoring Plan of EMP.
- Submit monitoring report regularly according to the ECD instruction
- Implement CSR
- Shall be responsible for the protection as well as perseveration of environment in and around the factory.
- Shall be able to control of air, water and land, and not to cause environment degradation.
- Takes necessary measures in order to fulfill environmental protection such as installing of wastewater treatment plant and other treatment producer to keep the project site environmental, friendly.
- I, the undersigned, certify that the particulars in this report are correct and true to the best of my knowledge.
- I hereby declare to strictly comply with provisions of regulations provided by the Environmental Conservation Department (ECD).

Signature	:	LA PRODUCIS
Name	U Kyaco Klin	W DI
Designation	General Manager.	11

Thai Faster Products & M.K.Co., Ltd.

Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar

Ph: 09 455640300

E-mail: thaifaster.mm@gmail.com

Date 18.10.2022

Green Myanmar Environmental Services Co., Ltd.

9

Manufacturing and Distribution of Various Types of Jellies

#### COMMITMENT AND ACKNOWLEDGEMENT

An Environmental Management Plan (EMP) describes the environmental condition of a project, including potential impact, formulation of mitigation measures, and preparation of institutional requirements and environmental monitoring. This EMP report was prepared using information from the following sources:

- Review of selected literature, reports, and advisors;
- Meetings with several interested parties;
- The experience of the Environmental Team: and
- Other information solicited from baseline data and stakeholders.

We strongly commit that this report was prepared in compliance with Myanmar Environmental Laws and Regulations.

The EMP team is grateful to the project proponent – *Thai Faster Products & M.K Co., Ltd.* for commissioning us to conduct this Environmental Management Plan (EMP) Report in respect of the proposed project. We would like to further acknowledge with great appreciation all those neighbors who participated in the public consultation meeting for their cooperation throughout the exercise.

We further acknowledge the support, either direct or indirect, from the various parties who assisted the EMP team towards the successful completion of this report.



Green Myanmar Environmental Services Co., Ltd.

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Date: -----

Manufacturing and Distribution of Various Types of Jellies

## **ABBREVIATIONS**

°C	Degree Celsius
СО	Carbon Monoxide
$CO_2$	Carbon Dioxide
CSR	Corporate Social Responsibility
dB (A)	Decibel (measured with A – weighted)
EMP	Environmental Management Plan
°F	Degree Fahrenheit
ft	feet
GMES	Green Myanmar Environmental Services
in.	Inch
IS	Indian Specifications
kg	kilogram
km	kilometer
kVA	kilo volt ampere
kWh	kilo Watt hour
l <sub>eq</sub>	Equivalent sound level
LPG	Liquefied Petroleum Gas
mg/m <sup>3</sup>	milligram per cubic meter
mg/Nm <sup>3</sup>	milligram per normal cubic meter
µg/L	micro gram per liter
MIC	Myanmar Investment Commission
mm	millimeter
MONREC	Ministry of Natural Resource and Environmental Conservation
mph	miles per hour
m/s	meter per second
MTU	Mandalay Technological University
NE	North-East
NGOs	Non-Governmental Organization
$NO_2$	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
NTU	Nephelometric Turbidity Unit
O <sub>2</sub>	Oxygen

Thai Faster Products & M.K Co., Ltd.

OH&S	Occupational Health and Safety	
Pcs	Pieces	
PM	Particulate Matter	
PM <sub>2.5</sub>	Particulate Matter 2.5 micrometer or less in diameter	
$PM_{10}$	Particulate Matter 10 micrometer or less in diameter	
ppm	parts per million	
$SO_2$	Sulfur Dioxide	
SO <sub>x</sub>	Sulfur Oxides	
sq.ft.	square feet or	
TDS	Total Dissolved Solids	
TFPMK	Thai Faster Products & M.K	
TSP	Total Suspended Particulate	
TVOC	Total Volatile Organic Compound	
USA	United States of America	
USOHS	Unite States Occupational Health and Safety	
US \$ & USD	United States Dollar	
WHO	World Health Organization	
YTU	Yangon Technological University	

Manufacturing and Distribution of Various Types of Jellies

## **EXECUTIVE SUMMARY**

In March 2018, Green Myanmar Environmental Services Company limited (GMES) was requested by Thai Faster Products and M.K. Company Limited to assist the Jelly Production Factory in the submission of the Environmental Management Plan (EMP) to the Myanmar Investment Commission.

Thai Faster Products and M.K. Company Limited is located at Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar. It is the joint venture company formed in accordance with the provision of Myanmar Company Act and the total investment is US \$ 2,000,000.

Thai Faster Products and M.K Co., Ltd. is a joint-venture company between Thai Faster Product Co., Ltd. (60 %), Mantakanok Co., Ltd. (30 %), and M.K Co., Ltd. (10 %).

Thai Faster Products Company Limited., a private company duly incorporated and organized under the laws of Thailand, Registration No. 0745555004749 having its registered address located at 99/99 Moo.7, Aom-Noy Sub-district, Kratumban District, Samutsakorn Province, Thailand.

Mantakanok Company Limited., a private company duly incorporated and organized under the laws of Thailand, Registration No. 0575541000136 having its registered address located at 106/2, Charoen-rad Road, Bangklo Sub-district, Bangkolam District, Bangkok, Thailand.

M.K Company., a private company duly incorporated and organized under the laws of Myanmar, Registration No. 644 having its registered address located at No.333, Pyay Road, Sanchaung Township, Yangon Region, Myanmar.

It aims to achieve economic, environmental and social sustainability throughout the business and supply chain, improving the use of raw materials and, in turn, increasing its efficiency and profitability.

Project Name	Manufacturing and Distribution of Various Types of Jellies	
Company name	Thai Faster Products and M.K. Company Limited (TFPMK)	
Company Registration	No. 855 FC, 2013 ~ 2014	
No.		
Project Address	Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan	
	Industrial Zone, Hlaing Thar Yar Township, Yangon Region,	
	Myanmar	
Type of Land	Industrial Zone	
Area of Land	2.036 Acres (87694.214 sq. ft.)	
Duration of Investment	50 years and Extendable 10 years two times	
Period of Land and	5 years (initial) and extendable for a further period up to 70 years	
Building Lease		
Leaseholder	U Pyae Phyo	
Established	5.2.2014	
Test Run	2.1.2015	
Commercial Run	4.1.2017	

Table (1) Salient feature of the project is tabulated in the following table.

Commence d'in a	Dista Citas Wet Ma Cast Wess Hards Classed		
Surrounding Environment	Right Side: Wet Ma Sut Wun Htauk Street Left Side: Garment Factory (Myanmar Yoo Ho Co., Ltd)		
	3、3		
Nearest Residential	Alae Village		
Places			
Nearest Water Bodies	Hlaing River		
Topography	Flat and Mainly Alluvium Area		
Contact Person	Daw Win Sanda		
Designation	Accountant		
Contact Numbers	Ph: 09455640300		
	E-mail: <u>thaifaster.mm@gmail.com</u>		
Company Investment	US \$ 2,000,000		
Form of Investment	Thai Faster Products Co., Ltd from Thailand 60 %		
	Mantakanok Co., Ltd from Thailand 30 %		
	M.K Co., Ltd from Myanmar 10 %		
Water Resources	2 unit of 2- inch Tube well, depth 100 ft		
Water Consumption	60,000 liter/day		
Energy Source	Three-Phase Power Supply		
Annual Electricity	912,000 kWh		
Consumption			
Annual Fuel	Diesel 15,850 Gallon		
Consumption	Paddy Husk 842.40 Ton		
Finished Product	Various Types of Jellies		
	Local Sales 90 %		
	Export Sales 10 %		
Estimated Employees	Local employees: 188		
(Year -1)	Foreign employees: 8		
Operating Time	Working Hours		
_	Monday to Friday 07:00 to 16:00 and		
	Saturday 07:00 to 11:00		
	No. of Working Days per Month : 26 days		
	No. of Working Days per week : 6 days		
	(Monday to Saturday)		
	Shift : 1		

#### Manufacturing and Distribution of Various Types of Jellies

#### **Details of Environmental Team**

Details of the EMP team are presented in the following Table.

Table (2) Details of the EMP Team

No	Title of Post	Term of Reference	Nominee, Organization, Transitional Consultant Registration Number
1	Chief Technical Manager	<ul> <li>Advise on the design of EMP</li> <li>Technical meeting &amp; Workshop</li> <li>Monitoring of EMP process</li> <li>Public consultation</li> <li>Quality Control and Check</li> <li>Data compilation &amp; analysis</li> </ul>	Engr. U Kyaw Soe Win Green Myanmar Environmental Services Experience in IEE processing No.0019
2	Air Quality Management Consultant	<ul> <li>Advise on Air Quality measuring</li> <li>Advise on Technical</li> <li>Advise on Air pollution analysis and mitigation measure</li> <li>Advise on Assessment and Calculation of base on air quality result</li> <li>Advise on preparation of report</li> </ul>	Engr. U Sein Thaung Oo Green Myanmar Environmental Services Professional Engineer No.0023
3	Environmental Consultant	<ul> <li>Advise on the design of EMP</li> <li>Develop term of reference for duty &amp; responsibility among EMP team</li> <li>Advise on the environmental baseline</li> <li>Advise on the field survey</li> <li>Facilitate technical analysis</li> <li>Streamline the Environmental Management Plan</li> </ul>	Engr. Daw Khin Swe Aye Former Lecturer. Department of Chemical Engineering, Rangoon Institute of Technology No.0021
4	Consultant on Environmental Baseline	<ul> <li>Design of environmental baseline; methodology, sampling framework, field testing method, and analytical tool</li> <li>Training of field staff for baseline data collection</li> <li>Analysis and Report Preparation for Industrial Process, Potential Impact, Alternative Design, and Pollutant Control</li> <li>Brainstorming for Environmental Monitoring and Management</li> </ul>	Engr. Dr. Maung Maung Win, Retired Professor and Head, Chemical Engineering Dept. YTU and Consultant for Environmental Management in Myanmar, Thailand and USA No.0027
5	Consultant on Environmental Quality Management	<ul> <li>Assist in preparation of guideline for environmental sampling of air and water quality</li> <li>Monitor the sample collection</li> <li>Register and inspect the sample</li> </ul>	Daw Khin Shwe Htay, Former Lecturer, Chemical Engineering Dept., YTU. Environmental Engineer

	I		
		collected	N. 0022
		• Assist in report preparation for environmental baseline	No.0022
6	Environmental and Social Operation and Field	<ul> <li>Develop operational checklist for Environmental Survey</li> <li>Facilitate technical meeting and record keeping</li> </ul>	U Khin Aung General Manager, Green Myanmar Environmental Services
	Coordinator	<ul> <li>Assist in data mining and secondary data collection</li> <li>Supervise field survey</li> <li>Coordinate with local authority and village level meeting</li> </ul>	No.0025
7	Consultant for Laboratory Analysis	<ul> <li>Advise on data processing and laboratory testing</li> <li>Prepare instruction for laboratory testing</li> <li>Check the result of environmental laboratory testing</li> <li>Compare the laboratory result and verification</li> </ul>	U Myo Myint Retired Factory Manager of Alcohol Distillery Beelin, Ministry of Industry (1) No.0026
8	Specialist on waste management	<ul> <li>Collecting field data for industrial and municipal waste</li> <li>Assist in Laboratory Testing</li> <li>Data processing, computing, projection, modeling and analysis</li> <li>Assist in report preparation</li> </ul>	Engr. Daw Tin May Soe, Retired Professor & Head, Chemical Engineering Dept., MTU. No.0028
9	Environmental Consultant	<ul> <li>Advise on the preparation of EMP</li> <li>Develop terms of reference for duty and responsibility among EMP team</li> <li>Advise on the environmental baseline and field survey</li> </ul>	Engr. U Maung Maung Aye Construction Coordinator Badamyar Topside Construction, Total E&P Myanmar)
10	Environmental Operation and Team Leader	<ul> <li>Develop operational checklist for Environmental Study</li> <li>In charge for preliminary field visit</li> <li>Supervise field survey</li> <li>Checking to the final report</li> </ul>	U Kyi Han Bo Quality Engineer Green Myanmar Environmental Services
11	Technician	<ul> <li>Environmental and Social Survey</li> <li>Data analysis</li> <li>Report preparing and formatting</li> </ul>	U Myo Thet Naung Team leader U Aung Kyaw Than Monitoring Technician U Myo Min Htun Assistant Monitoring Technician Green Myanmar Environmental Services Co., Ltd

Manufacturing and Distribution of Various Types of Jellies

## POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK Policy, Legal and Institutional Framework

## Existing Myanmar Laws Relevant to Project

A shortlist of existing Myanmar laws that CTM committed to follow for the proposed Development project are described below.

- The National Environmental Policy (1994)
- The Environmental Conservation Law (2012) and the Environmental
- Conservation Rules (2014)
- The Environmental Impact Assessment Procedure (2015)
- The National Environmental Quality (Emission) Guidelines (2015)
- The Port Authority Law (2015)
- The Prevention of Hazardous from Chemicals and Related Substances Law (2013)
- & The Prevention of Hazardous from Chemicals and Related Substances Rules
- (2016)
- The Export and Import Law (2012)
- Occupational Health and Safety (draft) Law, (2019)
- The Myanmar Special Economic Zone Law (2014)
- The Myanmar Special Economic Zone Rule (2015)
- Myanmar Investment Commission Notification No.1/2013 and No.1/2014
- (Economic activities which require EIA)
- Ministry of National Planning and Economic Development: Notification No.81/
- The Worker's Compensation Act (1923)
- The Labor Organization Law (2012)
- The Labor Dispute Settlement Law (2012, Amendment in 2016)
- The Natural Disaster Management Law (2013)
- International Conventions, Treaties and Agreements

## **Project Location**

The proposed project, "Manufacturing and Distribution of Various Types of Jellies", is implemented at Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar and the location map is shown in the following Figure 2.3. It is bounded by Rice Mill (Shwe La Won Co., Ltd) in the east, Ka Naung Min Thar Gyi Street in the west, Garment Factory (Myanmar Yoo Ho CO., Ltd) in the south and Wet Ma Sut Wun Htauk Street in the north. The geographical coordinates of project site are as follows:

Latitude:	16° 54´ 35.615" N	1
Longitude:	96° 04´ 13.152" E	ļ

## Environmental Management Plan (EMP) Manufacturing and Distribution of Various Types of Jellies



Figure (1) Location of the Factory

#### Site Boundaries and Access Road

It is bounded by:

Rice Mill (Shwe La Won Co., Ltd)	East direction
Ka Naung Min Thar Gyi Street	West direction
Garment Factory (Myanmar Yoo Ho CO., Ltd)	South direction
Wet Ma Sut Wun Htauk Street	North direction

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure (2) Site Boundaries and Access Road of the Project

Manufacturing and Distribution of Various Types of Jellies

#### Infrastructure

The project site consists of four buildings:

- 1. Factory Building (155 ft. x 180 ft.),
- 2. Boiler Building (66 ft. x 72.5 ft.),
- 3. Houses for Employee (95 ft. x 25 ft.) and
- 4. Canteen (53 ft. x 23 ft.).

The layout and photos of existing buildings and infrastructures including raw materials storage area, production area, utility area, office area, greenbelt area and parking area etc. are shown in the following Figure (3).



Figure (3) Factory Layout Plan

Manufacturing and Distribution of Various Types of Jellies

#### **Product Profile**

The proposed investment business is the operation of the business involving the manufacturing and distribution of various types of jellies. More specifically, the proposed investment will involve the manufacturing and distribution of the following products:

- (1) Hero Jelly Cup
- (2) Hero Plus Jelly
- (3) Daiyamoto Light Kit Jelly Cup
- (4) Daiyamoto Big Cup Jelly

The specification of product is shown in the following table.

Table (3) List of Product

No.	Particular	Weight (g)
1	Hero Jelly Cup	20
2	Hero Plus Jelly	120
3	Daiya Moto Light Kit Jelly Cup	55
4	Daiya Moto Big Cup Jelly	130







Figure (4) Photo of Product Sample

Manufacturing and Distribution of Various Types of Jellies

#### **Production Capacity**

The proposed project is to produce various types of jellies. For each type of jelly products, 90 % of total production capacity will be sold at local market and the remaining 10 % will be exported to foreign countries. The proposed production capacity for local and export are listed in Table -4 and 5. The production capacity is based on one shift a day and 26 working days per month.

	Due les st	De alaine De n	Estimate Annual Production Capacity (Carton)							
No.	Product Name	Packing Per Carton		Year						
	Ivanie	Carton	1	2	3	4	5-30			
1	Hero Jelly Cup	20 g x 35 cups x 12 bags	216,000	368,280	432,000	432,000	475,200			
2	Hero Plus Jelly	120 g x 6 bags x 16 packs	40,500	129,600	162,000	162,000	178,200			
3	Daiyamoto Light Kit Jelly Cup	55 g x 15 cups x 12 packs	90,000	172,800	216,000	216,000	237,600			
4	Daiyamoto Big Cup Jelly	130 g x 6 cups x 12 packs	27,000	259,200	324,000	324,000	356,400			
	Total Productio	n Capacity	373,500	929,880	1,134,000	1,134,000	1,247,400			

Table (4) Annual Production Capacities of Various Types of Jellies (Local Sale)

		_						
		Decking Dor	Estimate Annual Production Capacity (Carton)					
No.	Product Name	Packing Per Carton			Year			
		Carton	1	2	3	4	5-30	
1	Hero Jelly Cup	20 g x 35 cups	24,000	45,320	48,000	48,000	52,800	
		x 12 bags						
2	Hero Plus Jelly	120 g x 6 bags	4,500	18,000	18,000	18,000	19,800	
		x 16 packs						
3	Daiyamoto	55 g x 15 cups	10,000	24,000	24,000	24,000	26,400	
	Light Kit Jelly	x 12 packs						
	Cup							
4	Daiyamoto Big	130 g x 6 cups	3,000	16,000	36,000	36,000	39,600	
	Cup Jelly	x 12 packs						
Total F	Production Capaci	ty	41,500	103,320	126,000	126,000	138,600	

#### **Raw Materials**

The ingredients/raw materials for jelly production are sugar, fructose syrup, carrageenan powder, lucustbeen gum, konjakku flour, artificial flavor and artificial color. Thai Faster Products and M.K. Company Limited have a plan to purchase sugar and paper cardboard (carton) from local market and other raw materials are imported from abroad. Required amounts of raw materials to be imported and to be purchased from local market are shown in Table (6) and (7) respectively. Food grade Chemical list is shown in table (8).

## Manufacturing and Distribution of Various Types of Jellies

Table (6) Annual Requirements of Raw Materials									
Ν	Particulars	Unit			Quantity			Importe	
0.	1 articulars	Omt	Year 1	Year 2	Year 3	Year 4	Year 5-30	d	
1	Carrageenan Powder	Kg	11,085	28,406.8	34,740	34,740	38,214	Thailand	
2	Locust bean Gum	Kg	11,830	30,148.8	36,840	36,840	40,524	Thailand	
3	Konjac Gum	Kg	4,984	12,706.96	15,528	15,528	17,080.8	Thailand	
4	Artificial Flavor	Kg	3,856	9,965.44	12,192	12,192	13,411.2	Thailand	
5	Artificial Color	Kg	1,114.5	2,895.72	3,546	3,546	3,900.6	Thailand	
6	PP Cup								
	- Hero Jelly	cup	100,800,000	173,712,000	201,600,000	201,600,000	221,760,000		
	Daiyamoto	cup	18,000,000	35,424,000	43,2000,000	43,2000,000	47,520,000	11	
	Light Kit							local	
	- Daiyamot	cup	2,160,000	19,814,400	25,920,000	25,920,000	28,512,000		
	Big Cup								
7	Plastic Bag						6,336,000		
	- Hero Jelly	bag	2,880,000	4,963,200	5,760,000	5,760,000	0,330,000 19,008,000	local	
	- Hero Plus	bag	4,320,000	14,169,600	17,280,000	17,280,000	19,008,000		
8	Plastic Film								
	- Hero Jelly	pcs	100,800,000	173,712,000	201,600,000	201,600,000	221,760,000		
	-Daiyamoto	pcs	18,000,000	35,424,000	43,200,000	43,200,000	47,520,000	Thailand	
	Light Kit							Thananu	
	-Daiyamoto	pcs	2,160,000	19,814,400	25,920,000	25,920,000	28,512,000		
	Big Cup								
9	Paper Inner								
	Box								
	-Daiyamoto	box	1,200,000	2,361,600	2,880,000	2,880,000	3,168,000	local	
	Light Kit							iocai	
	-Daiyamoto	box	360,000	3,302,400	4,320,000	4,320,000	4,752,000		
	Big Cup								
1 0	Plastic Tape	pcs	415,000	1,033,200	1,260,000	1,260,000	1,386,000	local	

## Table (6) Annual Requirements of Raw Materials

### Table (7) Annual Requirements of Raw Materials (Purchased from Local)

No	Particulars	Unit	Quantity					
110		Omt	Year 1	Year 2	Year 3	Year 4	Year 5-30	
1	Pure refined Sugar	Kg	485,800	1,239,408	1,514,400	1,514,400	1,665,840	
2	Paper Cardboard						1	
-	Hero Jelly Cup	ctn	240,000	413,600	480,000	480,000	528,000	
	Hero Plus Jelly	ctn	45,000	147,600	180,000	180,000	198,000	
	Daiyamoto Light Kit Jelly Cup	ctn	100,000	196,800	240,000	240,000	264,000	
	Daiyamoto Big Cup Jelly	ctn	30,000	275,200	360,000	360,000	396,000	

#### Manufacturing and Distribution of Various Types of Jellies

Items	Storage state	Production for Hero Boys 30 Bath and Daiya 21 Bath jellies			Logistic	Imported
		Day (Kg)	Month (Kg)	Yearly (Kg)		
Tripotassium Citrate (P-PCT)	Bag	2.714	81.410	976.92		Thailand
Maltodextrin	Bag	8.832	264.960	3,179.52		Thailand
Citric Acid Monohydrate	Bag	3	90	1,080		Thailand
Grap Flavor Symrise (F-GRS)		0.83	2.478	29.74		Thailand
Orange Flavor(Symrise) (F-ORS)	Bin	0.022	0.662	7.95		Thailand
Lychee Flavor (VM) (F-LCV)		0.029	0.875	10.50		Thailand
Grap Flavor(MV/GRV/) (F-GRM)		0.067	2.016	24.19	M.K	Thailand
Grape Flavor(Sensient ) (F-GRV)	Bin	0.198	5.950	71.40	Trading	Thailand
Stawberry Flavor TFF (F-STT)		0.060	1.800	21.60	logistic	Thailand
Orange Flavor (Thai Inter) (F-ORT)		0.227	6.806	81.67		Thailand
Salacider Flavor (Firmenich) (F-SLF)	Bin	0.218	6.528	78.34		Thailand
Pineapple Falvor (Thai Inter) (F-PAT)		0.110	3.311	39.74		Thailand
Aspartame Powder (P-APT)	Carton	0.226	6.775	81.30		Thailand
Acesul FAME-K (P-ACEF)	Carton	0.236	7.085	85.02		Thailand
Sunset Yellow FCF (P-SSY)	Pouch	0.250	7.500	90.00		Thailand
Dark Red Carmoisine (P-CMI)	Pouch	0.079	2.356	28.27		Thailand
Tartrazine (P-TTZ)	Pouch	0.050	1.500	18.00	Lo	ocal
Probenz SG Sodium Benzoate (P-BZA)	Bag	0.916	27.492	329.90	Lo	ocal

#### Table (8) Food grade Chemical Lists

### **Manufacturing Process**

Jelly (Hero Boys and Daiya Moto) manufacturing process can be divided into: 1) Preparation of Raw Materials, 2) Mixing, 3) Filling, 4) Cooling and 5) Packaging.



Figure (5) Process Flow Chart for Manufacturing of Hero Boys

#### Manufacturing and Distribution of Various Types of Jellies

#### Thai Faster Products & M.K Co., Ltd.



Figure (6) Process Flow Chart for Manufacturing of Daiya Moto

#### **Employment Plan**

Thai Faster Products and M.K. Company Limited have a plan to arrange the employment plan for the investment business as listed in the following table. But company has assigned initially only 196 persons of employment for the production of jelly products.

Table (9) Employment Plan

Tune of Demonrol	Donartmont	No. of Persons						
Type of Personnel	Department	Year 1	Year 2	Year 3	Year 4	Year 5-30		
Local Personnel Req	Local Personnel Required							
Executive Level	Management	1	1	2	2	2		
Expert Level	Production	3	3	3	3	3		
Chief Officer	Quality Control	10	10	15	15	15		
Secretary	Admin	4	4	6	6	6		
Skill Employees	Production	20	25	30	30	30		
Employees	Worker	150	250	300	300	300		
	Total	188	293	356	356	356		
Foreign Experts and	d Technicians Perso	nnel Requir	ed					
Executive Level	Management	3	2	1	1	1		
Expert Level	Production	3	3	3	3	3		
Chief Officer	Admin	2	2	2	2	2		
	Total	8	7	6	6	6		

### Working hour and days

Working hours for the production process are:

7:00 am to 4:00 pm (Monday to Friday) and 5:30 pm (overtime)

7:00 am to 11:00 am (Saturday).

Sunday is the holiday.

Annual Working day: 300 day/yr

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products and M.K. Company Limited provide proper leave scheme, overtime allowance and yearly bonus which shall be satisfactory for the workers. Moreover, there will provide First Aid and Health Care Program to the workers.

#### Wastewater Discharge and Treatment system Wastewater Discharge

There is wastewater from the production and domestic wastewater will be discharged. Process waste water may be discharged from the floor washing, tanks washing and cooling process. Domestic wastewater from canteen, office and toilet flushing shall be collected in septic tanks for treatment. Storm water are discharged directly flow to the municipal drain. Wastewater discharging and Disposal Detail is described the following Table (10).

No	Source		Amount (lite	System	
INO	Source	Day	Month	Year	
1	Process wastewater	10,000	260,000	3,000,000	Waste water Treatment Plant
2	Domestic wastewater	200	5,200	60,000	i icament Flant

Table (10) Wastewater discharging and Disposal Detail

#### Wastewater Treatment System

The process wastewater will be treated with wastewater treatment plant (WWTP) that is installed in the factory. The process flow chart and wastewater treatment pond is as shown in the following Figure (7).



Figure (7) Waste water Treatment Plant

Manufacturing and Distribution of Various Types of Jellies

#### **Other Facilities**

In order that the employees may enjoy proper welfare commensurate with that of a prestigious Company, the company has set up a plan, as stated below, for employees as employees' welfare plan.

#### Self- cleanliness

- (a) To teach the laborers how to keep self-cleanliness: washing hands with soap before and after having meals and after using the toilet.
- (b) To train them to wear clean uniforms, gloves, masks and caps.
- (c) There will be a clean and ventilated room for canteen with enough tables and benches, clean drinking water and soap for washing hands
- (d) The toilet will be provided with soap, enough water and deodorants. If necessary, some kind of antiseptic liquid will be sprayed.
- (e) Provide Purified drinking water to the employees.

#### **Medical Care**

The medicine box of the factory of Thai Faster Products and M.K Company Limited, it is the basic medicine that employees need when they felt sick or have a little accident during the operation. If the employee is seriously ill or has a serious accident, there have to go to hospital by the factory.

- (a) Sometimes, there will be educational seminar on medical care.
- (b) There will be medical check-ups for some kinds of infectious diseases like tuberculosis.
- (c) If necessary, treatment with free of charges will be given.
- (d) The Company provides Covid-19 Vaccination for employees see the attached in Appendix (28).

#### Ways of Training

- (a) Our members will be trained to be honest, good and clever ones by using awarding and punishing system.
- (b) Those who work hard will be encouraged by suitable on-job training courses
- (c) There will be a promotion and demotion system depending on their skills.
- (d) They will be trained to have mutual respects among senior and junior laborers and supervisors.
- (e) They will be trained to understand the value of unity in every field.
- (f) There will be provided emergency reponse training to the workers.

#### **Transportation Arrangement**

The transportation arrangement for raw material, finished goods wand ferry for worker is as shown in following table the factory will should be arrange the effective car parking for ferry bus. The ferries are stopped inside the factory estate. Therefore, traffic jam will not cause by the ferry car of Thai Faster Products & M.K Co., Ltd.
## **Description of the Environment and Social Environment**

TFPMK Jelly factory is located in Shwe Lin Pan Industrial Zone, Hlaing Tharyar Township, and Yangon Region. It is of prime importance to collect baseline data in order to identify the potential environmental issues to be managed through the operation phase. Information was gathered on the existing physical environment, particularly as related to climate, geology, water quality, air quality and noise. The secondary data collection is based on September 2020 General Administration Department of Hlaing Tharyar (Eastern) Township.

Туре					Description			
Natural Environn	nent							
Meteorology	•	Hlaing Tharyar (Eastern) Township is located in the northern district of Yangon Region. The location of the township is between north latitude 16° 47' and 20° 12' and between east longitude 96° 12' and 100° 13'. It is occupies an area of 13.96 square miles.						
Topography	•	Insein Township is located in the eastern part of the Hlaing Tharyar (Eastern) Township, Hlaing Tharyar (West) Township from the West, Twantay township from th South and Shwe Pyi Thar township from the North of Hlaing Tharyar (East) Township are respectively.						
Geographic	•	The to	pograp	hy of Hlair	ng Thayar (East) To	ownship is fla	t.	
Hydrology Climate	•	from west to east and merges into the Hlaig River which flowes flow north to south. Pan Hlaing River is shallow, 2015. In January, the river was re-excavated and boates can travel along the river.						
					Rainfall	Tempe	ratura	
		No.	Year		Kannan	Summer	Winter	
				Rainy	Total Rainfall (inches)	(°C)	(°C)	
				Days		Highest	Lowest	
		1	2017	123	132.05	40	27	
		2	2018	105	113.28	41	26	
		3	2019	112	102.01	39	26	
		4	2020	101	97.72	40	26	
Sea level	•	The se	ea level	of Hlaing	Thayar (Eastern) T	ownship is 10	00 feet.	
Biodiversity								
Natural plants	•	• The natural plants that grow naturally in Haling Thayar (Eastern) Township are; the clover emerald tree vanda even kukko tree and boskai tree.						
wild animal	•	There	are no	wild anima	ls in the Hling Thy	var (Eastern) 7	Township.	
Natural	•	Hlain	g thaya	ar (Eastern)	) Township is loc	atd between	Pan Hlaing	

Table (11) Environmental and Social Condition near the Project Area

Environment		River and Hlaing Reiver, so the environment is lush and green.					
Natural	•	• To protect the environment, planting shady plants on the left/ right					
Environmental		sides of highways every year. Raising awarenss about not catching					
conservation		fish d	luring fishing tri	ps in lakes/ o	channels. The levant	t deparments,	
		to ed	ucate and pread	h according	to the industrial zon	nes to ensure	
		that v	waste discharges	s from the f	actories are organiz	ed. There is	
		coope	ertaiton with NG	Os.			
Administrative	•	Hlain	g Tharay (Easter	n) Township	is Ward (9) It is con	nposed of (5)	
		villag	ge groups and (9)	villages.			
Housing/	•	As o	of the end of	September 2	2020, Hlaing Thay	var (Eastern)	
Population and		Town	ship has 21,141	urban house	cholds, 7,152 village	e households,	
Communities		29,05	6 urban househo	lds, and 12,6	30 village household	ls.	
Population by	•	The	polulation by	National Etl	nnic Group of Hl	aing Thayar	
National Ethnic			ern) Township is		1	0,	
Group			, I	·			
		Sr.		No. of			
		No.	Ethnicity	Persons	Percentage (%)		
		1.	Kachin	101	0.044		
		2.	Kayah	8	0.033		
		3.	Kayin	2,638	1.150		
		4.	Chin	434	0.18		
		5.	Mon	448	0.19		
		6.	Burmese	216,986	94.64		
		7.	Rakhine	3,173	1.37		
		8.	Shan	322	0.14		
Religion	•	Acco			people living in H		
		(Easte	ern) Township,	the popul	lation is Buddhis	t (220,859);	
		Chris	tianity (3,461); H	Hindi (3,781);	Islamabad (1,163) r	respectively.	
Population by	•	The	number of for	eigners livin	g in Hlaing Thay	var (Eastern)	
Foreigner				-	ch is (0.42%) of th		
0			-		04 people) and $(0.1270)$	-	
					e 111 Pakistanis,		
					583 Bangladeshis (0	,	
		villag	e population.	Others (2692	2) are 2.24% of t	he township	
		popul	ation.				
Socio-economic							
Economical	•	Hlain	g Thayar (Easter	m) Township	is located in Yango	n Region and	
			•••	, <b>1</b>	development. The lo	U	
			1		and most of them we	1 1	
			-	v employees a	and most of them wo	JIK as factory	
		worke					
	•		tock farming is o				
	•	The t	ownship is locat	ed on the Ya	angon-Pathein road a	and has good	
		transp	portation. Althou	ugh the town	nship does not hav	e any major	
		produ	icts, there are exp	ports from the	e Irrawaddy region.	-	
		•	·				
L	L						

Manufacturing and Distribution of Various Types of Jellies

Land Use	• Land	using of Hlaing Thayar (Eastern) Township is	the follow table.			
	No.	Types of Land	Area (acres)			
	1.	Net Cultivation Area				
		(i) Paddy land				
		(ii) Farmland for crop				
		(iii) Cultivated Island				
		(iv) Orchard				
		(v) Hillside				
	2.	Vacant Land Area				
	3.	Industrial Land	3455.678			
	4.	Rural Land and Others	13191.552			
	5.	<b>Reserved Forest and Protected Forest Area</b>	-			
	6.	Wild forest	-			
	7.	Virgin Soil area	-			
	8.	Non-cultivated area	-			
Industry	As the	industry of Hlaing Tharay (East Ping) Towns	hip			
	• Arm	y garment factory (1).				
	• 108	factories in Industrial Zone (1).				
		factories in Industrial Zone (2).				
		actories in 3 industrial zones				
		factories in 4 industrial zones				
	<ul> <li>13 factories in 6 industrial zones</li> </ul>					
		actories in 7 industrial zones				
		factories in Shwe Linping Zone				
		re are total of (92) privately owned domestic	industries in the			
	township					
		are (22) cooperative societies and (1) cooper	ative societies in			
		g Thayar (East Pyong) township.				
Economic	Comm	nodity depot in Hlaing Tharay (Eastern) Tow	nship. There are			
Infrastructure	no fairgr					
	• There	e are 11 state-owned markets.				
	• There	e are (4) malls.				
	• There	e are 8 private banks and 1 government bank.				
		e are 467 stores and shops.				
	• There	e are (3) drinking water industries.				
Livelyhood	• The nu	umber of people working in Hlaing Thayar (Ea	astern) Township			
	is gov	vernment employees (2887); service industri	ry (185 people);			
	Transa	actions (978 people); Industry (17,350 people)	); Random (3270			
		e) and other business (2645 people).				
The number of		ing Thayar (Eastern) township, the number of	f working people			
working people		98) and the number of unemployed (22709) is				
and unemployed						
Educational	• High s	schools (8) in Hlaing Tharay (Eastern) Towns	hip. High school			
	-	n (5) schools; Primary school (14) Pre-prir				
		are 7 monastic education schools.	nury 5011001 (+),			
Health Information		are 2 (2) government hospitals in Hlaing '	•			
	Towns	ship. (2) private hospitals; Dispensary (113); a	nd there are 4 (4)			

	Rural Health Departments/Divisions.
	• The most common diseases in the region are diarrhea, tuberculosis
	stomach ache Liver disease.
Sports and	• Soccer field (2) in Hlaing Tharay (Eastern) Township. Volleyball
entertainment	court (2); Golf course (1); Cinema (1); Public Park (1).
industry	
Religious	• As religious buildings in Hlaing Tharay (Eastern) Township, Pagoda
Information •	(1); Monastery (46); Nunnery School (2); There is (1) temple.
	• A prominent god The pagodas are Aung Munthaya Pagoda, Shwe
	Rin Aye Pagoda.

Source- <u>www.gad.gov.mm</u>

## Primary Data for the Surrounding Environment Air Quality

The objective of the air-quality sampling program is to document baseline air quality conditions in the project area. Seven sampling points were selected in the project area. Field investigation was done by EMP team in March 2018 for baseline data of water quality, air quality and noise. These points are listed in Table 4.9 and shown in Figure 4.2.

Ambient Air Quality result is shown in Table 4.10 by comparing with air quality guidelines of Myanmar Environmental Quality (Emission) Guidelines 2015 from Ministry of Natural Resources and Environmental Conservation.

Ambient particulates levels were much higher than the recommended air quality guidelines established by National Environmental Quality (Emission) but levels of other parameters were lower than this standard.

The ambient  $PM_{2.5}$  and  $PM_{10}$  level is higher than the NEQG due to the transportation of motor vehicle and near the road with the entrance of the factory. Moreover, cumulative impact may be because the factory is located at the Industrial zone. There should be implemented according to EMP for this impact.

## Water Quality

The objective of the water-quality sampling program is to document baseline conditions of water quality in the project area. Five sampling points were selected in the project area. These points are listed in Table 4.13 and shown in Figure 4.5.

Samples were compared with Drinking Water Standards of WHO, EPA and Indian Specification for tube well water and drinking water; and Water Quality Guidelines of National Environmental Quality (Emission) Guidelines from Ministry of Natural Resources and Environmental Conservation for waste water.

These samples were analyzed at Laboratory of GMES Co., Ltd and at Ecological Laboratory of Advancing Life and Regenerating Motherland (ALARM) to confirm the analysis results from GMES and the results obtained are shown in Appendix (14).

The values of location 2, 3, 4, 5 are not treated and the factory has already installed wastewater treatment plant (WWTP). There will be discharged to the municipal drain channel after treated of wastewater in the WWTP.

Manufacturing and Distribution of Various Types of Jellies

#### Wastewater Quality

The objective of the waste water-quality sampling program is to document baseline conditions of water quality in the project area. Three sampling points were selected in the project area.

These results were compared with Guidelines of National Environmental Quality (Emission) Guidelines from Ministry of Natural Resources and Environmental Conservation for waste water (Food and Beverages Processing).

These samples were analyzed at Laboratory of GMES Co., Ltd and at Ecological Laboratory of Advancing Life and Regenerating Motherland (ALARM) to confirm the analysis results from GMES and the results obtained are shown in Appendix (15)

The value of WWSP-1 (Processing discharge) and WWSP-2 (inlet of WWTP) is not treated and the factory has already installed wastewater treatment plant (WWTP). There will be discharged to the municipal drain channel after treated of wastewater in the WWTP.

The value of WWSP-3 is after treated from the Wastewater Treatment Plant. BOD, COD and Coliform were a little higher than the standard value and other parameters within the standard of National Environmental Quality (Emission) Guidelines. So, there will perform within the Guideline of NEQG for the effluent of wastewater value by the Thai Faster Products and M.K Co., Ltd.

#### .Noise Level

Three sampling points for noise level measurement were selected in the project area. These points are same as the air quality sampling points of Location-1, 6 & 7 listed in Table 4.21 and shown in Figure 4.8. Noise measurements were taken using Sound Level Meter (SD-4033SD) and the results recorded for the present study are presented in Table 4.22.

According to the Table 4.22, Noise level guidelines established by National Environmental Quality (Emission) are 70 dBA for factory surrounding and 55 dBA for residential vicinity. The average values of noise level recorded at location-1 (Ambient noise) monitored is slightly greater than the standard. This noise would be from ambient sources including vehicular traffic on the road.

The Noise level guidelines established by United State OHS is 105 dBA during the working time for 1 hour average of noise exposure limit. The average values of noise level recorded at location-6 (mixing room) and location-7 (boiler room) monitored is lower than the United State OHS standard.

#### **Soil Quality**

Soil sample was collected from beside the Boiler Section in the project area as shown in Figure 4.9. Laboratory of GMES Co., Ltd performed the analysis of soil sample by measuring the parameters such as pH, Chloride, Total Iron, Aluminum. Soil location point is shown in Figure 4.9 and the result is shown in Table 4.23.

These results shown in Table 4.23 are existing soil conditions of project area. At this condition, vegetation is already present and it looks healthy. So it can be concluded that existing soil is unpolluted. We were collected soil sample for the base line of the project current condition.

## Manufacturing and Distribution of Various Types of Jellies

The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.	< 20
The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.	< 40
The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.	< 60
The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/ or the cost of management intervention will be a significant factor in mitigation.	> 60
Perceived effect of the impact	
Beneficial impact	
Adverse impact	
	The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs. The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required. The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/ or the cost of management intervention will be a significant factor in mitigation. Perceived effect of the impact Beneficial impact

The significance of the impact, rated from Low to High, is indicated in the table below with an explanation of the impact magnitude and a guide that reflects the extent of the proposed mitigation measures deemed necessary.

Table (13) Summary of Impact Significances for Operation Phase

Impact Sources	Pollutants	Impact Duration	Impact Scale	Impact magnitude/ Severity	Impact probability	Total Score	Impact Significa nce Rating	
Air Quality								
Processing	PM, dust	Long term (4)	Site (1)	Low (2)	Definite (x5)	(35)	Low (Negativ e)	
Generator	CO, CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>x</sub> ,	Short term (1)	Local (2)	Low (2)	Definite (x5)	(25)	Low (Negativ e)	
Boiler	PM, SOx, NOx, COx	Long term (4)	Site (1)	Medium (6)	Definite (x5)	(55)	Moderate (Negativ e)	

## Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Truck and delivery car	SOx, NOx, COx	Medium term (3)	Local (2)	Low (2)	probable (x2)	(14)	Negligibl e (Positive)
Water Quality							
Domestic water	pH, BOD, COD, TSS, TDS, Oil & Grease	Medium term (3)	Site (1)	Medium (6)	Definite (x5)	(35)	Low (Negativ e)
Process wastewater	BOD,COD, TSS, TDS, color, Oil & Grease, pH	Long term (4)	local (2)	Medium (6)	Definite (x5)	(60)	Moderate (Negativ e)
Waste Disposa	l						
Hazardous Wastes	Water & soil	Medium	Site (1)	Low (2)	Definite (5)	(30)	
Non- Hazardous Wastes	Water & soil	term (3)	Local (1)	Low (2)	Definite (x5)	(30)	Low (Negativ e)
Domestic Wastes	Water & soil	Medium term (3)	Local (1)	Low (2)	Definite (x5)	(30)	6)
Noise			II				
vehicle movement,	worker health and	Short term (1)	Site (1)	Low (2)	Definite (x5)	(20)	Low (Negativ e)
operation of generators	surrounding environment	Short term (1)	Site (1)	Low (2)	Definite (x5)	(20)	Low (Negativ e)
Fire Hazards							
electric shock, Fuel Leakage, Smoking	PM, Dust and explosion	Permane nt (5)	Local (2)	High (8)	Definite (x5)	75	High (Negativ e)
<b>Emergency Ri</b>	sk						
Flood risk, cyclone, high tide Earthquake	Air, Water, Soil and human Health	Short term (1)	Regional (3)	High (8)	probable (x2)	24	Low (Negativ e)
Hazardous of	Machineries Han	dling					
Electric shock, improper instilling machines, Do not have regularly maintenance	Worker Health and Surrounding Environment	Permane nt (5)	Local (2)	High (8)	Definite (x5)	75	High (Negativ e)

Green Myanmar Environmental Services Co., Ltd.

## Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Boiler and air compressor							
Local Econom	У						
Job opportunities	Job opportunities for local people will be provided and regional will be boosted.	Long term (4)	Local (2)	Medium (6)	Definite (x5)	60	High (Positive)

## **Mitigation Measures for Operation Phase**

The mitigation measures for operation phase pollution of TFPMK's Jelly Factory are summarized in the following table.

Table (14) Mitigation Measures for Operation Phase

Activity & Sub Activities	Environmental Impacts	Mitigation Measures	Final Impacts
	0	peration Phase	
1. Air Pollution			
Process, Boiler, Generator, Truck and Delivery car	Air Quality	<ul> <li>Good ventilation and clear assess will be provided.</li> <li>Select diesel generator type with high combustion efficiency to minimize dark smoke generation</li> <li>Conduct regular maintenance</li> <li>Trained/Approved transports will be given work for the transportation of the raw materials / products.</li> <li>Proper records will be maintained.</li> </ul>	Low, as proper handling of material will be followed
2. Solid Waste Packaging materials such as waxed corrugated boxes, pallets, shrink wrap, strapping ties, drums & polystyrene	Soil contamina- tion	<ul> <li>Segregation of solid wastes will be done and will be sold for raising social- welfare fund.</li> <li>There will provide training programs to related employees for handling and storage of chemicals.</li> </ul>	Beneficial Impacts on the factory and surrounding environment

## Manufacturing and Distribution of Various Types of Jellies

3. Wastewater			
Effluent Generation from the Process, Utility	Water quality	<ul> <li>Segregation of the waste streams will be done.</li> <li>Less pollution streams will be treated.</li> <li>Treated effluent will be utilized for greenbelt, gardening &amp; firefighting requirement.</li> <li>Domestic wastewater will be disposed of into septic tank.</li> </ul>	Low impacts, As extreme care will be taken in treatment & monitoring of the quality of the effluent.
4 TT 1 TT			
4. Hazardous Waste	Jeneration		
Raw materials such as color, essence or flavoring ingredients	Soil, Water	<ul> <li>Preparation and mixing areas will be made of impervious surface to prevent leach ability.</li> <li>Records of quantity of waste generated will be maintained.</li> <li>Empty cans or drums will be sold to the vendors.</li> </ul>	Low impacts, due to preventive maintenance
5 Noise Pollution			
Noise Generation due to plant operation	Factory area & Environment	<ul> <li>Preventive Maintenance to ensure low noise generation.</li> <li>Personal Protective Equipment (Ear Plug &amp; Muff) will be utilized in the affected area.</li> </ul>	Low impacts, Due to preventive maintenance & usage of PPE's.
	1		
6 Storage of raw mat	erials and products		
Storage of raw materials	Air, Risk	<ul> <li>Proper Storage area for raw materials, fuel oil drums and finished products.</li> <li>Proper records will be maintained, Good ventilation &amp; clear assess will be provided.</li> </ul>	Low impacts, as proper Handling of material will be followed.
	L'		
7. Hazardous of Mac		. Installation of weating	Derefici-1
Effect on Worker Occupational	Effect on Worker	• Installation of machine prevention system with	Beneficial impacts on the

Green Myanmar Environmental Services Co., Ltd.

## Manufacturing and Distribution of Various Types of Jellies

#### Thai Faster Products & M.K Co., Ltd.

Health and Safety	Occupational	regular inspection on the	factory and
	Health and	system	surrounding
	Safety	• Regular safety training for workers in a accordance with	environment
		OHS training	
		<ul> <li>Avoid unnecessary accidents</li> </ul>	
8. Fires Hazard		Avoid diffecessary accidents	
	E stame and	Scheduled fire drill will be done.	Dama fi al al
• Accidental	Factory area		Beneficial
spillage of fuel	and	In all the necessary locations in	Impacts on the
from unconscious	Surrounding	the factory fire extinguish -hers	factory and
handling	Environment	must be in place.	surrounding
Ignorance of fire		The expiry date & working	environment
hazard improper		function of the fire extinguishers	
storage of raw		must be checked regularly.	
materials and		Regarded no-smoking sign	
finished products		ensure smoking area(s) are away	
-		from flammable materials.	
9. Greenbelt Develop	ment	•	
Greenbelt	Factory area	Development of good greenbelt	Beneficial
Development	and	within premises and at periphery	impacts on Air,
	Surrounding	of the premises.	Land & Noise.
	Environment	-	
10. Socio-economic			
Employment	Socio economy	Employment of the local people.	Beneficial
		Indirect employment to the	impacts on the
		service sector & suppliers.	socio economy
		Substantial benefits in the form	-
		of contracts to local agencies for	
		different services	
		Employment in Skilled, Semi	
		Skilled and Labor class.	
	1		

#### **Environment Management Plan**

The following sections describe the environment management system proposed for Operation phase. Thai Faster Products and M.K Company Limited must take responsibility to implement the environmental management plan as shown in below Table.

Table (15) E	Environmental	Management	Plan (	Operation	phase)
14010 (10) 2				o p <b>e</b> i mi o ii	p

#### Air Pollution Management Plan

Objective	• To reduce the source and amounts of the pollutants that is responsible for			
	the pollution of the air quality.			
	• To comply with national emission guidelines.			
Management	Maintain green area to improve air quality.			
Plan	• Regular checkup and scheduled maintenance of machineries and			

Green Myanmar Environmental Services Co., Ltd.

r				
	generators.			
	• Keep proper housekeeping in the factory or in the premises to reduce dust			
	generation.			
	• There is no open burning of waste materials on site.			
	• Install good ventilation system and dust emission system			
	• Employees are instructed to wear mask during working time in dust			
	generating area. Careful handling and weighting of the powder.			
	• All the bare land area is covered with grass field or paved with concrete.			
	• Generator exhaust is oriented away from people accommodated area.			
	• A system such as water spraying in the chimney should be implemented			
	to reduce particulate emissions from the boiler chimney.			
	• The ash from the boiler must be properly collected so that it does not			
	scatter.			
Responsible	EMT Team Leader/ Members			
Team	EWIT Team Leader/ Wembers			
Responsibility	• Implementation of above air pollution management plan.			
	• Contact the environmental service contractor for monitoring air quality as			
	scheduled.			
	• Report the results of the air quality monitoring to the management and			
	keep the records.			
	• Inform public about air quality at appropriate time.			

## Manufacturing and Distribution of Various Types of Jellies

Solid waste Ma	anagement Plan
Objective	• To dispose solid waste generated in proper way to prevent from pollution of soil and water body.
j	• To comply with government waste management policy.
Management Plan	<ul> <li>Hazardous Waste</li> <li>Storage <ul> <li>All waste, hazardous or not, must be contained to prevent it from blowing away and from leaching into surface or groundwater. Hazardous waste must be in containers or tanks clearly labeled with the words "Hazardous Waste". Volumes and time limits for storing hazardous waste on-site vary by generation category.</li> <li>Handling <ul> <li>All employees must be instructed to the Safety Data sheet and there must be wore suitable PPE when the hazardous materials handling. Skillful and training worker must be taken and holding on it.</li> </ul> </li> <li>Disposal <ul> <li>Hazardous waste must be disposed at permitted waste facility such as authorized organization/ YCDC. Record amount of waste regularly.</li> </ul> </li> </ul></li></ul>
Management Plan	<ul> <li>Non-Hazardous waste</li> <li>Storage <ul> <li>Non-hazardous waste needs to be removed from on-site at regular intervals to prevent release to the environment, and to avoid additional permit requirements. Nonhazardous waste and unused product must be contained to prevent discharge to the air, or runoff to surrounding land or water.</li> <li>Disposal <ul> <li>Non-hazardous waste disposed at permitted waste facility such as Yangon City Development Committee. Record amount of waste regularly.</li> </ul> </li> </ul></li></ul>
Responsible	EMT Team Leader/ Members
Team	
Responsible Team	EMT Team Leader/ Members
Responsibility	<ul> <li>To ensure the solid waste management plan is implemented.</li> <li>To monitor whether the solid waste is segregated accordingly or not.</li> <li>To check the waste transfer notes and documented.</li> <li>To avoid pollution of the environment due to solid wastes.</li> </ul>

### Manufacturing and Distribution of Various Types of Jellies

Noise Pollution	Management Plan
Objective	• To reduce the noise pollutant of the factory boundary environment.
Objective	• To comply with national guidelines and OHS guideline.
	• Use sound absorbing material such as curtains, insulation sheet and
	damper where necessary and appropriate.
	• Generator shall be put in the enclosed room.
Managamant	• Rotate the working shift for employees who work in the high noise area.
Management Plan	• Generator and machineries such as pumps have to be maintained
Flall	regularly.
	• Employees who work in the high noise area should be provided with
	enough ear plugs or ear mufflers.
	• Drivers must turn off the vehicle engines when not moving.
Responsible	EMT Team Leader/ Members
Team	
	• Implementation of above noise pollution management plan.
	• Contact the environmental service contractor for monitoring of noise level
Responsibility	as scheduled.
Responsionity	• Report the results of the noise level monitoring to the management and
	keep the records.
	• Inform public about noise quality at appropriate time.

### Water pollution Management Plan

	• To protect and mitigate for the water pollution.
Objective	• To protect and initigate for the water pollution.
00,000,0	• Prevent pollution of groundwater sources.
	• All drainage channels need to be covered by gratings.
	• Baskets must be provided for Silt and debris.
Monogoment	• Avoid disposing of used oil direct into the drain.
Management Plan	• Wastewaters from the production are collected to the wastewater
Flaii	treatment pond and discharge to the municipal drainage.
	• To provide awareness of discharge of wastw water for employees.
	• To monitor for the results of the water quality and keep the records it.
Responsible	EMT Teem
Team	EMT Team
	• To ensure the above EMP is well implemented.
Responsibility	• To monitor the effectiveness of the EMP.
	• To take action if there is any concern.
L	

#### Manufacturing and Distribution of Various Types of Jellies

Resource Utilizing Management Plan			
Objective	• To minimize the electricity usage and water usage.		
Management Plan	<ul> <li>Energy</li> <li>Use energy efficient lamp and devices. That costs more upfront but over the years it saves more money and energy.</li> <li>Use maximum day light.</li> <li>Educate employees regarding with the energy saving features of electrical appliances such as air conditioner, microwaves, fans, printers, computers and other devices to let them use these features to cut the energy usage.</li> <li>Plant shady trees outside of the building to protect from hotness of the building inside.</li> <li>Turn off and unplug the equipment when not using.</li> <li>Water</li> <li>Use eco flush toilets.</li> <li>Treated effluent will be utilize for greenbelt, gardening and firefighting requirement</li> <li>Domenstic wastewater will be disposed of into septic tank.</li> <li>Records of quantity of wastewater discharged will be maintained.</li> <li>Detect the leak and fix it immediately.</li> </ul>		
Responsible	EMT Team Leader/ Members		
Team			
Responsibility	<ul> <li>Report the electricity consumption and other energy issues to top management.</li> <li>Monitor the electricity consumption.</li> <li>If there is any concern, review the EMP.</li> <li>Take corrective action and fix it if it is required.</li> </ul>		

## **Resource Utilizing Management Plan**

#### **Occupational Safety and Health Management Program**

Thai Faster Products and M.K Company Limited currently maintain an occupational health and safety program actively managed by on-site staff. To implement the safety and health management for employees, the Occupational Health and Safety Management Committee was formed with the following members.

The duties and responsibilities of Occupational Health and Safety Management Committee are as follows.

- 1. To inspect the operation regularly with checklists for Safety and prevention of accidents.
- 2. To respond quickly when accident, illness or other emergency cases happen.
- 3. To convene the monthly committee meeting for discussing the situation of the Occupational Health and Safety status, accidents, emergency, other production problems and mitigation measures.

- 4. To report the findings and remarks from the monthly meeting to the administration for implementation.
- 5. To provide training for safety and health risk and prevention.
- 6. To keep the records of inspections, accidents and meeting minute.
- 7. Adequate budgetary provisions have been made by proponent. The management for execution of environmental management plans should be framed. The detailed capital and recurring (per annum) budget should be earmarked for pollution control/monitoring equipment; operation and maintenance of pollution control facilities.

Occupational health and safety management program is implemented to promote the health conditions, physical conditions, mental conditions and social well beings of the employees and to prevent from the risk of workplace hazard and incidents.

#### **Infectious Disease Control**

- Do regular cleaning of toilets and canteen area and office area.
- Cover waste bins to avoid breeding of flies and other insects
- Make sure there will be no water ponding within premise to avoid breeding of mosquitos.
- For Covid-19 infectious disease; educate the employees for awareness of sensitization, self-hygiene and precaution practices such as safe social distancing, wearing masks and washing hands, etc.

#### Socio-Economic Management Plan

Company shall aside any percentage of profit as CSR fund.

- Proponent shall use its CSR fund for upgrading of health care and education of the local community.
- Local employment policy should be adopted for local labour recruitment.
- Minimize the impacts of local community by adherence to EMP.
- Increase the interaction between factory workforce and local people by arranging public meetings and fun meetings at appropriate time.
- Facilitate the access to get opportunities for local contractors for providing local business development

#### **Emergency Response & Disaster Management Plan**

Emergency response & disaster management plan is required to avoid panic and to tackle the situation effectively during emergency time if occurred. The plan covers emergency response activities that shall be carried out in the event of emergency time.

The emergency response plan (ERP) is included are describe the following;

- The emergency response team structure
- The roles and responsibilities of command staff and support staffs
- Resources such as personnel & equipment that can be utilized during emergency time.
- Checklist of ERP activities.

#### Manufacturing and Distribution of Various Types of Jellies

#### **Emergency Response Plan for Earthquake**

- Turn of the gas and electricity. Ware shoes. Carry flashlight.
- Evacuate the employees as there are risks of falling objects and building collapsing.
- Identify the safe places indoor and outdoor.
- For indoor search the safe spots such as under sturdy desk or table. Stay away from glass windows, mirrors and heavy cabinets.
- For outdoor go away from the buildings, trees, telephone, electrical lines and overpasses.
- Follow the drop, cover and hold on procedures to be safe during earthquakes.
- Drop to the ground, cover under sturdy objects like table or furniture and hold on to it until the shaking is stopped.
- Stay as safe as possible during earthquake and make minimum movements until the shaking is finished.
- Use emergency whistle if trapped.

#### **Flood Control Plan**

Bago River can have potential on flood and the following factors should aware to all of the workers from safety point of view during flood.

- Do not walk through flowing water.
- Use a pole to test the depth of standing water before you proceed.
- Do not drive through a flooded area. Two feet of water will carry away most automobile.
- Stay away from power lines and electrical wires.
- Turn off your all electricity if your building is flooded.
- Watch out for hiding animals.
- Look before you step. Mud can be very slippery to walk on.
- Be alert for gas leaks. Leave the area immediately if you smell gas fumes.

#### **Fire Prevention Plan**

Fires have been a persistent problem in most industry. Significant capital expenditure may be required to install adequate fire prevention and protection measures. Uncontrolled fires at the factory may not only destroy the business but also cause significant damage to neighboring properties and habitats.

The following standards are required for all factories:

- At least one alternative exit with a stair connecting all the floors of the factory building.
- No exit can be locked or fastened during working hours.
- An effective and clearly audible means to warn of fires.
- Cleared passages providing access to each escape route.
- A fire drill at least once a year in each factory where more than fifty workers are employed.
- Firefighting Training and Protection Measures

Manufacturing and Distribution of Various Types of Jellies

- "NO SMOKING" signs shall be conspicuously displayed at strategic locations in the factory.
- Whenever a fire or any accident occurs, notify the nearest fire station.

#### **Using Fire Extinguishers**

- Ensure that you use the correct extinguisher
- Always keep an emergency exit behind you. (Away from the fire)
- Stay low to avoid the effects of smoke/heat.
- Direct extinguisher stream at base of flames.
- Move stream in a side to side, sweeping motion.
- If the fire gets to the point where you can no longer able to control it, retreat and close the doors. (Do not lock)

#### **Using Fire Hose Reels**

- Turn on the stop valve
- Run out the length of hose
- Turn on the water nozzle and direct stream at the base of the fire.
- Ensure you leave a direct egress path between you and the exit door/egress route

#### **Environmental Monitoring Plan**

Monitoring is an essential and an integral part of the implementation of the proposed environmental mitigation measures. Environmental monitoring generates useful information and improves the quality of implementation of mitigation measures.

Monitoring involves the observation, review and assessment of onsite activities to ensure adherence to regulatory standards and the recommendations made to reduce negative impacts. The plan must be comprehensive and address relevant issues, with a reporting component that will be made available to the regulatory agencies based on a mutually agreed frequency. It is recommended that a minimum bi-annually monitoring report be submitted to the authorities.

Environmental Issue	Item	Location	Frequency	Respon- sibility
	PM <sub>10</sub> , PM <sub>2.5</sub> , O <sub>2</sub> , CO, CO <sub>2</sub> , NH <sub>3</sub> , NO <sub>2</sub> , SO <sub>2</sub> , O <sub>3</sub> , VOC	Ambient air within the factory premises	Annual	
	PM <sub>10</sub> , PM <sub>2.5</sub> , VOC, O <sub>2</sub> , CO, CO <sub>2</sub> , NO <sub>2</sub> , SO <sub>2</sub>	Boiler and diesel generator Bi-annual		Designated
Air Quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> , NO <sub>x</sub>	Workplace (Mixing room)	Bi-annual	EMT member
	Establish a routine maintenance, inspect - ion program for burners	Boiler	Daily	
Non-hazardous	Set quantified waste	Workplace,	As	EMT,
Solid Waste	reduction and disposal	Factory Premise	necessary	Operation

Table (16) Environmental Monitoring Plan

## Manufacturing and Distribution of Various Types of Jellies

Environmental Issue	Item	Location	Frequency	Respon- sibility
	targets (in volume, weight or costs)			supervisor
	Separate bins for different kinds of waste	Workplace, Factory Premise	Daily	Operation supervisor, Workers
Hazardous Solid	Provide training to employees on how to dispose of hazardous material	Workplace, Factory Premise	For each new staff	Manager
Waste	Ensure MSDS for hazardous products are up-to-date and accessible at any time.	Workplace, Factory Premise	Monthly	Designated EMT member
Water Quality	Aluminum, Chloride, copper, cyanide, Manganese, pH, Sulfate,	Tube well 3 time/ yr		Designated EMT
	Total Alkalinity, TDS, Hardness, Total Iron, Turbidity	Drinking water		member
Waste water	BOD <sub>5</sub> , COD, Oil & Grease, pH, Total	Processing wastewater	3 time/ yr	Operation supervisor,
Quality	Nitrogen, Total Phosphorous, TSS,	WWTP influent	3 time/ yr	Designated EMT
	Coliform, temperature	WWTP effluent	3 time/ yr	member
Noise Quality				
Ambient Noise	Noise level in decibel	Factory Premise	1 time/ yr	Designated EMT
Workplace		Maintain all equipment so it's running efficiently.	Weekly/ necessary	Factory manager
Noise	Noise level in decibel	Employees working in areas with high noise levels	Daily	Factory manager
Workelson		Mixing room	Bi-annual	Designated
Workplace Noise	Noise level in decibel	generator and Boiler	Bi-annual	Designated EMT
Emergency Response Equipment	<ul> <li>Firefighting equipment (extinguisher, fire hydrants, firehose</li> </ul>	Factory Premise, Workplace,DailyFinGenerator Room, Fuel Storage AreaFin		Fire brigade

Green Myanmar Environmental Services Co., Ltd.

## Manufacturing and Distribution of Various Types of Jellies

Environmental Issue	Item	Location	Frequency	Respon- sibility
	• Fire-drill testing	Factory Premise	Monthly	Fire brigade
	<ul> <li>Servicing firefighting equipment</li> </ul>		Quarterly	Fire brigade
	<ul> <li>Reviewing records of accidents which is recorded on &amp; around the entire facility</li> </ul>	-	Quarterly	Fire brigade
	OHS training	Factory Premise	Biannual	OHS manager
	• the sanitary facilities that should be kept clean and well lit.	Factory Premise	Weekly	General manager, nurses and OHS team
	<ul> <li>Ensure proper solid waste disposal and facilities.</li> </ul>	Factory Premise	Daily	OHS team
Occupational Health and Safety	<ul> <li>Provide First Aid kits on the site. Ensure nurse(s) is stand-by in clinic. Educate workers on environmental management.</li> </ul>	Factory Premise	Daily	General manager and OHS team
	<ul> <li>Provision of all necessary PPEs.</li> </ul>	Factory Premise	As necessary	General
	<ul> <li>Workers should be trained on OSH and first-aid administration.</li> </ul>	Factory Premise	As necessary	manager and OHS team
		I	1	
Energy	<ul> <li>Record diesels consumption</li> </ul>	Generator, and Compressors	Monthly	General manager and
Consumption	<ul> <li>Record Electricity usage</li> </ul>	Electric Meter	Monthly	OHS team
Resources Usage	<ul> <li>The unused equipment must be switched-off</li> </ul>	Power Distribution Panel	Daily	In-charge in each section
Usage	• All water taps shut when not in used	All Water Taps	Daily	For all employees

Manufacturing and Distribution of Various Types of Jellies

#### **Budgetary Provisions for EMP**

Adequate budgetary provisions have been made by proponent. The management for execution of environmental management plans should be framed. The detailed capital and recurring (per annum) budget should be earmarked for pollution control/monitoring equipment, operation and maintenance of pollution control facilities.

The project is going in operation phase when this EMP report was prepared. Thus, estimated EMP budget was more emphasized for operation phase. The Project will carry out impact monitoring during operation phase. The following table shows the estimated expenditures for the implementation of Environmental Management Plan for operation phase twice a year. It can change according to the situation. The project proponent will carry out impact monitoring during operation. The following table shows the costs estimated for Environmental Monitoring for the Thai Faster Products and M.K Company Limited.

Sr. No	Monitoring	Locations	(a) no. of location	(b) frequency	(c) Rate (Kyats)	(a x b x c) Total Amount (Kyats)
Ope	eration Phase					
1.	Air Quality monitoring	Stack emission of boiler and Generator	2	2 times /year	300,000	1,200,000
		Workplace Air Quality	1	2 times /year	200,000	400,000
		Ambient Air Quality	1	1 time /year	1,000,000	1,000,000
					Sub-total	2,600,000
2.	Watan	Tube well water	1		150.000	450.000
Ζ.	Water Quality	Tube-well water Boiler Section	1		150,000	450,000
		Drainage	1	3 times /	150,000	450,000
		Process wastewater	1	year	150,000	450,000
		WWTP (influent)	1	5	150,000	450,000
		WWTP (effluent)	1		150,000	450,000
						2,250,000
3.	Noise Level	Work Place	3	2 times / year	50,000	300,000
		Ambient Noise	1	1 time / year	50,000	50,000
	Sub-total 350,00					350,000
4.						500,000
	Air Pollution Control				Lump sum	500,000
					700,000	
	Green Plan Lump sum 200,000					

Table (17) Estimated Costs for Environmental Monitoring

Green Myanmar Environmental Services Co., Ltd.

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Sr. No.	Monitoring	Locations	(a) no. of location	(b) frequency	(c) Rate (Kyats)	(a x b x c) Total Amount (Kyats)
Sign board on safety			Lump sum	1,000,000		
	Emergency safety measures				Lump sum	100,000
	Fire safety measures				Lump sum	500,000
	Personal Protective Equipment			Lump sum	500,000	
	Training Lump sum			Lump sum	500,000	
Sub Total				4,500,000		
	Total = Sub-total+ Sub-total+ Sub-total + Sub -total 97,00,000					

## PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

Public consultations on environmental management programs are designed to provide a real understanding of industry issues and the aim is to make the public aware of the environmental impact of industrial operations and the increase in job opportunities caused by industry. By participating in the consultation process with anyone affected by the proposed project, the business community will be able to resolve any issues that may arise in advance.

## METHODOLOGY AND APPROACH

Green Myanmar Environmental Services Co., Ltd. has taken the following two steps in gathering public opinion and information about the factory.

- (a) Meeting with factory staff and obtaining workplace advice
- (b) Meeting with the relevant government organizations and the vicinity of the factory

## **MEETING WITH THE FACTORY'S EMPLOYEES**

The manufacturing of various of Jellies of the Thai Faster Products and M.K Company Limited for reporting of the Environmental Management Plan (EMP), there were met with the factory staff about of the Drinking water system, cleaning system, sanitation system, Noise, Particles, Smell Smoke, Adequate lighting and Ventilation system, in the workplace and about the social situation in the workplace. A total number of (21) suggestions letters were collected from employees. We also received (21) signed employees at attendance lists that were shown in Appendix (19). Their comments and suggestions were attached as Appendix (20).

Method	- Meeting
Date	- 29.3.2018
Participants	- 21 Factory's staff
Venue	- Meeting room

#### Manufacturing and Distribution of Various Types of Jellies

Table (18) Excerpts from suggestion of the factory staff

No	Suggestions/ Comments					
• Sı	aggestion on occupational health and safety					
• Al	bout the personal protective equipment, all persons mentioned that they were provided.					
• Al	bout the drinking water, all persons mentioned that they were provided with good drinking water.					
• Al	bout the sanitation system, all persons recommended it is good and enough.					
	bout the cleaning system, all staff members who attended the meeting stated that it was convenient have soap / hand sanitizer for washing.					
• Al	bout the light intensity of workplace, all persons recommend.					
• Al	bout the ventilation system in workplace, all persons recommend.					
Sugg	gestion on working conditions in the workplace					
• Al	bout the noise in workplace, all persons mentioned there was no noise at the workplace.					
• Al	• About the odor, all persons mentioned there have no odor at the workplace.					
• Al	• About the particles/dust in workplace, all persons mentioned the was no particle at the workplace.					
Sugg	Suggestion on the social relation in workplace					
• 1	out the social relation in workplace, all persons mentioned it was convenient with upper level					

• About the social relation in workplace, all persons mentioned it was convenient with upper level.

#### Meeting with the relevant government organizations and the vicinity of the factory

There are two ways of discussion, one way is participants can involve themselves in public consultation meeting and another way is by writing suggestions on distributed suggestion form.

Meeting attendees were encouraged to ask questions and give comments during and after the presentation. Comment forms were available at each meeting for attendees to write comments at the time of the meeting.

On August 5<sup>th</sup> 2018 at KaSin Village Tract Administrative Office, Hlaing Thar Yar Township, the public meeting for disseminating project information to general public including stakeholder and requesting their comments and (20) suggestions letter well collect from the (30) participants from local community attended the public meeting and participated in open discussion. Attendee lists were shown to Appendix (17). Their comments and suggestions were attached as Appendix (18).

Method	- Meeting					
Date	- 5.8.2018					
Participants	- local community, administrative organization, responsible person of project and Third party organization					
Venue	- KaSin Village Tract Administrative Office, Hlaing Thar Yar Township.					

The main points of discussion, questions and answers were mentioned in the following table.

No	Participants	Suggestions and Discussions		
1	U Myo Thint			
2	U Than Zaw Oo	• Ensure to keep for Air, Water and Soil of the environment		
3	Ma Aye Aye Htet			
4	Daw Thuzar Nyunt	• benefits and disadvantages of the impact to the Environment		
		supporting for allowance of the employees		
5	Daw Khin Ohn	• Ensure to keep the environment not to effect due to the		
	Myint	manufacturing of various types of Jellies		
6	U Tate Sein	• Follow to National guideline, not to effect health and social of the surrounding of the factory		
7	U Sein Thaung			
8	U Soe Myint	• Ensure to keep for surrounding of the factory		
9	U Mya Thwin			
10	Myo Thu	Thank you so much for performing of a good practice		
11	Ma Myint Myint Aye	• I want to mitigate food dye in the jellies for health of the children		
12	U Kyi Soe	To keep cleaning of the factory's environment		
13	Daw Aye Thandar	I got it, the benefits and disadvantages of the impact to the		
		Environment due to dispose of wastewater from the factory		
14	Daw Wai Wai Khin	• I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers		
15	Daw Zar Zar Htet	• Ensure a safe and healthy workplace for employees		
16	Daw Aye Mi	• Ensure to keep the production of jellies and not polluting the environment		
17	Ma Khin Win Maw	• I want to mitigate food dye in the jellies for health of the children		
		<ul> <li>Process of factory and area is very clean</li> </ul>		
		<ul> <li>I want to manufacture of jellies, not to cause disease but to get</li> </ul>		
		energy		
18	Ma Thida	To keep the environment clean		
		• Not to cause for the health of the employees of the factory		
		• I advise to discuss manufacturing of jellies for the health of the		
		children because the most of the children are customers		
19	Daw Su Wai	• To keep the environment clean		
		• Must be cleaned packaging of the jellies		
		• Don't be use chemical		
		• Not to pollute for Air, Water, Soil and Noise of the environment		
		• I advise to manufacture of Jellies, not to effect on the health of		
		the children		
		Must be cleaned surrounding of the factory		
20	Daw Swe Swe Oo	Don't be use chemical dye		
		• Must be cleaned packaging of the jellies		
		• I advise to generate for Jellies, not to effect on the health of the		
		children but to get energy for them		

#### Table (19) Comments of Public Consultation Meeting

Manufacturing and Distribution of Various Types of Jellies

#### **Response for Comments and Suggestions**

Green Myanmar Environmental Services (GMES) Co., Ltd requested client, Thai Faster Products & M.K Co., Ltd to commitments on the suggestions of public consultation meeting by email at 17.8.2018. The client replied at 24.8.2018 by email. The GMES requesting letter and the proponent's commitment letters are attached as Appendix (21) and (22) respectively.

#### Conclusion

This Initial Environment Examination (IEE) study was carried out based on the primary data, secondary data, information provided by the project proponent, existing studies and reports relevant to the project, baseline environmental monitoring and stakeholder engagement. Assessments of potential environmental impacts due to implementation of the project activities during operational phase is conducted qualitatively and quantitatively where possible. This IEE report provides a full picture of all potential environmental impacts associated with the proposed project, and made recommendations for prevention and mitigation measures for negative impacts and enhancement for positive impacts.

#### Findings

#### **Air Pollution**

Particulate Matter (PM10 & PM2.5) contents of ambient air are higher than National Environmental Quality (Emission) Guidelines. Sulfur Dioxide level of ambient air is also slightly higher than guidelines. Other parameters are within the permissible limits of the guidelines. The Particulate Matter (PM10 & PM2.5) contents of workplace air analysis are within the guideline values and there is no issue.

#### Water Pollution

It has been noticed that turbidities of waste water and tube well water are slightly higher than the guideline values. The drinking water quality is within the WHO guideline limits. The other parameters of all water sources are within the guideline values and there are no issues.

#### **Noise Pollution**

The ambient noise level is within the permissible level. Noise level monitoring in several workplaces are conducted and in most of the workplaces the noise levels are within the allowable limits. Based on the evaluation of the significance of impacts qualitatively, these are the summary of findings.

#### **Solid Waste Generation**

There is found dispose of the solid waste systematically accord to the guidelines and no critical issue of solid waste disposal.

For operational phase, air pollution, water pollution, soil pollution, socio-economic aspects and health and safety issues have moderate risks and fire hazard is major risk. But after implementation of mitigation measures, the residual impacts are low risks and it is acceptable. For decommissioning phase, air pollution, water pollution, socio-economic impacts, health and safety issues are moderate risks and noise pollution is major risk. But

Manufacturing and Distribution of Various Types of Jellies

after implementing the mitigation measures, the residual impacts will likely to be low risks and it would be acceptable.

#### 9.3 Recommendations

- Based on potential impacts figured out, an Environmental Management Plan (EMP) is prepared and presented in this report, as a solution for environmental, social, health and safety issues for operational phase and decommissioning phase. EMP is prepared in compliance with the existing environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar. Many of the impacts are localized. As the project, fire hazard is a critical concern. The other concerns are water resource depletion and electricity consumption. The recommendations are
- To reduce the risk of fire, Fire Prevention Plan (as in EMP) need to be implemented and adhered to it.
- To minimize the water consumption, it is recommended that to install water meter and water saving equipment.
- To reduce electricity consumption, it is recommended that to use natural light as much as possible in the daytime, energy saving lamps, auto pump, and variable speed drive motor and inverter type air conditioners.
- To minimize Sulfur Dioxide emission level, low Sulfur content diesel should be used for generators.
- To reduce PM2.5 and PM10 emission within premises, grow more plants. It is also advised that to maintain good housekeeping. Spray water to suppress the dust generation.
- To reduce turbidity of tube well water, let the particles settle first for sedimentation in the water storage tank before using.
- To reduce turbidity of waste water, put the sedimentation pond and discharge the waste water only after treating to the waste water treatment plant.
- To reduce the risks of incidents, preventive measures for health, safety and fire must be followed by all employees.
- The proponent should follow environmental policy, laws, rules and instructions of Union of Myanmar.
- Implement EMP once it is approved by relevant authorities.
- Keep all the records of EMP for environmental audit.
- Review the annual environmental audit report and take necessary actions for any concerns raised.
- To boost the socio economic of the local environment and social welfares of the employees, the effective CSR should be developed and implemented.
- The effective implementation and adherence to EMP might assist for minimizing of the negative environmental and social impacts to acceptable levels.

# အကျဉ်းချုပ်အစီရင်ခံစာ

၂၀၁၈ ခုနှစ်၊ မတ်လတွင် ထိုင်းဖက်စ်ပရောဒက်စ်အင်န်အမ်ကေ ကုမ္ပဏီလိမိတက်တို့မှ ဂျယ်လီ စက်ရုံနှင့်ပတ်သက်၍ မြန်မာရင်းနှီးမြှပ်နှံမှုကော်မရှင်သို့ တင်ပြရမည်ဖြစ်သော ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီ အရင်ခံစာတင်သွင်းရာတွင် အထောက်အကူပြုရန် စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာဝန်ဆောင်မှု ကုမ္ပဏီ လီမိတက် (GMES) သို့ တောင်းဆိုလာပါသည်။

ထိုင်းဖက်စ်ပရောဒက်စ်အင်န်အမ်ကေကုမ္ပကီလိမိတက်သည် ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာ မြို့နယ်၊ ရွှေလင်ပန်းစက်မှုဇုံ၊ ကနောင်မင်းသားကြီးလမ်း၊ မြေကွက်အမှတ် ၄၆ဂု/က တွင် တည်ရှိပါသည်။ ဤ ကုမ္ပကီသည် မြန်မာကုမ္ပကီများအက်ဥပဒေပါ စည်းကမ်းချက်များနှင့်အညီ ဖွဲ့စည်းထားသော ဖက်စပ် ကုမ္ပကီတစ်ခုဖြစ်ပြီး၊ ရင်းနှီးမြှပ်နှံမှု တန်ဖိုးစုစုပေါင်း အမေရိကန်ဒေါ် လာ ၂,၀၀၀,၀၀၀ ဖြစ်ပါသည်။

Thai Faster Products and M.K ကုမ္ပကီလီမိတက်သည် ဖက်စပ်ရင်းနှီးမြှုပ်နှံမှုကုမ္ပကီတစ်ခု ဖြစ်ပြီး Thai Faster Product ကုမ္ပကီလီမိတက်မှ (၆၀ %)၊ Mantakanok ကုမ္ပကီလီမိတက်မှ (၃၀%) နှင့် M.K ကုမ္ပကီလီမိတက်မှ (၁၀%) တို့ဖြင့် ဖွဲ့စည်းထားပါသည်။

Thai Faster Product ကုမ္ပကီလီမိတက်သည် ထိုင်းနိုင်ငံမှ ကုမ္ပကီအမှတ် ပဂု၄၅၅၅၅၀၀၀၄၇၉ ရှိသော ပုဂ္ဂလိကပိုင်ကုမ္ပကီတစ်ခုဖြစ်ပြီး ထိုင်းနိုင်ငံ၊ Samutsakorn ပြည်နယ်၊ Kratumban ခရိုင်၊ Aom-Noy ခရိုင်ခွဲ၊ Moo.7၊ ၉၉/၉၉ တွင်တည်ရှိပါသည်။

Mantakanok ကုမ္ပဏီလီမိတက်သည် ထိုင်းနိုင်ငံမှ ကုမ္ပဏီအမှတ် ပရဂုရရ၄၁၀၀၀၀၁၃၆ ရှိသော ပုဂ္ဂလိကပိုင်ကုမ္ပဏီတစ်ခုဖြစ်ပြီး ထိုင်းနိုင်ငံ၊ Bangkolam ခရိုင်၊ Bangklo ခရိုင်ခွဲ၊ ဘန်ကောက်၊ Charoenrad လမ်း၊ အမှတ် ၁၀၆/၂ တွင်တည်ရှိပါသည်။

M.K ကုမ္ပဏီလီမိတက်သည် မြန်မာနိုင်ငံမှ ကုမ္ပဏီမှတ်ပုံတင်အမှတ် ၆၄၄ ရှိသော ပုဂ္ဂလိကပိုင် ကုမ္ပဏီတစ်ခုဖြစ်ပြီး မြန်မာနိုင်ငံ၊ ရန်ကုန်တိုင်းဒေသကြီး၊ စမ်းချောင်းမြို့နယ်၊ ပြည်လမ်း၊ အမှတ် ၃၃၃ တွင် တည်ရှိပါသည်။

ကုမွကီ၏ရည်ရွယ်ချက်မှာလုပ်ငန်းနှင့် ၄င်း၏ ထောက်ပံ့ဖြန့်ဖြူးရေးလမ်းကြောင်းများ၊ ပိုမို တိုးတက် ကောင်းမွန်သော ကုန်ကြမ်းအသုံးပြုခြင်းနည်းလမ်းများကို အခြေခံ၍ နိုင်ငံစီးပွားရေး၊ သဘာဝ ပတ်ဝန်းကျင် နှင့် လူမှုရေးဆိုင်ရာ ရေရှည်ဖွံ့ဖြိုးတိုတက်မှုများကိုဖော်ဆောင်ရန်ဖြစ်ပြီး၊ အပြန်အလှန်အားဖြင့် ကုမ္ပကီ၏ စွမ်းရည်ပြည့်ဝစွာဆောင်ရွက်နိုင်မှု နှင့် အကျိုးအမြတ်များ တိုးတက်စေရန် ရည်ရွယ်ပါသည်။

စီမံကိန်းအမည်	ဂျယ်လီမျိုးစုံ ထုတ်ဂ	ဂျယ်လီမျိုးစုံ ထုတ်လုပ်ဖြန့်ဖြူးရေး				
ကုမ္ပဏီအမည်	ထိုင်းဖက်စ်ပရောဒဂ	ထိုင်းဖက်စ်ပရောဒက်စ်အင်န်အမ်ကေကုမ္ပဏီလိမိတက်				
ကုမ္ပဏီမှတ်ပုံတင်အမှတ်	အမှတ် ၈၅၅ FC, ၂၀၁၃-၂၀၁၄					
စီမံကိန်းလိပ်စာ	ရန်ကုန်တိုင်း၊ လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ပန်းစက်မှုဇုံ၊					
ကနောင်မင်းသားကြီးလမ်း၊ မြေကွက်အမှတ် ၄၆၇/က						
မြေအမျိုးအစား	စက်မှုဇုံ					

စီမံကိန်း၏အဓိကအကြောင်းအရာများမှာ အောက်ဖော်ပြပါအတိုင်းဖြစ်ပါသည်။

## Manufacturing and Distribution of Various Types of Jellies

မက္ကလက္လက္လင္ရန	(1)				
မြေအကျယ်အဝန်း	၂.၀၃၆ ဧက (၈၇၆၉၄.၂၁၄ စတုရန်းပေ) ၈၄ ၈၇ (၈၇ နှင့်သင်္သောက်မှ နှင့်ကြိန်ပြုသွန်နိုင်ငံ				
ရင်းနှီးမြှပ်နှံမှုကာလ	နစ် ၅၀ (၁၀ နှစ်သက်တမ်းတိုး နှစ်ကြိမ်ပြုလုပ်နိုင်)				
မြေငှားရမ်းကာလ	စဦး (၅)နှစ် (သတ်မှတ် နှစ် ဂု၊ ကာလထိ သက်တမ်းတိုးနိုင်)				
မြေငှားရမ်းသူ	ဦးပြည့်ဖြိုး				
စတင်သည့်အချိန်	5.2.2014				
စက်စမ်းသပ်လည်ပတ်ချိန်	2.1.2015				
စီးပွားဖြစ်လည်ပတ်ချိန်	4.1.2017				
အနီးပတ်ဝန်းကျင်	လက်ျာဘက် ။ ဝက်မစွတ် ဝန်ထောက်လမ်း				
	လက်ဝဲဘက် ။ မြန်မာရိုးဟို အထည်စက်ရုံ				
အနီးဆုံးလူနေအိမ်ရြေ	အလယ်ကျေးရွာ				
အနီးဆုံးရေအရင်းမြစ်	လှိုင်မြစ်				
မြေမျက်နာသွင်ပြင်	မြေပြန့်၊ နန်းဆန်သောမြေ				
ဆက်သွယ်ရမည့်သူ	ဒေါ်ဝင်းစန္ဒာ				
ရာထူး	စာရင်းကိုင်				
ဖုန်းနံပါတ်	იცივემცვიეიი				
	వి:లంగు: <u>thaifaster.mm@gmail.com</u>				
ရင်းနီးမြှပ်နှံမှု	အမေရိကန်ဒေါ် လာ ၂,၀၀၀,၀၀၀				
ရင်းနှီးမြှပ်နံမှုပုံစံ	ထိုင်းဖတ်စတာကုန်ထုတ်လုပ်ငန်းကုမ္ပကီလိမိတက် (ထိုင်း) ၆၀%				
	မန်တကနော့ကုမ္ပဏီလိမိတက် (ထိုင်း) ၃၀%				
	M.K ကုမ္ပဏီ လိမိတက် ၁၀%				
ရေအရင်းအမြစ်	အနက် ပေ ၁၀၀ ရှိ သော				
	၂ လက်မ အဝီစိတွင်း ၂ တွင်းမှ ထုတ်ယူ သုံးစွဲပါသည်။				
ရေသုံးစွဲမှု	တစ်ရက်လျှင် ဂါလံ (၁၂,၀၀၀)				
စွမ်းအင်အရင်းအမြစ်	လျှပ်စစ်ဓာတ်အားလိုင်း (နိုင်ငံတော်ပင်မဓါတ်အားလိုင်း)				
နှစ်စဉ်လျှပ်စစ်သုံးစွဲမှု	၉၁၂,၀၀၀ ကီဂါဝပ်နာရီ (တစ်နှစ်)				
နစ်စဉ်လောင်စာဆီသုံးစွဲမှု	ဒီဇယ် ၁၅,၈၅၀ ဂါလံ (တစ်နှစ်)				
	စပါးခွံ ဂ၄၂.၄ဂ တန် (တစ်နှစ်)				
ကုန်ချော	ဂျယ်လီ အမျိုးမျိုး				
	ပြည်တွင်းရောင်းချမှု ၉၀%				
	ပြည်ပတင်ပို့မှု ၁၀%				
ခန့်မှန်းလုပ်သားဦးဖရ	ပြည်တွင်းဝန်ထမ်း - ၁၈၈				
(ပထမနစ်)	ပြည်ပဝန်ထမ်း - ၈				

## Manufacturing and Distribution of Various Types of Jellies

စက်ရုံလည်ပတ်ချိန်	အလုပ်ချိန်		
	တနင်္လာ မှ သောကြာ	:	၀၇:၀၀ မှ ၁၆:၀၀
	(အချိန်ပို) စနေ	:	၀၇:၀၀ မှ ၁၁:၀၀
	တစ်လ လုပ်ရက်	:	၂၆ ရက်
	တစ်ပတ် လုပ်ရက်	:	၆ ရက် (တနင်္လာ မှ စနေ)
	အဆိုင်း	:	၁ ဆိုင်း

# ဇယား - ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အကောင်ထည်ဖော်ဆောင်ရွက်သည့်အဖွဲ

r			
စဉ်	လုပ်ငန်းတာဝန်	သတ်မှတ်တာဝန်နှင့်လုပ်ပိုင်ခွင့်	အမည်၊ ရာထူး၊အဖွဲဲအစည်း နှင့် ကြားကာလ မှတ်ပုံတင်အမှတ်
С	ပတ်ဝန်းကျင်စီမံ	• ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ပုံစံထုတ်	Engr. ဦးကျော်စိုးဝင်း
	ခန့်ခွဲမှုဆောင်ရွက်ရေး	පී <b>ඳි</b> රි: ရေးဆွဲခြင်း	အုပ်ချုပ်မှုဒါရိုက်တာ
	အဖွဲ့ခေါင်းဆောင်	<ul> <li>နည်းပညာပိုင်းဆိုင်ရာအစည်းများနှင့်တွေ့ဆုံ</li> </ul>	ိမ်းလန်းမြန်မာပတ်ဝန်းကျင်
		ဆွေးနွေး ရှင်းလင်းခြင်း	ဆိုင်ရာ ဝန်ဆောင်မူလုပ်ငန်း
		• ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်လုပ်ငန်း	ကုမ္ပဏီလီမိတက်
		စောင့်ကြပ် ကြည့်ရှုခြင်း	(Professional Engineer)
		• အရည်အသွေးကိုစီစစ်ခြင်း	
		• ကိန်းဂဏာန်းအချက်အလက်များ စုစည်းခြင်း	No. 0019
		နှင့် ခွဲခြားဆန်းစစ်ခြင်း	
J	လေအရည်အသွေး	• လေထုအရည်အသွေးတိုင်းတာရန်	Engr. ဦးစိန်သောင်းဦး
	စီမံခန့်ခွဲမှုအကြံပေး	အကြံပေးခြင်း	5සීට
		• နည်းပညာပိုင်းဆိုင်ရာများအကြံပေးခြင်း	စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်
		• လေထုညစ်ညမ်းမှုဆန်းစစ်ခြင်းနှင့် ကုစားမှု	ဆိုင်ရာ ဝန်ဆောင်မူလုပ်ငန်း
		နည်းလမ်းများအကြံပေးခြင်း	ကုမ္ပဏီလီမိတက်
		• လေထုအရည်တိုင်းတာရရှိမှုရလဒ်အပေါ်	(Professional Engineer)
		အခြေခံကာတွက်ချက်ခြင်းနှင့်ဆန်းစစ်ခြင်း	
		အား အကြံပေးခြင်း	No. 0023
		<ul> <li>အစီရင်ခံစာပြင်ဆင်မှုတွင် အကြံပေးခြင်း</li> </ul>	
9	ပတ်ဝန်းကျင်ဆိုင်ရာ	• ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုပုံစံထုတ်ရန်	Engr. ဒေါ်ခင်ဆွေအေး
	အကြံပေးခြင်း	အကြံပေးးခြင်း	အကြံပေး၊
		• လူပုဂ္ဂုလ်များ၏သတ်မှတ်တာဝန်နှင့်လုပ်ပိုင်	စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်
		ခွင့်များ ဖွံဖြိုးတိုးတက်စေရန် အကြံပေးခြင်း	ဆိုင်ရာ ဝန်ဆောင်မှုလုပ်ငန်း
		• ပတ်ဝန်းကျင်အခြေခံအချက်အလက်များကို	ကုမ္ပကီလီမိတက်
		အကြံပေးခြင်း	(Professional Engineer)
		• ကွင်းဆင်းတိုင်းတာမှုများအတွက် အကြံ	ကထိက(ငြိမ်း)
		පොම්රිස	ဓါတုအင်ဂျင်နီယာဌာန၊
		• ရရှိလာသည့်ကိန်းဂဏာန်းအချက်အလက်	ရန်ကုန်စက်မှုတက္ကသိုလ်
		များကိုအကြံပေးခြင်း	
		• ပြီးပြည့်စုံသော အစီရင်ခံစာ ပေးသားပြုစု	No. 0021
		နိုင်ရန်အကြံပေးခြင်း	

## Manufacturing and Distribution of Various Types of Jellies

		1		
		•	Facilitate technical analysis	
		•	Streamline the Environmental	
			Management Plan	
9	ပတ်ဝန်းကျင်ဆိုင်ရာ	•	ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များ	Engr. ဒေါက်တာမောင်မောင်ဝင်း
	အခြေခံ		ကောက်ယူရန် နည်းလမ်း၊ ပုံစံ၊	Dr. Maung Maung Win,
	အရက်အလက်များ		လုပ်ဆောင်မှုများကို အကြံပေးခြင်း	ပါမောက္ခ (ငြိမ်း)
	အကြံပေးခြင်း	•	ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များ	ဓါတုအင်ဂျင်နီယာဌာန၊
			ကောက်ယူရန်သင်တန်းပေးခြင်း	ရန်ကုန်စက်မှုတက္ကသိုလ်
		•	စက်မှုလုပ်ငန်းစဉ်၊ ထိခိုက်မှုများ၊ ဒီဇိုင်းများ	ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှု
			နှင့် ညစ်ညမ်းမှုထိန်းချုပ်ခြင်းများအတွက်	Thailand and USA
			ဆန်းစစ်ခြင်းနှင့်အစီရင်ခံစာပြင်ဆင်ခြင်း	
		•	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုဆိုင်ရာအတွက်	No.0027
			စေင့်ကြည့်ရမည့်အချက်များအကြံပေးခြင်း	10.0027
	ယက်ခန့်ကျင်တိုင်တ	•	ပတ်ဝန်းကျင်ဆိုင်ရာ လေထုနင့်ရေအရည်	ດປັດໂດດດາເຕເຕີ້ວແນ
୭	ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေးစီမံခန့်	•	ဒလော့လျှင်ဆိုင်ရာ လေထုနှင့်ရေအရည် အသွေးကောက်ယူရာတွင်လမ်းညွှန်	ဒေါ် ခင်ရွှေဌေး(အကြံပေး) ကထိက(ငြိမ်း)
	•			
	ခွဲမှုအကြံပေး		အကြံပေးခြင်း	ဓါတုအင်ဂျင်နီယာဌာန၊
		•	နမူနာကောက်ယူရာတွင်အကြံပေးခြင်း	ရန်ကုန်စက်မှုတက္ကသိုလ်
		•	နမူနာကောက်ယူပစ္စည်းများကို	ပတ်ဝန်းကျင်အင်ဂျင်နီယာ
			စစ်ဆေးငြခ်းနှင့်မှတ်တမ်းရေးသွင်းခြင်း	ပညာရပ်ဆိုင်ရာမဟာဘွဲ့
		•	ပတ်ဝန်းကျင်ဆိုင်ရာအခြေခံအချက်အလက်	(စင်္ကာပူ)
			အတွက်အစီရင်ခံစာပြင်ဆင်ခြင်း	No.0022
G	ပတ်ဝန်းကျင်ဆိုင်ရာ	•	ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များ	ဦးခင်အောင်
	ဆန်းစစ်ခြင်း		ကောက်ယူရန် Checklist ပြင်ဆင်ခြင်း	အထွေထွေမန်နေဂျာ
	ကွင်းဆင်းလေ့လာ	•	နည်းပညာဆိုင်ရာဆွေးနွေးခြင်းနှင့်မှတ်တမ်း	စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်
	ရေးခေါင်းဆောင်		ထိန်းသိမ်းခြင်း	ဆိုင်ရာ ဝန်ဆောင်မှုလုပ်ငန်း
		•	ဒေသဆိုင်ရာအချက်အလက်များ	ကုမ္ပဏီလီမိတက်
		•	ဒေသအာကာပိုင်များ၊ အဖွဲ့အစည်းများ၊	
			ဒေသခံများနှင့်ဆွေးဆွေးတိုင်ပင်ခြင်း	No.0025
$\gamma$	ရေနင့်စွန့်ပစ်ရည်	•	ရေနှင့်စွန့်ပစ်ရည်နမူနာကောက်ယူရာတွင်	ဦးမျိုးမြင့်
	ဓါတ်ခွဲစမ်းသပ်ခြင်း		အကြံပေးရြင်း	အကြံပေး၊
	ဆိုင်ရာ အကြံပေး	•	ရေနှင့်စွန့်ပ့စ်ရည်ကိုင်တွယ်ခြင်း၊	စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်
			စမ်းသပ်ခြင်းများတွင် အကြံပေးခြင်း	ဆိုင်ရာ ဝန်ဆောင်မူလုပ်ငန်း
		•	အစီရင်ခံစာရေးသားပြုစုရာတွင်	ကုမ္ပဏီလီမိတက်၊
			း ၊ ပူး၊ ၊ ၀ အကြံပေးရြင်း	စက်ရုံမှူး(ငြိမ်း)၊ အမှတ် (၁)
		•	ြ ဓါတ်ခွဲရလဒ်များအစီဂုင်ခံစာဂေးရာတွင်	စက်မှုဝန်ကြီးဌာန
			အကြံပေးရြင်း	ו ו∟ו נו
		•	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်	No.0026
			အစီရင်ခံစာရေးသားပြုစုခြင်း	
െ	စွန့်ပစ်ရည်စီမံခန့်ခွဲမှု	•	စက်မှုလုပ်ငန်းနှင့်မြူနီစီပယ်စွန့်ပစ်ပစ္စည်း	Engr. ဒေါ်တင်မေစိုး
	အကြံပေး	Ē	တွင်းဆင်းကောက်ယူခြင်းကိုအကြံပေးခြင်း	အကြံပေး၊
			ဓါတ်ခွဲစမ်းသပ်မှုများကို အကြံပေးခြင်း	အကြပေး၊ ပါမောက္ခ (ငြိမ်း)
		•	ကိန်းဂဏာန်းအချက်အလက်များကို စီစဉ်	ဓါတုအင်ဂျင်နီယာဌာန၊

Green Myanmar Environmental Services Co., Ltd.

Thai Faster Products & M.K Co., Ltd.

	[	1		
			ခြင်း၊ တွက်ချက်ခြင်း၊ ကောက်ချက်ချခြင်း၊	မွန္တလေးစက်မှုတက္ကသိုလ်
			ဆန်းစစ်ခြင်းတွင်အကြံပေးခြင်း	(Professional Engineer)
		•	အစီရင်ခံစာရေးသားရာတွင်အကြံပေးခြင်း	No.0028
e	ပတ်ဝန်းကျင်ဆန်းစစ်	•	EMP ရေးဆွဲခြင်းအားအကြံပေးခြင်း	Engr. ဦးမောင်မောင်အေး
	ခြင်းအကြံပေး	•	EMP လေ့လာရေးအဖွဲ့ကိုတာဝန် ခွဲပေးခြင်း	ဆောက်လုပ်ရေးတာဝန်ခံ
		•	အခြေခံအချက်အလက်ကာက်ယူခြင်းအား	(ပတ္တမြားဆောက်လုပ်ရေး
			အကြံပေးခြင်း	လုပ်ကွက်၊ Total E & P
		•	ကွင်းဆင်းလေ့လာခြင်းအား အကြံပေးခြင်း	Myanmar)
၁၀	ကွင်းဆင်းလေ့လာ	•	ပတ်ဝန်းကျင်ဆိုင်ကုအကြောင်းရာ၊	ဦးကြည်ဟန်ဘို
	ဆောင်ရွက်သည့်		လေ့လာစစ်ဆေးမည့်အချက်အလက်	အရည်အသွေးစီစစ်အင်ဂျင်နီယာ
	ကြီးကြပ်ခေါင်းဆောင်		<b>ပြင်ဆင်</b> ခြင်း	
		•	အကြိုကွင်းဆင်းလေ့လာစစ်ဆေးငြခ်း	စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်
		•	ကွင်းဆင်းလေ့လာခြင်းကို ကြီးကြပ်ခြင်း	ဆိုင်ရာ ဝန်ဆောင်မှုလုပ်ငန်း
		•	အစီရင်ခံစာအချေအားစစ်ဆေးခြင်း	ကုမ္ပဏီလီမိတက်
၁၁	ပတ်ဝန်းကျင်ဆိုင်ရာ	•	ပတ်ဝန်းကျင်ဆိုင်ရာ အခြေခံအချက်	ဦးမျိုးသက်နောင်
	အရည်အသွေး		အလက် များ ကောက်ယူခြင်း	(အဖွဲ့ခေါင်းဆောင်)
	တိုင်းတာခြင်း	•	လေထု၊ မြေထု၊ ရေထုနှင့်ဆူညံသံများ	ဦးအောင်ကျော်သန်း
			တိုင်းတာခြင်း	တိုင်းတာပညာရှင်
		•	ရေနှင့်စွန့်ပစ်ရည်များ ကေက်ယူငြခ်း	ဦးမျိုးမင်းထွန်း
		•	အခြေခံအချက်အလက်ကောက်ယူသော	လက်ထောက်ကျွမ်းကျင်ပညာရှင်
			ပုံထုတ်ပေးခြင်း	စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်
		•	အခြေခံအချက်အလက်များတွက်ချက်ခြင်း	ဆိုင်ရာ ဝန်ဆောင်မှုလုပ်ငန်း
		•	အစီရင်ခံစာပြင်ဆင်ရာတွင် ပံ့ပိုးပေးခြင်း	ကုမ္ပဏီလီမိတက်

## မူဝါဒ ၊ ဥပဒေနှင့် ဖွဲ့စည်းမှုဆိုင်ရာ မူဘောင်များ

အဆိုပြုလုပ်ငန်းအတွက် ပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာတွင် လိုက်နာဆောင်ရွက်ရမည့် နိုင်ငံတော်မှထုတ်ပြန်ထားသော ဥပဒေများကို လိုက်နာဆောင်ရွက်ရမည့်အပြင် စီမံကိန်းနင့်ဆက်စပ် သည့် အခြားဥပဒေများကိုလည်း လိုက်နာဆောင်ရွက်ရန် ဖြစ်ပါသည်။

- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒ (၁၉၉၄)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ နှင့် ပတ်ဝန်းကျင (၂၀၁၂)ထိန်းသိမ်းရေးနည်းဥပဒေ (၂၀၁၄)
- ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅)
- အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး လမ်းညွှန်ချက်များ (ထုတ်လွှတ်မူ)
- ဆိပ်ကမ်းအာဏာပိုင်ဥပဒေ (၂၀၁၅)
- ဓါတုပစ္စည်းနှင့် ဆက်စပ်ပစ္စည်းများ အန္တရာယ်မှ ကာကွယ်တားဆီးရေး ဥပဒေ (၂၀၁၇)
- စက်မှုဇုန်အတွင်းရင်းနီးမြှုပ်နံသူများ လိုက်နာလုပ်ဆောင်ရမည့် လုပ်ထုံးလုပ်နည်းများ (၂၀၁၅)
- အမျိုးသားစီမံကိန်းနှင့်စီးပွားရေးဖွံ့ဖြိုးတိုးတက်မှုဝန်ကြီးဌာန -သတိပေးချက်အမှတ်.၈၁/၂၀၁၄

- ပို့ကုန်သွင်းကုန် ဥပဒေ (၂၀၁၂)
- လုပ်ငန်းခွင်ကျန်းမာရေးနင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ဥပဒေ (မူကြမ်း ၂၀၁၉)

Manufacturing and Distribution of Various Types of Jellies

- မြန်မာ့အထူးစီးပွားရေးဇုန်ဥပဒေ (၂၀၁၄)
- မြန်မာ့အထူးစီးပွားရေးဇုန်နည်းဥပဒေ (၂၀၁၅)
- မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နံမှု ကော်မရှင်၏ ညွှန်ကြားစာအမှတ် ၁ ၂၀၁၄/၁နှင့် ၂၀၁၃/
- အလုပ်သမားလျော်ကြေးငွေ အက်ဥပဒေ (၁၉၂၃)
- အလုပ်သမားအဖွဲ့အစည်းဥပဒေ (၂၀၁၂)
- အလုပ်သမားရေးရာ အငြင်းပွားမှု ဖြေရှင်းရေးဥပဒေ (၂ဂ၁၆၊ ဖြည့်စွက် ၂ဂ၁၂)
- သဘာဝဘေးအွန္တရာယ်စီမံခန့်ခွဲမှုဥပဒေ (၂၀၁၃)
- နိုင်ငံတကာအဖွဲ့အစည်းများနှင့် ကွန်ဗီးရှင်းများနှင့် သဘောတူညီချက်များ
- စီမံကိန်းနှင့်အခြားဆက်စပ်ဥပဒေများ

# စီမံကိန်းတည်နေရာ

အဆိုပြုစက်ရုံသည် မြန်မာနိုင်ငံ၊ ရန်ကုန်တိုင်းဒေသကြီး၊ ရွှေလင်ပန်းစက်မှုဇုန်၊ ကနောင် မင်းသားကြီးလမ်း၊ အကွက်အမှတ် (၄၆၇/က) တွင်တည်ရှိပြီး ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ခြင်းလုပ်ငန်းကို လုပ်ကိုင်ဆောင်ရွက်လျှက်ရှိပါသည်။ စက်ရုံအရှေ့အရပ်တွင် ရွှေလဝန်းကုမ္ပဏီလီမိတက်၊ အနောက်အရပ် တွင် ကနောင်မင်းသားကြီးလမ်း၊ တောင်အရပ်တွင် မြန်မာရိုဟိုးကုမ္ပဏီလီမိတက်နှင့် မြောက်အရပ်တွင် ဝက်မစွပ်ဝန်ထောက်လမ်း တို့ ဖြစ်ပါသည်။ ပထဝီဝင်တည်နေရာအမှတ်မှာ-

မြောက်လတ္တီတွဒ် - ၁၆º ၅၄ မိနစ် ၃၅.၆၁၅ စက္ကန့်

အရှေ့လောင်ဂျီတွဒ် - ၉၆º ၀၄ မိနစ် ၁၃.၁၅၂ စက္ကန့်



ပုံ - ၁ စက်ရုံတည်နေရာပြပုံ

## စက်ရုံပတ်ဝန်းကျင်နှင့်လမ်းကြောင်းပြပုံ

စက်ရုံပတ်ဝန်းကျင်တွင် ဆန်စက် (ရွှေလဝန်းကုမ္ပကီလီမိတက်) ကနောင်မင်းသားကြီးလမ်း အထည်ချုပ်စက်ရုံ (မြန်မာရိုးဟိုးကုမ္ပကီလီမိတက်) ဝက်မစွပ်ဝန်ထောက်လမ်း

အရှေ့အရပ် အနောက်အရပ် တောင်အရပ် မြောက်အရပ်



ပုံ - စက်ရုံပတ်ဝန်းကျင်နှင့်လမ်းကြောင်းပြပုံ

Aung Zayya Bridge

Bayint Naung Bridge

A Project

e Pyi Thar Bridge

အဆောက်အဦများ

စက်ရုံဧရိယာတွင် ထုတ်လုပ်မှုအဆောက်အဉီ	(၁၅၅ ပေ x ၁၈၇ ပေ)
ဘွိုင်လာအဆောက်အဦ	(၆၆ ပေ x ဂ၂.၅ ပေ)
ဧည်သည်နားနေဆောင်	(၉၅ ပေ x ၂၅ ပေ)
စားသောက်ဆောင်	(၉၅ ပေ x ၂၅ ပေ)

လက်ရှိ စက်ရုံအဆောက်အဉီများနေရာချထားူမှုတွင် ကုန်ကြမ်းသိုလှောင်နေရာ၊ ထုတ်လုပ်မှုနေရာ၊ အထောက်အပံ့ပေးသောပစ္စည်းနေရာ၊ ရုံးခန်း၊ စိမ်းလန်းစိုပြေဒရိယာနှင့်ကားပါကင်တို့ ပါဝင်သော နေရာ ချထားမှုပုံကို အောက်တွင်ဖော်ပြထားပါသည်။



ပုံ - ၃ စက်ရုံအဆောက်အဉီနေရာချထားမှု

# ကုန်ချောထုတ်လုပ်မှု

ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ဖြန့်ဖြူးရေးလုပ်ငန်းတွင် အောက်ဖော်ပြပါ အမျိုးအစားမများကို ထုတ်လုပ်ဖြန့်ဖြူသွားမည်ဖြစ်ပါသည်။

၁။ ဟီရိုး ဂျယ်လီကပ်

၂။ ဟီးရိုး ပလပ်စ် ဂျယ်လီ

၃။ ဒိုင်ယာမိုတို လိုက်တ် ကစ် ဂျယ်လီ

၄။ ဒိုင်ယာမိုတို ဘစ်စ ကပ် ဂျယ်လီ တို့ကိုထုတ်လုပ်မည်ဖြစ်ပါသည်။

ထုတ်လုပ်မှုအသေးစိတ်အချက်အလက်များကို အောက်ပါဇယား-၃ တွင် ဖော်ပြထားပါသည်။

ဇယား -၃ ထုတ်လုပ်မှုစာရင်း

စဉ်	Particular	အလေးချိန် (ဂရမ်)
c	Hero Jelly Cup	ال
J	Hero Plus Jelly	၁၂၀
6	Daiya Moto Light Kit Jelly Cup	୭୭
9	Daiya Moto Big Cup Jelly	၁၃၀





ပုံ - ၄ ထုတ်ကုန်ပစ္စည်းများ

## ထုတ်လုပ်မှုပမာက

အဆိုပြုစက်ရုံတွင် ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ခြင်းလုပ်ငန်းကို ဆောင်ရွက်သွားမည်ဖြစ်ပြီး ထုတ်လုပ်မှု၏ ၉၀ % ကို ပြည်တွင်းတွင် ရောင်းချသွားမည်ဖြစ်ပြီး ၁၀ % ကို ထိုင်းနိုင်ငံသို့ တင်ပို့သွားမည် ဖြစ်ပါသည်။ ထုတ်လုပ်မှုဆိုင်ရာအသေးစိတ်ကို အောက်ပါဇယား (၄)နှင့် ဇယား (၅) တွင် ဖော်ပြထား ပါသည်။ ကုန်ထုတ်လုပ်မှုသည် တစ်ရက်လျှင် တစ်ဆိုင်းဖြင့် တစ်လ ၂၆ ရက်ဖြင့် လုပ်ကိုင် ဆောင်ရွက်မှု အပေါ် မူတည်ပါသည်။

	ထုတ်ကုန်အမည်		ထုတ်လုပ်မှုပမာက (စက္ကူပုံး)						
စဉ်		စက္တူတစ်ပုံးလျှင် ထုတ်ပိုးမှု		နှစ်စဉ်					
			ပထမ	ဒုတိယ	တတိယ	စတုတ္ထ	ပဉ္စမ - နှစ်သုံးဆယ်		
Э	Hero Jelly Cup	20 g x 35 cups x 12 bags	216,000	368,280	432,000	432,000	475,200		
J	Hero Plus Jelly	120 g x 6 bags x 16 packs	40,500	129,600	162,000	162,000	178,200		
9	Daiyamoto Light Kit Jelly Cup	55 g x 15 cups x 12 packs	90,000	172,800	216,000	216,000	237,600		
9	Daiyamoto Big Cup Jelly	130 g x 6 cups x 12 packs	27,000	259,200	324,000	324,000	356,400		
	<b>စုစုပေါင်းထုတ်</b> လု	ပ်မှုပမာက	373,500	929,880	1,134,000	1,134,000	1,247,400		

လယား - ၄ ဂျယ်လီအမျိုးမျိုး နှစ်စဉ်ထုတ်လုပ်မှုပမာက (ပြည်တွင်းရောင်းချရန်)

ဇယား - ၅ ဂျယ်လီအမျိုးမျိုး	ရာရပ်တွင်လို့ရာက	(ပြည်ပတင်ပိရန်)
	foo foo foo foo foo foo	

စဉ်	ထုတ်ကုန်အမည်	စက္ကူတစ်ပုံးလျှင် ထုတ်ပိုးမှု	ထုတ်လုပ်မှုပမာက (စက္ကူပုံး)					
			နှစ်စဉ်					
			ပထမ	ဒုတိယ	တတိယ	စတုတ္ထ	ပဉ္စမ - နှစ်သုံးဆယ်	
С	Hero Jelly Cup	20 g x 35 cups	24,000	45,320	48,000	48,000	52,800	
		x 12 bags						
J	Hero Plus Jelly	120 g x 6 bags	4,500	18,000	18,000	18,000	19,800	
		x 16 packs						
9	Daiyamoto Light Kit	55 g x 15 cups	10,000	24,000	24,000	24,000	26,400	
	Jelly Cup	x 12 packs						
9	Daiyamoto Big Cup	130 g x 6 cups	3,000	16,000	36,000	36,000	39,600	
	Jelly	x 12 packs						
စုစုပေါင်းထုတ်လုပ်မှုပမာက		41,500	103,320	126,000	126,000	138,600		

## ကုန်ကြမ်းပစ္စည်းများ

ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ခြင်းလုပ်ငန်းတွင် အသုံးပြုမည့် ကုန်ကြမ်းပစ္စည်းများမှာ သကြား၊ ဖလူးတို့စ်ဆွိုင်းအပ်၊ အစားအသောက်အရည်အသွေးမြင့်ကုန်ပစ္စည်းများ၊ အချိုဓါတ်ပါဝင်သောအရည်နှင့် အမှုန့်ပစ္စည်းများ၊ လူတို့ဖန်တီးထားသော အရသာနှင့်အရောင်တို့ပါဝင်ပါသည်။ Thai Faster Products and M.K. Company Limited သည် သကြား၊ ထုတ်ပိုးစက္ကူပုံးကဲ့သို့သောပစ္စည်းများကို ပြည်တွင်းတွင် ဝယ်ယူ၍ အခြားပစ္စည်များကို ပြည်ပမှ တင်သွင်းပါသည်။ ကုန်ကြမ်းပစ္စည်းများ စာရင်းကို အောက်ပါဇယား (၆)နှင့် (၇)တွင် ဖော်ပြထားပါသည်။ စားသောက်ကုန် အရည်သွေးမြင့်ဓါတုပစ္စည်းများကို ဇယား (၈)တွင် ဖော်ပြထားပါသည်။

	အမျိုး အစား		အရေအတွက်				တင်	
စ ဉ်		ရေတွက်မှု	ပထမ	ဒုတိယ	တတိယ	စတုတ္ထ	ပဉ္စမ - နှစ်သုံးဆယ်	သင်းမှု သွင်းမှု
э	Carrageen an Powder		11,085	28,406.8	34,740	34,740	38,214	
J	Locust bean Gum	നീ	11,830	30,148.8	36,840	36,840	40,524	ယိုး
9	Konjac Gum	လို	4,984	12,706.96	15,528	15,528	17,080.8	ယု. ဒယား နိုင်ငံ
9	Artificial Flavor	ရမ်	3,856	9,965.44	12,192	12,192	13,411.2	နပင
ງ	Artificial Color		1,114.5	2,895.72	3,546	3,546	3,900.6	
G	PP Cup							
	-HeroJelly	ଚ	100,800,000	173,712,000	201,600,000	201,600,000	221,760,000	
	-Daiya	က်	18,000,000	35,424,000	43,2000,000	43,2000,000	47,520,000	ပြည်
	moto Light							တွင်း
	- Daiyamot		2,160,000	19,814,400	25,920,000	25,920,000	28,512,000	
	Big Cup							
የ	Plastic Bag							ມົວຈິ
	-Hero Jelly	အိ	2,880,000	4,963,200	5,760,000	5,760,000	6,336,000	ပြည် တွင်း
	- Hero Plus	တ်	4,320,000	14,169,600	17,280,000	17,280,000	19,008,000	0,00
ଚ	-Hero Jelly		100,800,000	173,712,000	201,600,000	201,600,000	221,760,000	
	-Daiya	ခု	18,000,000	35,424,000	43,200,000	43,200,000	47,520,000	ယိုး
	moto Light							ဒယား
	- Daiya		2,160,000	19,814,400	25,920,000	25,920,000	28,512,000	နိုင်ငံ
	moto Big							
୧	၉ စက္ကူးဘူးနွံအသေး							
	Daiyamoto	ဘူး	1,200,000	2,361,600	2,880,000	2,880,000	3,168,000	ပြည်

ဇယား (၆) ကုန်ကြမ်းပစ္စည်းများစာရင်း
#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

ο	္က အရေအတွက်							တင်
ð	အမျိုး အစား	ဓရတွက်မှု	ပထမ	ဒုတိယ	တတိယ	စတုတ္ထ	ပဉ္စမ - နစ်သုံးဆယ်	သွင်းမှု
	Light Kit							တွင်း
	Daiyamoto	ဘူး						
	Big Cup		360,000	3,302,400	4,320,000	4,320,000	4,752,000	
ວ ເ	ပလပ်စတစ် တိပ်	ခု	415,000	1,033,200	1,260,000	1,260,000	1,386,000	ပြည် တွင်း

# ဇယား (၇) ကုန်ကြမ်းပစ္စည်းများလိုအပ်ချက် (ပြည်တွင်းမှဝယ်ယူခြင်း)

<b>.</b>	စဉ် အမျိုးအစား ေရ			ഗണ					
2	3200.3203.	တွက်ပုံ	ပထမ	ဒုတိယ	တတိယ	စတုတ္ထ	ပဉ္စမ - နှစ်သုံးဆယ်		
	သန့်စင်သော	ကီလို	485,800	1,239,408	1,514,400	1,514,400	1,665,840		
၁	သကြား	ဂရမ်	405,000	1,239,400	1,514,400	1,514,400	1,003,040		
J	စက္ကူပုံးခွံ	ာက္တူပုံးခွံ							
	Hero Jelly Cup		240,000	413,600	480,000	480,000	528,000		
	Hero Plus Jelly		45,000	147,600	180,000	180,000	198,000		
	Daiyamoto Light	0	100,000	196,800	240,000	240,000	264,000		
	Kit Jelly Cup	ခု	100,000	190,000	240,000	240,000	204,000		
	Daiyamoto Big		30,000	275,200	360,000	360,000	206.000		
	Cup Jelly		,	,	,	•	396,000		

# ဇယား (၈) စားသောက်ကုန်အရည်အသွေးမြင့်ဓါတုပစ္စည်းများ

အမျိုးအစား	ထုတ်ပိုးမှု	ဟီးရိုးဘွိုင်းဂျယ်လီနှင့် ဒိုင်ယာမိုတိုဂျယ်လီ (ကီလိုဂရမ်)			သယ်ယူ/ ပို့ဆောင်	တင်သွင်း
-	ပုံစံ	နေစဉ်	လစဉ်	နှစ်စဉ်	အဖွဲ့စည်း	ମ
Tripotassium Citrate (P-PCT)		2.714	81.410	976.92		
Maltodextrin	အိတ်	8.832	264.960	3,179.52		
Citric Acid Monohydrate		3	90	1,080		
Grap Flavor Symrise (F-GRS)		0.83	2.478	29.74		
Orange Flavor(Symrise) (F-ORS)	ပုံး	0.022	0.662	7.95	M.K	
Lychee Flavor (VM) (F-LCV)		0.029	0.875	10.50	Trading	ယိုးဒယား
Grap Flavor(MV/GRV/) (F-GRM)		0.067	2.016	24.19	logistic	နိုင်ငံ
Grape Flavor(Sensient ) (F-GRV)	ပုံး	0.198	5.950	71.40	logistic	
Stawberry Flavor TFF (F-STT)		0.060	1.800	21.60		
Orange Flavor (Thai Inter) (F-ORT)		0.227	6.806	81.67		
Salacider Flavor (Firmenich) (F-	ပုံး	0.218	6.528	78.34		
SLF)						

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Pineapple Falvor (Thai Inter) (F- PAT)		0.110	3.311	39.74	
Aspartame Powder (P-APT)	ဝကျယ်။	0.226	6.775	81.30	
Acesul FAME-K (P-ACEF)	စက္ကူပုံး	0.236	7.085	85.02	
Sunset Yellow FCF (P-SSY)		0.250	7.500	90.00	
Dark Red Carmoisine (P-CMI)	အိတ်	0.079	2.356	28.27	
Tartrazine (P-TTZ)		0.050	1.500	18.00	
Probenz SG Sodium Benzoate (P-	အိတ်	0.916	27.492	329.90	ပြည်တွင်း
BZA)	3000				

# ကုန်ထုတ်လုပ်မှုအဆင့်ဆင့်ပြပုံ

ဂျယ်လီ (Hero Boys and Daiya Moto) ထုတ်လုပ်မှုလုပ်ငန်းစဉ်အဆင့်ဆင့်ကို

- (၁) ကုန်ကြမ်းပစ္စည်းများပြင်ဆင်ခြင်း၊
- (၂) ရောနှောခြင်း၊
- (၃) ဖြည့်သွင်းခြင်း၊
- (၄) အအေးခံခြင်းနှင့်
- (၅) ထုတ်ပိုးခြင်းတို့ ဖြစ်ပါသည်။



ပုံ - ၅ Hero Boys ဂျယ်လီထုတ်လုပ်ပုံအဆင့်ဆင့်

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



ပုံ - ၆ Daiya Moto ဂျယ်လီထုတ်လုပ်ပုံအဆင့်ဆင့်

### ဝန်ထမ်းအင်အား

Thai Faster Products and M.K ကုမ္ပကီလီမိတက်သည် ဝန်ထမ်းများကို အောက်ပါ ဇယားအတိုင်း စီစဉ်ဆောင်ရွက်ထားပါသည်။ သို့သော် ကုမ္ပကီအနေဖြင့် ကနဦးလုပ်ငန်း ဆောင်ရွက်သည့် နှစ်တွင် ဝန်ထမ်း (၁၉၆) ဖြင့် ဂျယ်လီထုတ်လုပ်ခြင်းလုပ်ငန်းကို ဆောင်ရွက်ပါမည်။ ဇယား (၉) အလုပ်အကိုင်အစီအစဉ်

<u> </u>					-				
		පෘදෙනගුරා							
အမျိုးအစား	နေရာ	ပထမနှစ်	ဒုတိယနစ်	တတိယနစ်	စတုတ္ထနှစ်	ပဥ္ကမ မှ			
						နှစ်သုံးဆယ်			
ပြည်တွင်းဝန်ထမ်း									
အုပ်ချုပ်မှုအဆင့်	စီမံခန့်ခွဲရေး	1	1	2	2	2			
ကျွမ်းကျင်မှုအဆင့်	ထုတ်လုပ်ရေး	3	3	3	3	3			
ကြီးကြပ်သူအဆင့်	အရည်အသွေး	10	10	15	15	15			
အတွင်းရေးမှူး	ရုံးပိုင်းဆိုင်ရာ	4	4	6	6	6			
ကျွမ်းကျင်လုပ်သား	ကုန်ထုတ်လုပ်မှု	20	25	30	30	30			
ဝန်ထမ်းများ	ထုတ်လုပ်မှု	150	250	300	300	300			
	Total	188	293	356	356	356			
Foreign Experts and	Technicians Personi	nel Required							
အုပ်ချုပ်မှုအဆင့်	စီမံခန့်ခွဲရေး	(°)	3 2	2 1	1	1			
ကျွမ်းကျင်မှုအဆင့်	ထုတ်လုပ်ရေး	3	3 3	3 3	3	3			
ကြီးကြပ်သူအဆင့်	ရုံးပိုင်းဆိုင်ရာ	2	2 2	2 2	2	2			
	စုစုပေါင်း	8	3 7	7 6	6	6			

Manufacturing and Distribution of Various Types of Jellies

### အလုပ်ချိန်နှင့်အလုပ်လုပ်ရက်ပေါင်း

ထုတ်လုပ်မှုလုပ်ငန်းစဉ်အတွက်အလုပ်ချိန်မှာ နံနက် ၇:၀၀ နာရီ မှ ညနေ ၄:၀၀ နာရီ အထိ (တနင်္လာမှ သောကြာ) ညနေ ၅:၃၀ နာရီ အထိ (အချိန်ပို) နံနက် ၇:၀၀ နာရီ မှ နေ့လည် ၁၁:၀၀ နာရီအထိ (စနေနေ့) အားလပ်ရက် (တနင်္ဂနွေနေ့) တစ်နှစ်အလုပ်လုပ်ရက်ပေါင်း - ရက်ပေါင်း ၃၀၀

Thai Faster Products and M.K. Company သည် ရှောင်တခင်ခွင့်များ၊ အချိန်ပိုများ၊ အချိန်ပိုခံစားခွင့်များနှင်နှစ်စဉ် အကျိုးခံစားခွင့်များ စသည်တို့ဖြင့် ဝန်ထမ်းများအတွက် အစီစဉ်များ ထားရှိ ထားပါသည်။ ထို့အပြင် ရှေးဦးသူနာပြုဆေးသေတ္တာများနှင့် ကျန်းမာရေးစောင့်ရှောက်မှု အစီအစဉ်များ ထောက်ပံ့ပေးထားပါသည်။

# စွန့်ပစ်ရည်ထွက်ရှိမှုနှင့်သန့်စင်မှုနည်းစနစ် စွန့်ပစ်ရည်ထွက်ရှိမှု

စက်ရုံတွင် အဓိကအားဖြင့် ထုတ်လုပ်မှုလုပ်ငန်းစဉ်နှင့် အထွေထွေသုံးစွဲမှု ထွက်ရှိလာသော စွန့်ပစ်ရည်များ သာဖြစ်ပါသည်။ ထုတ်လုပ်မှုလုပ်ငန်းစဉ်မှထွက်ရှိသော စွန့်ပစ်ရည်များအနေဖြင့် ကြမ်းခင်းဆေးကြောခြင်း၊ ထုတ်လုပ်မှုကန်များဆေးကြောခြင်း၊ အအေးခံခြင်းမှ ထွက်ရှိခြင်းတို့ဖြစ်ပါသည်။ အထွေထွေသုံးစွန့်ပစ်ရည်များတွင် စားသောက်ဆောင်မှလက်ဆေးခြင်း၊ ရုံးခန်းတို့မှထွက်ရှိပြီး သန့်စင်ခန်း များမှ ဆေးကြောခြင်းတို့ ဖြစ်ပါသည်။ မိုးရေများသည် မြူနီစီပယ်မြောင်းထဲသို့ သီးသန့်အနေဖြင့် စီးဆင်းသွားပါသည်။ စွန့်ပစ်ရည်စွန့်ထုတ်ခြင်းနှင့် စွန့်ပစ်ခြင်းများကို အောက်ပါ ဇယား (၁၀)တွင် ဖော်ပြထားပါသည်။

စဉ်	အရင်းမြစ်		ပမာက (လီတ	သန့်စင်မှုစနစ်	
5	အရင်းမြော	ရက်	2	နှစ်	
э	ထုတ်လုပ်မှုလုပ်ငန်းစဉ်	10,000	260,000	3,000,000	စွန့်ပစ်ရည်သန့်စင်ကန်
J	အထွေထွေသုံးရေ	200	5,200	60,000	

ဇယား -၁၊ စွန့်ပစ်ရည်ထွက်ရှိမှုနှင်စွန့်ပစ်မှု

# စွန့်ပစ်ရည်သန့်စင်မှုစနစ်

စက်ရုံတွင် ထုတ်လုပ်မှုလုပ်ငန်းစဉ်များမှ ထွက်ရှိလာသော စွန့်ပစ်ရည်များကို သန့်စင်ရန် စွန့်ပစ်ရည်သန့်စင်စနစ် တပ်ဆင်ထားပါသည်။ စွန့်ပစ်ရည်သန့်စင်ကန်နှင့်လုပ်ဆောင်အဆင့်ဆင့်ကို အောက်ပါပုံ (၇) တွင် ဖော်ပြထားပါသည်။

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



ပုံ - ၇ စွန့်ပစ်ရည်သန့်စင်ကန်

### အရြားအထောက်အပံများ

ကုမ္ပဏီအနေဖြင့် စက်ရုံရှိ ဝန်ထမ်းများပျော်ရွှင်စေရန်နှင့် သက်သာချောင်ချိရေးအစီအစဉ်များကို လည်း စီမံဆောင်ရွက်ထားပါသည်။

### တစ်ကိုယ်ရည်သန့်ရှင်းရေး

(က) ဝန်ထမ်းများကို တစ်ကိုယ်ရည်သန့်ရှင်းရေးနှင့်ပတ်သက်၍သင်ကြားပေးခြင်း - အစားအစား များမစားမီနှင့် အိမ်သာမှထွက်လာပြီးနောက် ဆပ်ပြာဖြင့်ဆေးကြောရန်

(ခ) ယူနီဖောင်းများကို သန့်ရှင်းစွာဝတ်ဆင်စေရန်နှင့်လက်အိတ်၊ နာခေါင်းစဉ်နှင့် ခေါင်းအုပ်များ ထောက်ပံ့ပေးခြင်း

(ဂ) စားသောက်ဆောင်အတွက် လေဝင်လေထွက်ကောင်းမွန်စေခြင်း၊ ခုံများလုံလောက်စွာ ထားရှိခြင်းနှင့် သောက်ရေသန့်၊ လက်ဆေးဆပ်ပြာထား ထားရှိထားပေးခြင်း

(ဃ) သန့်စင်ခန်းများလုံးလောက်စွာထောက်ပံပေးထားခြင်း၊ လက်သန့်စင်ဆေးရည်များ ထောက်ပံ့ ပေးထားခြင်း

(င) သောက်သုံးရေသန့်ထောက်ပံ့ပေးထားခြင်း

### ကျန်းမာရေးဆိုင်ရာစောင့်ရှောက်မှု

Thai Faster Products and M.K Company Limited စက်ရုံတွင် ဆေးသေတ္တာကို ထားရှိထားပြီး ဝန်ထမ်းများအတွက် နာမကျန်းဖြစ်ပါက လိုအပ်သော အခြေခံဆေးဝါးများနှင့် အခြားအသေးစား

Manufacturing and Distribution of Various Types of Jellies

မတောတဆမှုများအတွက် စီစဉ်ထားပါသည်။ အကယ်၍ အခြားထိခိုက်မှု ကြီးကြီးမားမားဖြစ်လာပါက် ဆေးရုံနှင့်ချိတ်ဆက်ဆောင်ရွက်ထားပါသည်။

(က) စက်ရုံတွင် ဝန်ထမ်းများ၏ ကျန်းမာရေးဆိုင်ရအသိပညာပေးခြင်း

(ခ) တစ်ခါတစ်ရံ အဆုတ်ရောဂါကဲ့သို့သော ဆေးစစ်ဆေးမှုများကို လုပ်ဆောင်ပါသည်။

(ဂ) လိုအပ်ပါက အခမဲ့ ကုသမှုများကို ထောက်ပံ့ပေးသွားမည်ဖြစ်ပါသည်။

(ဃ) ကုမ္ပဏီအနေဖြင့် ကိုဗစ်-၁၉ ကဲ့သို့သော ကူးစက်ရောဂါများအတွက် ဝန်ထမ်းများကို ကာကွယ်ဆေးများထိုးပေးခြင်း လုပ်ဆောင်ပေးထားမှုကို နောက်ဆက်တွဲ (၂၈)တွင် ဖော်ပြထားပါသည်။

### သင်တန်းများပေးခြင်း

- (က) စက်ရုံရှိဝန်ထမ်းများ ရိုးသားကြိုးစားမှုနှင့်လူတော်လူလိမ်မာများ ဖြစ်လာစေရန် ဆုပေး ဒဏ်ပေးစနစ်ကို လုပ်ဆောင်ပါသည်။
- (ခ) အလုပ်ကျိုးစားသူများအတွက် သင့်လျော်သော အလုပ်သင်တန်းများ ထောက်ပံ့ခြင်း
- (ဂ) ဝန်ထမ်းများ၏ ကျွမ်းကျင်မှုပေါ် မူတည်၍ အလုပ်ခွင်ရာထူးများစနစ်ကို ကျင့်သုံးပါသည်။
- (ဃ) လုပ်ငန်းခွင်ကြီးကြပ်သူ၊ လက်အောက်ဝန်ထမ်း၊ အထက်လူကြီးစသည်ဖြင့် ရိုးသေလေးစားမှု ရှိစေရန် သင်ကြားပြသထားပါသည်။
- (င) လုပ်ငန်းခွင်ရှိ မည်သည်နေရာတွင်မဆို စည်းလုံးညီညွှတ်ကြစေရန် သင်ကြားထားပါသည်။
- (စ) အရေးအပေါ် တုံ့ပြန်မှုဆိုင်ရာများအတွက် သင်ကြားများ ပို့ချထားပါသည်။

# သယ်ယူပို့ဆောင်ရေးစီစဉ်ထားရှိခြင်း

ကုန်ကြမ်းများ၊ ကုန်ရျောများနှင့်ဝန်ထမ်းများ၏ သယ်ယူပို့ဆောင်ရေးအတွက် အောက်ပါ ဇယားတွင် ဖော်ပြထားပြီး စက်ရုံအနေဖြင့် ဝန်ထမ်းကြို/ပို့ယာဉ်များအတွက် စနစ်တကျဖြစ်စေရန် စီစဉ်ထားပါသည်။ ဝန်ထမ်းကြို/ပို့ယာဉ်များကို စက်ရုံ ပရဝုက်အတွင်းတွင်သာ ရပ်နားစေပါသည်။ ထို့ကြောင့် Thai Faster Products & M.K ကုမ္ပကီ၏ မော်တော်ယာဉ်များကြောင့် ယာဉ်ကြော ကျဉ်တည်းမှုမရှိစေရန် ဖြစ်ပါသည်။

# ပတ်ဝန်းကျင်နှင့်လူမှုဝန်းကျင်ဆိုင်ရာအခြေအနေများဖော်ပြချက်

အဆိုပြုစက်ရုံသည် ရွှေလင်ပန်းစက်မှုဇုန်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် တည်ရှိသောကြောင့် ပတ်ဝန်းကျင်ဆိုင်ရာအခြေအနေများနှင့် လူမှုစီးပွားဆိုင်ရာအချက်အလက်များကို မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန၏ ၂၀၂၀ ခုနှစ်၊ စက်တင်ဘာလ ရက်စွဲပါ လှိုင်သာယာ (အရှေ့ပိုင်း) မြို့နယ် ဒေသဆိုင်ရာအချက်အလက်များမှ ကိုးကားခဲ့ပါသည်။

အမျိုးအစား	ဖော်ပြချက်
ပထဝီဝင်အနေအထား	
တည်နေရာနှင့်	လှိုင်သာယာ (အရှေ့ပိုင်း)မြို့နယ်သည် ရန်ကုန်တိုင်းဒေသကြီး၊ မြောက်ပိုင်းခရိုင်တွင်

ဇယား - ပတ်ဝန်းကျင်နှင့်လူမှုဝန်းကျင်ဆိုင်ရာအခြေအနေများဖော်ပြချက်

Manufacturing and Distribution of Various Types of Jellies

2 2 2									
အကျယ်အဝန်း	တည်ရှိပါသည်။ လှိုင်သာယာမြို့နယ်သည် မြောက်လတ္တီတွဒ် ၁၆ ဒီဂရီ ၄၇ မိနစ် နှင့် ၂ဂ								
	ဒီဂရီ ၁၂ ဖိ	ဒီဂရီ ၁၂ မိနစ်ကြား၊ အရှေ့လောင်ဂျီတွဒ် ၉၆ ဒီဂရီ ၁၂ မိနစ်နှင့် ၁၀၀ ဒီဂရီ ၁၃							
	မိနစ်အကြား တွင်တည်ရှိပါသည်။								
	လှိုင်သာယာ (အရှေ့ပိုင်း) မြို့နယ်၏ အကျယ်အဝန်းမှာ (၁၃.၉၆) စတုရန်းမိုင်								
	ကျယ်ဝန်းပါသည်။								
နယ်နိမိတ်	လှိုင်သာယာ (အရှေ့ပိုင်း) မြို့နယ်၏ အရှေ့ဘက်တွင် ရန်ကုန်တိုင်းဒေသကြီး၊								
		မြောက်ပိုင်းခရိုင်၊ အင်းစိန်မြို့နယ်၊ အနောက်ဘက်တွင် လှိုင်သာယာ (အနောက်ပိုင်း)							
		မြောက်ပိုင်းရရှိင်၊ အင်းစန်မြို့နယ်၊ အနောက်ဘက်တွင် (ပိုင်သာယာ (အနောက်ပိုင်း) မြို့နယ်၊ တောင်ဘက်တွင် တွံ့တေးမြို့နယ်၊ မြောက်ဘက်တွင် ရွှေပြည်သာမြို့နယ်တို့ နှင့်							
			လျှက်ရှိပါသည်						
မြေမျက်နာသွင်ပြင်		-		မြမျက်နာသွင်ပြ	င်မှာ ညီညာ ပြန့်	ပြူးပါသည်။			
ရေဆင်း						ာရှေ့သို့ စီးဆင်းပြီး			
L L						၊ ပန်းလှိုင်မြစ်သည်			
		-		နဝါရီလတွင် မြစ်					
				၊ ၊ ၀ ပ p: သွားလာနိုင်ပြီ		n ° 1			
ပင်လယ်ရေ						ာ် ပျမ်းမျှ အမြင့်ပေ			
မျက်နှာပြင်အမြင့်		တည်ရှိပါဒ		( (		• • •			
ရာသီဥတုနှင့် သဘာဝပင	-								
ရာသီဥတု		ဘ(အရေ ပိ	ာင်း)မြို့နယ်သူ	ည် ပူအိုက်စွတ်စိုေ	သာရာသီဥတရိ	ပီး၊ အမြင်ဆံး			
-tC-t				_ ။ ကေစင်က နိမ့်ဆုံးအပူချိန်မှာ					
				ှား၊ ။ ။ ။ ။ ဒုအပူချိန်မှာ အော					
		- J [	- [ ] [ ] ]	• [[ U ] ]					
			မိုးဓရချိန်		အပူချိန်				
	စဉ်	ခုနှစ်		စုစုပေါင်း	နွေရာသီ	e 2			
1						ဆောင်းရာသီ			
		170	မိုးရွာရက်			ဆောင်းရာသီ (C)			
				မိုးဓရချိန်	(Ċ)	(°C)			
	े २	၂၀၁၇	၁၂၃	<b>မိုးဒေရချိန်</b> ၁၃၂.၀၅	(C) 90	(C) J?			
	0 J	၂လ၁၇ ၂လ၁၈	ວ၂၃ ວເງ	<b>မိုးဒေရချိန်</b> ၁၃၂.ဂရ ၁၁၃.၂၈	(C)           90           93	(C) 			
	2 J 2	၂လ၁၇ ၂လ၁၈ ၂လ၁၉	၁၂၃	<b>ໍຊິະດຊຊິຊ໌</b> ວວວວວ, ເຄ ວດບ ເດວ	(C) ୨୦ ୨୦ ୧୦ ୧୯	<b>(C)</b>  			
ဇီဝမ်ိုးစံမိုးတဲ့များ	0 J	၂လ၁၇ ၂လ၁၈	ວປວ ວບຄູ ວວປ	<b>မိုးဒေရချိန်</b> ၁၃၂.ဂရ ၁၁၃.၂၈	(C)           90           93	(C) 			
<b>ဇီဝမျိုးစုံမျိုးကွဲများ</b> သဘာဝပေါက်ပင်	2 J 2 7 9	၂၀၁၇ ၂၀၁၈ ၂၀၁၉ ၂၀၂၀	ວປວ ວບຄ ວວປ ວບວ	<b>ຊິ່ະດິຊຊິຊິနົ</b> ວວວວວ. ເອ ວດບ ເດວ ເອດ. ເດວ ເອດ. ເດວ	(C)           90           90           90           90           90           90           90           90	(C)  			
<b>ဇီဝမျိုးစုံမျိုးကွဲများ</b> သဘာဝပေါက်ပင်	ာ ၁ ၂ ၃ ၄ လှိုင်သာပ	၂၀၁၇ ၂၀၁၈ ၂၀၁၉ ၂၀၂၀	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁	မိုးရေရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂	(C) ၄၀ ၄၁ ၃၉ ၃၉ ၄၀	( <b>င)</b> ၂၇ ၂၆ ၂၆ ၂၆ ၅၆			
	ာ ၂ ၇ ၇ လှိုင်သာယ သဘာဝေ	၂၀၁၇ ၂၀၁၈ ၂၀၁၉ ၂၀၂၀ ၁၈(အရှေ့{	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁	<b>ຊິ່ະດິຊຊິຊິနົ</b> ວວວວວ. ເອ ວດບ ເດວ ເອດ. ເດວ ເອດ. ເດວ	(C) ၄၀ ၄၁ ၃၉ ၃၉ ၄၀	( <b>င)</b> ၂၇ ၂၆ ၂၆ ၂၆ ၅၆			
သဘာဝပေါက်ပင်	ာ ၁ ၂ ၃ ၄ ၄ လှိုင်သာယ သဘာဝ ေဘာစကို	၂၀၁၇ ၂၀၁၈ ၂၀၁၉ ၂၀၂၀ ၂၀၂၀ ၁၈(အရှေ့{ ပါက်ပင်မျာ င်းပင် တို့ဖြ	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၀၀၁ ၀၀၁ ၀၀၀၀၀၀ ရ ၀၀၀၀၀၀၀	မိုးဒေရရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂ ၇င်း သဘာဝအဒေ ရာပင်၊ မြရာပင်၊ ရ	(C) ၄၀ ၄၁ ၃၉ ၃၉ ၄၀ ၄၀ Տလျာက် ပေါက်ေ စန်ဒါပင်၊ ကုက္ကိုပ	( <b>င)</b> ၂၇ ၂၆ ၂၆ ၂၆ ၅၆			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန်	ာ ၁ ၂ ၃ ၇ ၇ လှိုင်သာယ သဘာဝေ ဘောစကို လှိုင်သာယ	၂၀၁၇ ၂၀၁၉ ၂၀၂၀ ၂၀၂၀ ၂၀၂၀ ၂၀၂၀ ၄.၀၄ တို့ဖြ ဘ(အရှေ့{	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ နှင်း)မြို့နယ်အ၀ နော လမုပင်၊ ခ စ်ပါသည်။	မိုးခရုရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂ ၇င်း သဘာဝအခ ရာပင်၊ မြရာပင်၊ ရ	(C) ၄၀ ၄၁ ၃၉ ၃၉ ၄၀ ၭလျာက် ပေါက်ေ ၁န်ဒါပင်၊ ကုက္ကိုပ	( <b>င)</b> ၂၇ ၂၆ ၂၆ ၂၆ ရာက်သည့် င်နှင့်			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန် သဘာဝပတ်ဝန်းကျင်	သဘာဝနေ လှိုင်သာယ သဘာဝနေ ဘောစကို လှိုင်သာယ	၂၀၁၇ ၂၀၁၉ ၂၀၁၉ ၂၀၂၀ ၁၈(အရှေ့ද် င်းပင် တို့ဖြ ဘ(အရှေ့ද် ဘ(အရှေ့ද်	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ ၀င်း)မြို့နယ်အင မှာ လမုပင်၊ ခ စိပါသည်။ စိင်း)မြို့နယ်တွင်	မိုးရေရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂ ၇င်း သဘာဝအရ ရာပင်၊ မြရာပင်၊ ဂ တောရိုင်းတိရစ္ဆ ည် ပန်းလှိုင်မြစ်နှင့်	(C) ၄၀ ၄၁ ၃၉ ၇၇ ၄၀ Տարոն ပေါက်ရေ သို့န်ခါပင်၊ ကုက္ကိုပ လှိုင်မြစ်အကြာ	( <b>င)</b> ၂၇ ၂၆ ၂၆ ၂၆ ရာက်သည့် င်နှင့်			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန် သဘာဝပတ်ဝန်းကျင် လက်ရှိအခြေအနေ	သဘာဝေ ကိူင်သာယ သဘာဝေ ဘောစကို လှိူင်သာယ အတွက် ၁	၂၀၁၇ ၂၀၁၉ ၂၀၂၀ ၂၀၂၀ ၁၇ (အရှေ့ ( ၁၇ (အရှေ့ ( ၁၇ (အရှေ့ ( သဘာဝပတ်	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ နှင်း)မြို့နယ်အင နိုင်း)မြို့နယ်တွင် နိုင်း)မြို့နယ်တွင် နိုင်း)မြို့နယ်သည်	မိုးခရုရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂ ၇င်း သဘာဝအခ ရာပင်၊ မြရာပင်၊ ရ တောရိုင်းတိရစ္စ မိ ပန်းလှိုင်မြစ်နှင့် ပန်းစိုပြေလျက်ရှိ	(C) ၄၀ ၄၁ ၇၁ ၃၉ ၇၀ ၄၀ နာန်ဒါပင်၊ ကုက္တိုပ သွန်များ မရှိပါ။ လှိုင်မြစ်အကြား	(င) ၂၇ ၂၆ ၂၆ ၂၆ ရာက်သည့် င်နှင့် တည်ရှိသည့်			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန် သဘာဝပတ်ဝန်းကျင် လက်ရှိအရြေအနေ သဘာဝပတ်ဝန်းကျင်	သဘာဝပ	၂၀၁၇ ၂၀၁၈ ၂၀၁၉ ၂၀၂၀ ၁၇ (အရှေ့ { ၀ါက်ပင်မျာ င်းပင် တို့ဖြ ဘ(အရှေ့ { သဘာဝပတ် တ်ဝန်းကျင်	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ ၁၀၁ ၁၀၁ ၁၀၁ ၁၀၁ ၁၀၁ ၁၀၁ ၁၀၁	မိုးခရရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂ တွင်း သဘာဝအခ ရာပင်၊ မြရာပင်၊ ရ ရာပင်၊ မြရာပင်၊ ရ တောရိုင်းတိရစ္စ သိ ပန်းလှိုင်မြစ်နှင့် ပန်းစိုပြေလျက်ရှိ အနေဖြင့် ကားလ	(င) ၄၀ ၄၁ ၃၉ ၇၇ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀	(င) ၂၇ ၂၆ ၂၆ ၂၆ ရာက်သည့် င်နှင့် း တည်ရှိသည့် း ဘည်ရှိသည့်			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန် သဘာဝပတ်ဝန်းကျင် လက်ရှိအခြေအနေ သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး	သဘာဝမ လှိုင်သာယ သဘာဝမ ဘောစကို လှိုင်သာယ အတွက် သ သဘာဝပ အရိပ်ရအ	၂၀၁၇ ၂၀၁၈ ၂၀၁၉ ၂၀၂၀ ၁၇ (အရှေ့ { သာ(အရှေ့ { သာ(အရှေ့ { သဘာဝပတ် တ်ဝန်းကျင် ပင်များအာ	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ ၀င်း)မြို့နယ်အဝ မိုင်း)မြို့နယ်အဝ စိပါသည်။ စိင်း)မြို့နယ်တွင် စိင်း)မြို့နယ်သည် စိင်း)မြို့နယ်သည် စိင်း)မြို့နယ်အင စိင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင် စိုင်း)မြို့နယ်အင် စိုင်း)မြို့နယ်အင် စိုင်း)မြို့နယ်အင် စိုင်း)မြို့နယ်အင် စိုင်း)မိုးနှင့်မို့နယ်အင် စိုင်း)မိုးနှင့်မို့နယ်အင် စိုင်း)မိုးနှင့်မို့နယ်အင် စိုင်း)မိုးနှင့်မိုးနှင်မိုးနှင်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင်မိုးနှင်နှင့်မိုးနှင်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင့်မိုးနှင်နိန်နှင့်မိုးနှင်နိန်နှင်နှင်နေမိုးနှင်နှင်နှင်နှင်နှင်နေမိုးနှင်နေနနံနှင်နေမိုးနှင	မိုးရေရှိန် ၁၃၂.ဂ၅ ၁၁၃.၂၈ ၁၀၂.ဂ၁ ၉၇.၇၂ ၇င်း သဘာဝအရ ရာပင်၊ မြရာပင်၊ ဂ တောရိုင်းတိရစ္စ ည် ပန်းလိုင်မြစ်နှင့် လန်းစိုပြေလျက်ရှိ အနေဖြင့် ကားလ ဆောင်ရွက်ခြင်း၊	(C) 90 90 90 90 90 90 90 90 90 90	(င) ၂၇ ၂၆ ၂၆ ၂၆ ၈၈၈၈သည့် င်နှင့် တည်ရှိသည့် ဘားဝဲ/ ယာတို့ တွင် င်းမြောင်း			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန် သဘာဝပတ်ဝန်းကျင် လက်ရှိအရြေအနေ သဘာဝပတ်ဝန်းကျင်	ာ ၁ ၂ ၃ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇ ၇	၂၀၁၇ ၂၀၁၉ ၂၀၂၀ ၂၀၂၀ ၁၇ (အရှေ့ ( သို ( သိရှေ့ ( သို ( သို ( သို ( သို ( သို ( သိရှိ)))))))))))))))))))))))))))))))))))	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ ၁၀၁ နှင်း)မြို့နယ်အင နိုင်း)မြို့နယ်တွင် နိုင်း)မြို့နယ်တွင် နိုင်း)မြို့နယ်တွင် လိန်းသိမ်းရေး ဆိုန်းသိမ်းရေး နှစ်စဉ်စိုက်ပျိုး က်ချိန်များတွင်	မိုးရေရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂ ၇င်း သဘာဝအရ ရာပင်၊ မြရာပင်၊ ရ တောရိုင်းတိရစ္စ မိ ပန်းလှိုင်မြစ်နှင့် လန်းစိုပြေလျက်ရှိ အနေဖြင့် ကားလ ဆောင်ရွက်ခြင်း၊ ဘောင်ရွက်ခြင်း၊	(C) ၄၀ ၄၁ ၇၁ ၃၉ ၇၇ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀ ၄၀ ၇၀ ၇၀ ၇၀ ၇၀ ၇၀ ၇၀ ၇၀ ၇၀ ၇၀ ၇	(C)         ၂၇         ၂၆         ၂၆         ၂၆         ၂၆         ၁၆			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန် သဘာဝပတ်ဝန်းကျင် လက်ရှိအခြေအနေ သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး	သဘာဝမ လှိုင်သာယ သဘာဝေ ဘောစကို လှိုင်သာယ အတွက် သ အတွက် သ သဘာဝပ အရိပ်ရအ များအတွင် ပေးဆောင်	၂၀၁၇ ၂၀၁၈ ၂၀၁၉ ၂၀၂၀ ၁၇ (အရှေ့ ( သာ(အရှေ့ ( သာ၀၀၇ (အရှေ့ ( သဘာ၀၀၇ သာ၀၀၇ သိဝန်းကျင် ပင်များအာ င်း ငါးရစ်တ င်ရွက်ခြင်း၊	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ ၁၀၁ ၀င်း)မြို့နယ်အင မိုင်း)မြို့နယ်အင မိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်း)မြို့နယ်အင စိုင်းချင် စိုင်းချင် စိုင်းချင် စိုင်းချင် စိုင်းချင် စိုင်းချင် စက်ရုံအလုပ်ရုံ	မိုးရေရှိန် ၁၃၂.ဂ၅ ၁၁၃.၂၈ ၁၀၂.ဂ၁ ၉၇.၇၂ ၇င်း သဘာဝအရ ရာပင်၊ မြရာပင်၊ ရ ရာပင်၊ မြရာပင်၊ ရ လောရိုင်းတိရစ္စ သိ ပန်းလိုင်မြစ်နှင့် လန်းစိုပြေလျက်ရှိ အနေဖြင့် ကားလ ဆောင်ရွက်ခြင်း၊ ငါးဖမ်းဆီးဆောင် ရှားမှ အညစ်အခ	(C) 90 90 90 90 90 90 90 90 90 90	( <b>င</b> ) ၂၇ ၂၆ ၂၆ ၂၆ ۱၆ ۰ ۰ ۰ ۰ ۰ ۰ ۰ ۰ ۰ ۰ ۰ ۰ ۰			
သဘာဝပေါက်ပင် တောရိုင်းတိရစ္ဆာန် သဘာဝပတ်ဝန်းကျင် လက်ရှိအခြေအနေ သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး	ာ သ ကိုင်သာယ သဘာဝေ ဘောစကို လှိုင်သာယ အတွက် သ သဘာဝပ အရိပ်ရအ များအတွင် ပေးဆောင် တကျရှိတေ	၂၀၁၇ ၂၀၁၉ ၂၀၁၉ ၂၀၂၀ ၁၇ (အရှေ့ { ပါက်ပင်မျာ င်းပင် တို့ဖြ ဘ(အရှေ့ { သဘာဝပတ် တ်ဝန်းကျင် ပင်များအာ င်း ငါးရစ်တ င်ရွက်ခြင်း၊ စာရန် စက်မှု	၁၂၃ ၁၀၅ ၁၁၂ ၁၀၁ ၁၀၁ နှင်း)မြို့နယ်အဝ းမှာ လမုပင်၊ ခ စ်ပါသည်။ စိင်း)မြို့နယ်တွင် စင်နံးကျင် စိမ်းရ လိန်းသိမ်းရေး နှစ်စဉ်စိုက်ပျိုး ကိချိန်များတွင် စက်ရုံအလုပ်ရုံ စုန်များအလိုက်	မိုးရေရှိန် ၁၃၂.၀၅ ၁၁၃.၂၈ ၁၀၂.၀၁ ၉၇.၇၂ ၇င်း သဘာဝအရ ရာပင်၊ မြရာပင်၊ ရ တောရိုင်းတိရစ္စ မိ ပန်းလှိုင်မြစ်နှင့် လန်းစိုပြေလျက်ရှိ အနေဖြင့် ကားလ ဆောင်ရွက်ခြင်း၊ ဘောင်ရွက်ခြင်း၊	(C) ၄၀ ၄၁ ၇၄ ၇၄ ၇၇ ၇၇ ၇၇ ၇၇ ၇၇ ၇၇ ၇၇ ၇၇	(C) ၂၇ ၂၆ ၂၆ ၂၆ ۹၈က်သည့် င်နှင့် ဆာလ်ရှိသည့် အာလိပညာ သားခံ/ ယာတို့ တွင် င်းမြောင်း အသိပညာ သားဘား စနစ် အား သက်ဆိုင်			

လူမှုရေးကက္က								
အုပ်ချုပ်ရေးနယ်မြေ	လိုင်သာယ	ာ(အရှေ့ပိုင်း)မြို့န	ယ်သည် ရပ်ကွက် (၉) မ	ရပ်ကွက်၊ ကျေးမ	ရွာအုပ်စု (၅) အုပ်စု			
			့စည်းထားပါသည်။					
အိမ်ခြေ/အိမ်ထောင်စု		လှိုင်သာယာ(အရှေ့ပိုင်း)မြို့နယ်၏ ၂၀၂၀ ပြည့်နှစ် စက်တင်ဘာလကုန်အထိ မြို့နေ						
		အိမ်ရေမှာ (၂၁,၁၄၁) ဖြစ်ပြီး ကျေးရွာအိမ်ရေမှာ (၇,၁၅၂)နှင့် မြို့နေအိမ်ထောင်စုမှာ						
		(၂၉,ဂ၅၆) ဖြစ်ပြီး ကျေးရွာနေအိမ်ထောင်စုမှာ (၁၂,၆၃ဂ) ဖြစ်ပါသည်။						
လူဦးရေ	လှိုင်သာယာ(အနောက်ပိုင်း) မြို့နယ်၏ ၂၀၂၀ ပြည့်နှစ် စက်တင်ဘာလကုန်အထိ							
	မြို့နေလူဦးရေမှာ (၁၅၉,၁၃၆)နှင့် ကျေးလက်နေလူဦးရေမှာ (ဂုပ,၁၂၈) ဖြစ်ပါသည်။ စုစုပေါင်း လူဦးရေမှာ (၂၂၉,၂၆၄) ဖြစ်ပါသည်။							
လူမျိုးများ			ယ်တွင် နေထိုင်ကြသော	ာလူမျိုးများမှာ ေ	အာက်ပါအတိုင်း			
	ဖြစ်ပါသည်		• · · · <b>·</b>		L			
	စဉ်	လူမျိုး	နေထိုင်သည့်ဦးရေ	မြို့နယ်လူဦးဖ ရာခိုင်နှုန်း	ତ୍ରଗୁର୍ଭା			
	Э	ကချင်	2002	0.099				
	J	ကယား	ର	900.0				
	9	ကရင်	၂,၆၃၈	၁.၁၅ဂ				
	9	ချင်း	999	୦.୦ର				
	ງ	မွန်	၄၄၈	၅င.೧				
	હ	ဗမာ	၂၁၆,၉၈၆	၉၄.၆၄				
	$\gamma$	ရခိုင်	၃,၁၇၃	၁.၃၇				
	ଚ	ရှမ်း	6JJ	0.09				
ကိုးကွယ်သည့်ဘာသာ			ယ်တွင် နေထိုင်ကြသော					
			ဗုဒ္ဓဘာသာ (၂၂၀,၈၅၉)					
			ဟမ်ဘသာ (၁,၁၆၃) ဒ					
နိုင်ငံခြားသားများ			ယ်အတွင်း နိုင်ငံရြားသ					
နေထိုင်မှု			ရ၏ (ဂ.၄၂ %) ဖြစ်ပါသ					
			ပါကစ္စတန် (၁၁၁)ဦး ရှိ					
			ဖြိုနယ်လူဦးရေ၏ (ဂ.၂၅	%)၊ အခြား (၂၆	န်၉၂ ဦး)			
	မြို့နယ်လူဦ	ဦးရေ၏ ၂.၂၄ % ဖြ	စ်ပါသည်။					
စီးပွားရေးကဏ္								
စီးပွားရေးဆိုင်ရာများ			ယ်သည် ရန်ကုန်တိုင်းေ					
			နေးကွေးသောမြို့နယ်ဖ		ည်။ မြို့နယ် အတွင်းရှိ			
			ထမ်းအနည်းငယ်သာရှိ					
			ာလုပ်ကိုင် ဆောင်ရွက်ဂြ					
			တစ်နိုင် မွေးမြူကြပါသဥ		с с			
			ာမ်းမကြီးပေါ် တွင် တည်					
			ခဲကထွက်ကုန်မရှိသော် <b>၊</b>		ဘုင်းဒေသကြီးမှ			
			ာင်းချပေးခြင်း ရှိပါသည်					
မြေအသုံးချမှု		ာ (အရှေ့ပိုင်း) မြို့ က်ပြ ပါအတိုင်း ဖြစ်၊	နယ်၏ မြေအမျိုးအစားဒ ပါသည်။	အလုက် အသုံးရ	ူထားသည့် ဧကမှာ			
		<u>မြေအမ</u> ျိုးအစား	<u> </u>		ရေိယာ (ကေ)			

	Э	စိုက်ပျိုးမြေ	
		(က) လယ်မြေ	-
		(ခ) ယာမြေ	-
		(ဂ) ကိုင်း/ကျွန်းမြေ	-
		(ဃ) ဥယျာဉ်မြေ	-
		(င) ဓနိ	-
	J	စားကျက်မြေ	-
	6	စက်မှုလုပ်ငန်းသုံးမြေ	၃၄၅၅.၆၇၈
	9	မြို့ရွာနှင့်အခြားမြေ	၁၃၁၉၁.၅၅၂
	ງ	ကြီးဝိုင်း/ကြီးပြင်ကာကွယ်တောဓရိယာ	-
	G	တောရိုင်း	-
	9	မြေရိုင်း	-
	େ	စိုက်ပျိုးခြင်းမပြုနိုင်သော ဧရိယာ	-
စက်မှုလက်မှုလုပ်ငန်း	လိုင်သာပ	ဘ (အရှေ့ပိုင်း) မြို့နယ်၏ စက်မှုလက်မှုလုပ်ငန်းများအ	ခနေဖြင်
лліі		်အထည်ရျပ်စက်ရုံ (၁)ရုံ	
		(၁) တွင် စက်ရုံပေါင်း (၁၀၈) ရုံ	
		(၂) တွင် စက်ရုံပေါင်း (၁၃၂) ရုံ	
		(၃) တွင် စက်ရုံပေါင်း (၆၆) ရုံ	
		(၄) တွင် စက်ရုံပေါင်း (၁၂၃) ရုံ	
		(၆) တွင် စက်ရုံပေါင်း (၁၃) ရုံ	
		(၇) တွင် စက်ရုံပေါင်း (၄၃) ရုံ	
		်းဇုန် တွင် စက်ရုံပေါင်း (၃၀၆) ရုံ	
		ပုဂ္ဂလိကပိုင် အိမ်တွင်း စက်မှုလက်မှုလုပ်ငန်းများအနေ	ဖြင့် စုစုပေါင်း (၉၂)
	ရှိပါသည်။		
		ဘ (အရှေ့ပိုင်း) မြို့နယ်တွင် သမဝါယမ အသင်းပေါင်း	(၂၂) ခု နှင့်
		ပေါင်း (၁) ခုရှိပါသည်။	
စီပွားရေးဆိုင်ရာ	-	ဘ(အရှေ့ပိုင်း) မြို့နယ်တွင် ကုန်စည်ဒိုင်၊ ပွဲရုံများ မရှိပါ။	I
အခြေခံအဆောက်အဦ		နေဖြင့် နိုင်ငံပိုင် (၁၁) ခု ရှိပါသည်။	
		များအနေဖြင့် (၄) ခုရှိပါသည်။	
		င် ဘက် (၈)ခုနှင့် အစိုးရဘက် (၁) ခု ရှိပါသည်။	
		နင့်အရောင်းဆိုင်များ (၄၆၇) ရှိပါသည်။	
		ုံးရေရှိရေးလုပ်ငန်း (၃) ခု ရှိပါသည်။	
အသက်မွေးဝမ်းကျောင်း		၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂၂	ာ အစိုးရဝန်ထမ်း (၂၈၈၇
လုပ်ငန်း		ထာင်မူလုပ်ငန်း (၁၈၅ ဦး)၊ အရောင်းအဝယ် (၉၇၈ ဦး)၊	
		န်း (၃၂၇၀ ဦး) နှင့် အခြားလုပ်ငန်း (၂၆၄၅ ဦး) တို့ ဖြစ်ပ	
အလုပ်လုပ်သူဦးရေနှင့်		ဘ(အရှေ့ပိုင်း) မြို့နယ်တွင် လုပ်ငန်းခွင်ရှိ လုပ်သားဦးဖ	—
အလုပ်လက်မဲ့ဦးရေ		က်မဲ့ဦးရေ (၂၂၇၀၉) ရှိပါသဖြင့် အလုပ်လက်မဲ့ ရာနိုင်နှ	
	ဖြစ်ပါသည်		
ပညာရေးကဣ			
ပညာရေးဆိုင်ရာ	လိုင်သာပ	ဘ(အရှေ့ပိုင်း) မြို့နယ်တွင် အထက်တန်းကျောင်း (၈)	ကျောင်း၊
အချက်အက်များ		ာန်းကျောင်းခွဲ (၅) ကျောင်း၊ မူလတန်းကျောင်း (၁၄) ေ	
			-u

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

	မူလတန်းကြိုကျောင်း (၄)၊ ဘုန်းတော်ကြီးသင် ပညာရေးကျောင်း (၇) ကျောင်း ရှိပါသည်။
ကျန်းမာရေးကက္မာ	
ကျန်းမာရေးဆိုင်ရာ	လှိုင်သာယာ(အရှေ့ပိုင်း) မြို့နယ်တွင် အစိုးရဆေးရုံ (၂) ရုံ၊ ပုဂ္ဂလိကဆေးရုံ (၂) ရုံ၊
အချက်အလက်များ	ဆေးပေးခန်း (၁၁၃)၊ နှင့် ကျေးလက် ကျန်းမာရေးဌာန/ ဌာနခွဲ (၄) ခု ရှိပါသည်။
	ဒေသတွင်း အများဆုံးဖြစ်တတ်သော ရောဂါများမှာ ဝမ်းလျှော၊ တီဘီ၊ ဝမ်းကိုက်၊
	အသည်းရောင် ရောဂါတို့ဖြစ်ပါသည်။
အားကစားနှင့်	လှိုင်သာယာ (အရှေ့ပိုင်း) မြို့နယ်တွင် ဘောလုံးကွင်း (၂)၊ ဘော်လီဘောကွင်း (၂)၊
ဖျော်ဖြေရေးလုပ်ငန်း	ဂေါက်ကွင်း (၁)၊ ရုပ်ရှင်ရုံ (၁)၊ ပန်းခြံ (၁) တို့ဖြစ်ပါသည်။
ဘာသာရေးကက္မ	
ဘာသာရေးဆိုင်ရာ	လှိုင်သာယာ (အရှေ့ပိုင်း) မြို့နယ်ရှိ သာသနိက အဆောက်အဉီများအနေဖြင့် စေတီ (၁)၊
အချက်အလက်များ	ဘုန်းကြီးကျောင်း (၄၆)၊ သီလရှင်ကျောင်း (၂)၊ ဓမ္မာရုံ (၁) ရှိပါသည်။
	ထင်ရှားသော ဘုရား၊ စေတီပုထိုးများမှာ အောင်မြေသာယာဘုရား၊ ရွှေရင်အေးဘုရား
	တို့ဖြစ်ပါသည်။
	•

အရင်းမြစ် - <u>www.gad.gov.mm</u>

### လက်ရှိပတ်ဝန်းကျင်ဆိုင်ရာအခြေအနေများ (အခြေခံအချက်အလက်)

#### လေထုအရည်အသွေး

စက်ရုံဧရိယာတွင် လေထုအရည်သွေးကို အခြေခံအလက်အချက်အနေဖြင့် ကောက်ယူခဲ့ပါသည်။ နေရာ (၇) နေရာသတ်မှတ်ကောက်ယူခဲ့ပါသည်။ ပတ်ဝန်းကျင်ဆိုင်ရာလေ့လာမှုပြုလုပ်သောအဖွဲ့အနေဖြင့် ၂၀၁၈ ခုနစ် မတ်လ တွင် လေထုအရည်အသွေး၊ ရေထုအရည်အသွေးနှင့်ဆူညံသံများကို တိုင်းတာ ကောက်ယူ ဆောင်ရွက်ခဲ့ပါသည်။ ၎င်းတို့၏ နေရာများကို အခန်း(၄)၏ ဇယား ၄.၉ နှင့် ပုံ ၄.၂ တွင် ဖော်ပြထားပါသည်။

သယံဇာတနှင့်သဘာဝပတ်ဝ်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၏ မြန်မာနိုင်ငံအမျိုးသားပတ်ဝန်းကျင် ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ ၂၀၁၅နှင့်နှိုင်းယှဉ်ခဲ့ပြီး ပတ်ဝန်းကျင်လေထု အရည်အသွေး တိုင်းတာမှုတန်ဖိုးကို ဇယား ၄.၁၀ တွင် ဖော်ပြထားပါသည်။

ပတ်ဝန်းကျင်လေထု အမှုန်အမွှားတန်ဖိုးမှာ သတ်မှတ်လမ်းညွှန်ချက် ထက်မြင့်မားသော်လည်း အခြားတန်ဖိုးများမှာ လမ်းညွှန်ချက်အတွင်း ရှိပါသည်။ ပတ်ဝန်းကျင်ရှိလေထုအတွင် အမှုန်အမွှား (PM2.5 နှင့် PM10) မြင့်မားရခြင်းမှာ မော်တော်ယာဉ်များသွားလာမှုနှင့် စက်ရုံဝင်ပေါက်နှင့်လမ်းအနီး ရှိသော ကြောင့်ဖြစ်ပါသည်။ စက်မှုဇုန်အတွင်း တည်ရှိသောကြောင့် စုပေါင်းသက်ရောက်မှုကြောင့်လည်း ဖြစ်နိုင် ပါသည်။ အဆိုပါသက်ရေက်မှုများအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲအစီအစဉ်ပါ အစီရင်ခံစာပါအတိုင်း လိုက်နာလုပ်ဆောင်ရပါမည်။

### ရေထုအရည်အသွေး

ရေအရည်အသွေးနမူနာများကို ကောက်ယူရခြင်းမှာ စီမံကိန်းဇရိယာအတွင်း ရေအရည်အသွေး၏ အခြေခံအချက်အလက်များကို မှတ်တမ်းတင်ရန်ဖြစ်ပါသည်။ စီမံကိန်းဇရိယာတွင် ရေနမူနာကို (၅) နေရာမှ ကောက်ယူခဲ့ပါသည်။ ၎င်းတို့ကို အစီရင်ခံစာ၏ အခန်း (၄)၊ ဇယား ၄.၁၃ နှင့် ပုံ ၄.၅ တွင် ဖော်ပြထား ပါသည်။

နမူနာကောက်ယူခဲ့သည့်တန်ဖိုးများကို ကမ္ဘာ့ကျန်းမာရေးကုသမ္မဂအဖွဲအစည်း၊ ပတ်ဝန်းကျင် ဆိုင်ရာကာကွယ်မှုအေဂျင်စီနှင့် သောက်သုံးရေအတွက် အိန္ဒိယ သတ်မှတ်ချက်များနှင့် နှိုင်းယှဉ်ခဲ့ပါသည်။ သယံဇာတနှင့်သဘာဝပတ်ဝ်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၏ မြန်မာနိုင်ငံအမျိုးသားပတ်ဝန်းကျင် ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ စွန့်ပစ်ရည်စွန့်ပစ်မှုဆိုင်ရာ လမ်းညွှန်ချက်များ နှင့်နှိုင်းယှဉ်ခဲ့ပါသည်။

ရေအရည်သွေးနမူနာများကို Green Myanmar Environmental Services ကုမ္ပကီလီမိတက်နှင့် Ecological Laboratory of Advancing Life and Regenerating Motherland (ALARM) ဓါတ်ခွဲခန်း တို့တွင် တိုင်းတာစစ်ဆေးခဲ့ပါသည်။ တိုင်းတာမှုရလဒ်များကို အစီရင်ခံစာနောက်ဆက်တွဲ (၁၄) တို့တွင် ဖော်ပြထားပါသည်။

ရေနမူနာကောက်ယူအမှတ် (၂၊ ၃၊ ၄၊ ၅) တို့မှတန်ဖိုးများသည် သန့်စင်မှုမပြုလုပ်ခင်အခြေအနေ ကဖြစ်ပြီး စက်ရုံတွင် ရေဆိုးသန့်စင်စက်ကို တည်ဆောက်ပြီးဖြစ်ပါသည်။ ၎င်း ရေများကို ရေဆိုးသန့်စင် ကန်တွင် သန့်စင်ပြီးမှ စည်ပင်သာယာမြောင်းသို့ စွန့်ပစ်သွားမည် ဖြစ်ပါသည်။

# စွန့်ပစ်ရည်အရည်အသွေး

စွန့်ပစ်ရည်နမူနာကောက်ယူရခြင်းမှာ စီမံကိန်း၏ ဧရိယာအတွင်း ရေအရည်အသွေး၏ အခြေခံ အချက်အလက်များကို မှတ်တမ်းတင်ရန်ဖြစ်ပါသည်။ အဆိုပြုစက်ရုံတွင် စွန့်ပစ်ရည်နမူနာ (၃) နေရာမှ ကောက်ယူစစ်ဆေးခဲ့ပါသည်။ ၎င်းရလဒ်များကို မြန်မာနိုင်ငံအမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ စွန့်ပစ်ရည်စွန့်ပစ်မှုဆိုင်ရာ လမ်းညွှန်ချက်များ နှင့်နှိုင်းယှဉ်ခဲ့ပါသည်။

ရေအရည်သွေးနမူနာများကို Green Myanmar Environmental Services ကုမ္ပကီလီမိတက်နှင့် Ecological Laboratory of Advancing Life and Regenerating Motherland (ALARM) ဓါတ်ခွဲခန်းတို့တွင် တိုင်းတာစစ်ဆေးခဲ့ပါသည်။ တိုင်းတာမှုရလဒ်များကို အစီရင်ခံစာနောက်ဆက်တွဲ (၁၅၊ ၁၆) တို့တွင် ဖော်ပြထားပါသည်။

စွန့်ပစ်ရည်တိုင်းတာမှုအမှတ်-၁ (ထုတ်လုပ်မှုလုပ်ငန်းစဉ်မှထွက်ရှိမှု)၊ စွန့်ပစ်ရည်တိုင်းတာမှုအမှတ်-၂ (စွန့်ပစ်ရည်သန့်စင်ကန်သို့အဝင်) တို့၏ တန်ဖိုးများသည် သန့်စင်ခြင်း မပြုလုပ်ရခြင်း တန်ဖိုးများဖြစ်ပြီး စက်ရုံတွင် ရေဆိုးသန့်စင်ကန်ကို တပ်ဆင်ထားပြီးဖြစ်ပါသည်။ ၎င်း ရေများကို ရေဆိုးသန့်စင်ကန်တွင် သန့်စင်ပြီးမှ စည်ပင်သာယာမြောင်းသို့ စွန့်ပစ်သွားမည် ဖြစ်ပါသည်။

စွန့်ပစ်ရည်တိုင်းတာမှုအမှတ်-၃ (စွန့်ပစ်ရည်သန့်စင်ကန်မှအထွက်) သည် ရေဆိုးများကို သန့်စင်ပြီး တန်ဖိုးများဖြစ်ပါသည်။ BOD, COD, Coliform တန်ဖိုးများသည် သတ်မှတ်လမ်းညွှန်ချက်များထက် အနည်းငယ် ကျော်လွန်ပြီး ကျန်သောတန်ဖိုးများသည် သတ်မှတ်ချက် အတွင်းရှိပါသည်။ ရေဆိုးစွန့်ပစ်မှု အတွက် NEQG လမ်းညွှန်ချက် သတ်မှတ်ချက်အတွင်း ရရှိစေရန် ဆက်လက်ဆောင်ရွက် သွားမည် ဖြစ်ပါသည်။

### ဆူညံသံအဆင့်

အဆိုပြုစက်ရုံဧရိယာတွင် ဆူညံသံတိုင်းတာခြင်းကို နေရာ (၃) နေရာ ရွေးချယ်ခဲ့ပါသည်။ တိုင်းတာခဲ့သောနေရာ (၁၊ ၆၊ ၇) တို့ကို ဇယား ၄.၂၁ နှင့် ပုံ ၄.၈တွင် ဖော်ပြထားပါသည်။ ဆူညံသံ တိုင်းတာမှုအတွက် ဆူညံသံတိုင်းတာခြင်းစက် (SD-4033SD) ကိုအသုံးပြုခဲ့ပါသည်။ ၎င်းတို့၏ တန်ဖိုးများ ကို ဇယား ၄.၂၂ တွင်ဖော်ပြထားပါသည်။

ဇယား ၄.၂၂ အရ ဆူညံသံတိုင်းတာမှုများကို မြန်မာနိုင်ငံအမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များအရ ပတ်ဝန်းကျင်ဆိုင်ရာအတွက် 70 dBA ဖြစ်ပြီး လူနေထိုင်မှုပတ်ဝန်းကျင်အတွက် 55 dBA ဖြစ်ပါသည်။ ပတ်ဝန်းကျင်ဆိုင်ရာအတွက် ဆူညံသံ တိုင်းတာမှု (တိုင်းတာမှုအမှတ်-၁) တန်ဖိုးမှာ လမ်းညွှန်ချက်တန်ဖိုးထက် အနည်းငယ် ကျော်လွန်လျှက်ရှိပါသည်။ ထိုသို့ ဖြစ်ရခြင်းမှာ ပတ်ဝန်းကျင်လမ်းပေါ်မှ မော်တော်ယာဉ်များသွားလားခြင်းကြောင့်ဖြစ်ပါသည်။

လုပ်ငန်းခွင်ဆူညံသံတိုင်းတာမှုအတွက် ပျမ်းမှု ၁ နာရီ သတ်မှတ်ချက်မှာ (အမေရိကန်စံနှုန်း သတ်မှတ်ချက်) မှာ 105 dBA ဖြစ်ပါသည်။ လုပ်ငန်းခွင်ဆူညံသံတိုင်းတာမှုအမှတ်-၆ (ရောနှောအခန်း)၊ နှင့် တိုင်းတာမှုအမှတ်-၇ (ဘွိုင်လာအခန်း) တို့ ရှိ တန်ဖိုးများသည် အမေရိကန် OHS သတ်မှတ်ချက်များထက် လျော့နည်းပါသည်။

### မြေထုအရည်အသွေး

ပုံ-၉ တွင်ပြထားသည့်အတိုင်း စီမံကိန်းဒရိယာရှိ ဘွိုင်လာအခန်းဘေးမှ မြေနမူနာ ကောက်ယူခဲ့ပါသည်။ GMES Co., Ltd ၏ ဓါတ်ခွဲခန်းသည် pH, Chloride, Total Iron, Aluminum ကဲ့သို့သော ပါရာမီတာများကို တိုင်းတာခဲ့ပါသည်။ မြေနမူနာကောက်ယူအမှတ်ကို ပုံ ၄.၉တွင် ပြသထားပြီး တန်ဖိုးကို ဇယား ၄.၂၃ တွင် ဖော်ပြထားပါသည်။

ဇယား ၄.၂၃ အရ တိုင်းတာမှုတန်ဖိုးများသည် စီမံကိန်းလက်ရှိမြေဆီလွှာအရည်အသွေးများဖြစ်ပြီး အသီးအရွက်များစိုက်ပျိုးနိုင်ပြီး မြေဆီလွှာကောင်းမွန်ပါသည်။ ထို့ကြောင့် လက်ရှိမြေဆီလွှာသည် ညစ်ညမ်း မှုမရှိဟု ကောက်ချက်ချနိုင်ပါသည်။ အဆိုပြုစီမံကိန်းအတွက် မြေနမူနာများကို ကောက်ယူခဲ့ခြင်းဖြစ် ပါသည်။

အမျိုးအစား	ဖော်ပြချက်များ	သတ်မှတ်ချက်
လစ်လျူရှုနိုင်	သက်ရောက်မှုသည် မရှိနိုင် (သို့) များပြားလှပြီး မည့်သည့်သက်ဆိုင်မှုအတွက်မျှ (သို့) အနည်းငယ်မျှ အရေးမကြီးပဲ လျစ်လျူရှု နိင်သည်။	< ان
နည်းပါး	သက်ရောက်မှုသည် အတိုင်းအတာအကန့်အသတ်ရှိပြီး ပြင်းထန်မှုနည်းသော အလယ်အလတ်၊ ယင်း၏ဖြစ်နိုင်ချေသည် မည်သို့ပင်ဖြစ်စေ သက်ရောက်မှုသည် ဆုံးဖြတ်ချက်အပေါ် အကျိုးသက်ရောက်မှုရှိမည်မဟုတ်သည့်အပြင် ကုန်ကျ စရိတ် တိုးလာသဖြင့် ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှု လိုအပ်နိုင်ဖွယ်ရှိသည်။	< 90

ဇယား (၁၂) သိသာထင်ရှားမှုများအဆင့်

Manufacturing and Distribution of Various Types of Jellies

အမျိုးအစား	ဖော်ပြချက်များ	သတ်မှတ်ချက်	
အသင့်အတင့်	သက်ရောက်မှုသည် တစ်ခု (သို့) တစ်ခုထက်ပိုသော သက်ဆိုင်သူများအတွက် အရေးကြီးပြီး ၎င်း၏ပြင်းထန်မှုမှာ အလယ်အလတ် (သို့)မြင့်မားမည်ဖြစ်ပါသည်။ ထို့ကြောင့် သက်ရောက်မှုသည် ဆုံးဖြတ်ချက်ကို ရုပ်ပိုင်းဆိုင်ရာအရ သက် ရောက်မှုရှိနိုင်ပြီး ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲရေးတွင်လိုအပ်မည် ဖြစ်ပါသည်။	< ၆၀	
မြင့်မား	သက်ရောက်မှုသည် ဖွံ့ဖြိုးတိုးတက်ရေးဆိုင်ရာ ရွေးချယ်စရာများကို အငြင်း ပွားဖွယ်ဖြစ်စေနိုင်သည် (သို့) ၎င်းကို လက်ခံနိုင်သောအဆင့်သို့ လျော့ချနိုင်ခြင်း မရှိပါက အဆိုပြုစီမံကိန်းကို လက်ခံနိုင်မည်မဟုတ်ပါ။ (သို့) ပတ်ဝန်းကျင် ဆိုင်ရာသိသာထင်ရှားမှုများ၏ အရေးကြီးသော အချက်ဖြစ်ပါသည်။	> Go	
ဖော်ပြချက်	သက်ရောက်မှုများ၏အဆင့်		
ကောင်းကျိုး (+)	ကောင်းကျိုးသက်ရောက်မှုများ		
ဆိုးကျိုး (-)	သက်ရောက်နိုင်မှုများ		
ဆိုးကျိုးသက်ရေက်နိုင်မှုများအတွက် (-) နှင့်ကောင်းကျိုးသက်ရောက်မှုအတွက် (+)			

အနိမ့်မှအမြင့်အထိ အဆင့်သတ်မှတ်ထားသော အကျိုးသက်ရောက်မှုများ၏ အရေးပါပုံ ကို အောက်ဖော်ပြပါ ဇယားတွင် သက်ရောက်မှုပြင်းအား၏ ရှင်းလင်းချက်နှင့်လိုအပ်သော အဆိုပြုထား သော လျော့ပါးရေးအစီအမံများ၏ အတိုင်းအတာကို ထင်ဟပ်စေသည့် လမ်းညွှန်ချက်ဖြင့် ညွှန်ပြ ထားပါသည်။

သက်ရောက်မှု	ညစ်ညမ်းမှု များ	ကြာရိုန်	အကွာအ ဝေး	ပြင်းအား	ဖြစ်နိုင်ချေ	တန်ဖိုး	သိသာ ထင်ရှားမှု အဆင့်
		00	လထုအရည်ေ	သွး			
ထုတ်လုပ်မှု လုပ်ငန်းစဉ်	PM, အမှုန်အမွှား	ကာလ ရှည် (4)	စီမံကိန်း (1)	နည်း (2)	အတိကျ ဖြစ်(x5)	(35)	နိမ့် (ဆိုးကိျုံး)
မီးစက်	CO, CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>x</sub> ,	ကာလတို (1)	ဒေသအ တွင်း (2)	<sub>န</sub> ည်း (2)	အတိကျ ဖြစ်(x5)	(25)	နိမ့် (ဆိုးကိျုံး)
ဘွိုင်လာ	PM, SOx, NOx, COx	ကာလ ရှည် (4)	စီမံကိန်း (1)	အသင့် အတင့် (6)	အတိကျ ဖြစ်(x5)	(55)	အလယ် အလတ် (ဆိုးကိျိုး)
မော်တော် ယာဉ်များ	SOx, NOx, COx	ကာလ အလယ် အလတ် (3)	ဒေသအ တွင်း (2)	နည်း(2)	ဖြစ်နိုင်ချ (x2)	(14)	လျစ်လျူရှ
ရေထုအရည်အသွေး							
အထွေထွေသုံးရေ	pH, BOD, COD, TSS,	ကာလ အလယ်	စီမံကိန်း (1)	အသင့်အ တင့်(6)	အတိကျ ဖြစ်(x5)	(35)	နိမ့် (ဆိုးကျိုး)

ဇယား(၁၃) သက်ရောက်မှုများ၏သိသာထင်ရှားမှု (လုပ်ငန်းလည်ပတ်ခြင်းကာလ)

#### Manufacturing and Distribution of Various Types of Jellies

	TDS, Oil & Grease	အလတ် (3)					
ထုတ်လုပ်မှုမှ စွန့်ပစ်ရည်	BOD,COD, TSS, TDS, color, Oil & Grease, pH	ကာလ ရှည် (4)	ဒေသအ တွင်း (2)	အသင့်အ တင့် (6)	အတိကျ ဖြစ်(x5)	(60)	အလယ် အလတ် (ဆိုးကျိုး)
		ଧିକ	ပစ်ပစ္စည်းစွန့်ဖ	ပစ႖			
အန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်း	ရေထုနှင့် မြေထု		စီမံကိန်း (1)	နည်း (2)	အတိကျ ဖြစ်(x5)	(30)	
အန္တရာယ်မရှိ စွန့်ပစ်ပစ္စည်း	ရေထုနှင့် မြေထု	ကာလ အလယ် အလတ်	စီမံကိန်း (1)	နည်း (2)	အတိကျ ဖြစ်(x5)	(30)	နိမ့် (ဆိုးကိျိုး)
အထွေထွေ စွန့်ပစ်ပစ္စည်း	ရေထုနှင့် မြေထု	— ౩ఁురా - (3)	စီမံကိန်း (1)	နည်း (2)	အတိကျ ဖြစ်(x5)	(30)	(જીવજી જેવી)
			ဆူညံသံ		1		
မော်တော်ယာဉ် နှင့် ထုတ်လုပ်မှု လုပ်ငန်းသုံးစက်	အလုပ်များ၏ ကျန်းမာရေး	ကာလတို (1)	စီမံကိန်း (1)	နည်း (2)	အတိကျ ဖြစ်(x5)	(20)	နိုမ့် (ဆိုးကျိုး)
မီးစက်များ မောင်းနှင့်ခြင်း	ှနှင့် ပတ်ဝန်းကျင်	ကာလတို (1)	စီမံကိန်း (1)	နည်း (2)	အတိကျ ဖြစ်(x5)	(20)	နိမ့် (ဆိုးကိျုး)
		e e	ားဘေးအန္တရာဖ	ယ်			
လျှပ်စစ် ရှော့၊ ဆီမတော်တဆယို စိမ့်ခြင်း၊ ဆေးလိပ် သောက်ခြင်း	PM, အမှုန်အမွှား နှင့်ပေါက်ကွဲ နိုင်ခြင်း	အမြဲတမ်း	ဒေသတွင် း (2)	များ (8)	အတိကျ ဖြစ်(x5)	75	မြင့် (ဆိုးက <del>ျိုး</del> )
		အရေးပေါ	၊်အန္တရာယ်				
ရေကြီးခြင်း၊ မုန်တိုင်းတိုက်ခြင်း၊ ဒီရေတက်များခြင်း၊ ငလျင်လှုပ်ခြင်း	လေထု၊ ရေ ထု၊ မြေထုနှင့် လူသားကျန်း မာရေး	ကာလတို (1)	နယ်မြေ ဒေသ တွင်း(3)	မြင့် (8)	ဖြစ်နိုင်ချေ (x2)	24	နိမ့် (ဆိုးကျိုး)
စက်ပစ္စည်းများကိုင်တွယ်ခြင်းဆိုင်ရာဘေးအွန္တရာယ်							
လျှပ်စစ်ရှော့၊ စက်ပစ္စည်းတပ် ဆင်မှုချို့ယွင်းခြင်း၊ ဘွိုင်လာနှင့်လေဖိ အားစက်များကို ပုံမှန်မစစ်ဆေးခြင်း	အလုပ်သမား များ၏ကျန်းမာ ရေးနှင့် ပတ်ဝန်းကျင်	အမြံတမ်း (5)	కె 2 . కె 2 . కె 2 . కె 2 . (2)	မြင့် (8)		75	မြင့် (ဆိုးကျိုး)

Green Myanmar Environmental Services Co., Ltd.

#### Manufacturing and Distribution of Various Types of Jellies

		နယ်မြေ	ဒေသအတွင်းပိ	စီးပွားရေး			
အလုပ်အကိုင် အခွင့်အလမ်းများ	ဒေသခံပြည် သူများတွက် အလုပ်အကိုင် အခွင့်အလမ်း ပံ့ပိုးနိုင်ခြင်း	ရေရှည် (4)	ဒေသတွင်း (2)	အသင့် အတင့် (6)	ജ്ഞജന്വ (x5)	60	မြင့် (ကောင်း က <del>ျ</del> ိုး)

### လုပ်ငန်းလည်ပတ်ခြင်းကာလလျော့နည်းစေရေးနည်းလမ်းများ

Thai Faster Products and M.K ကုမ္ပဏီလီမိတက်၏ ဂျယ်လီစက်ရုံအတွက် လုပ်ငန်း လည်ပတ်ခြင်းကာလ သက်ရောက်မှုများ၏ လျော့နည်းစေရေးအကျဉ်းချုပ်ကို အောက်ပါဇယားတွင် ဖော်ပြ ထားပါသည်။

ဇယား (၁၄) လုပ်ငန်းလည်ပတ်ခြင်းကာလ လျော့နည်းစေရေးနည်းလမ်းများ

လုပ်ဆောင်မှုများ ၁။ လေထုညစ်ညမ်းခြင်း	ပတ်ဝန်းကျင် အပေါ် သက်ရောက်မှု	လျော့နည်းစေရေးနည်းလမ်းများ	နောက်ဆုံး သက်ရောက်မှု
ထုတ်လုပ်မှုလုပ်ငန်းစဉ်၊ ဘွိုင်လာ၊ မီးစက်နှင့် မော်တော်ယာဉ်များ သွားလာမှု	လေထုအရည် အသွေး	<ul> <li>လေဝင်လေထွက်ကောင်းမွန်ပြီး ရှင်းလင်း စေရေန် ဆောင်ရွက်ရမည်။</li> <li>လောင်ကျွမ်းမှုအားကောင်းပြီးမီးခိုးထွက်ရှိ မှုနည်းသော ဂျင်နဂေုတာ အမျိုးအစားကို ရွေးချယ်ရမည်။</li> <li>စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင် ထိန်းသိမ်း မှုပြုလုပ်ရန်</li> <li>သယ်ယူပို့ဆောင်ရေးကုန်ကြမ်း၊ကုန်ချော များအတွက် လေ့ကျင့် သင်ကြားထား သော ခွင့်ပြုထားသောသူများ ဖြစ်ရမည်။</li> <li>မှတ်တမ်းများထိန်းသိမ်း ထားရမည်။</li> </ul>	သင့်လျော်သော ပြုပြင်ထိန်းသိမ်းမှု များ ဆောင်ရွက်သွား ပါက လျော့နည်းပါမည်။
		၂။ စွန့်ပစ်အမှိုက်	
ဖယောင်းခံလှိုင်းတွန့် သေတ္တာများ၊ ဖော့ခံများ၊ ရေစိုခံပလပ်စတစ်အကာ များ၊ ကြိုးများ နှင့် ဖော့ဘူးများ အစရှိသည့် ထုပ်ပိုးပစ္စည်းများ	မြေဆီလွှာ	<ul> <li>၄င်းအရာဝတ္ထုများကို ခွဲထုတ်ရောင်းချပြီး အများ အကျိုးအတွက် ပြန်လည် လှူုဒါန်းခြင်း</li> <li>ဓါတုပစ္စည်းများကိုင်တွယ်ခြင်းနှင့် သိုလှောင်ခြင်းအတွက် သက်ဆိုင်ရာ ဝန်ထမ်းများအား သင်တန်းအစီအစဉ် ပံ့ပိုးပေးခြင်း</li> </ul>	စက်ရုံနှင့်အနီး ပတ် ဝန်းကျင် သက်ရောက်မှု အတွက်လျော့ နည်း စေပါသည်။
		၃။ စွန့်ပစ်ရည်	
ထုတ်လုပ်မှုလုပ်ငန်းစဉ် နှင့်အရြား	ရေထု အရည်အသွေး	<ul> <li>စွန့်ပစ်အညစ်အကြေးများကို ခွဲခြားသတ် မှတ်ခြင်းအားလုပ်ဆောင်မည်ဖြစ်ပါသည်။</li> </ul>	သက်ရောက်မှုလျေ ာ့နည်းခြင်း။ စွန့်ပစ်

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

အထောက်အပံ့များ		<ul> <li>ညစ်ညမ်းမှုလျော့နည်းစေရန်သန့်စင်မှု ပြုလုပ်ရပါမည်။</li> <li>သန့်စင်မှုပြုလုပ်ပြီးရေများကို စိမ်းလန်း စိုပြေရေး၊ ဥယျာဉ် စိုက်ပျိုးခြင်းနှင့် မီးငြိမ်း သတ်ခြင်းနေရာများတွင်အသုံးပြုပါမည်။ အထွေထွေသုံးရေများကို မိလ္လာကန် ထဲသို့စွန့်ပစ်ပါမည်။</li> </ul>	ရာတွင် သန့်စင်ပြီးမှ စွန့်ပစ်ရန်နှင့် စွန့်ပစ် ရည်ထွက်ရှိမှုကိုပုံမှ န်စောင့်ကြည့်ခြင်း။	
	<b>9</b>	အွန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းများ		
ဆိုးဆေး၊ အနံ့ရည်များနှင့် အရောင်ဓာတုများ	ရေထုနှင့် မြေဆီလွှာ	<ul> <li>၁။ အသုံးပြု၊ ရောစပ်သော နေရာများကို ပျော်ဝင်ခြင်း၊ စိမ့်ခြင်းမရှိစေရန် စိမ့်မဝင်နိုင်သည့် မျက်နှာပြင်များပြုလုပ်ခြင်း</li> <li>၂။ စွန့်ပစ်ပစ္စည်း ပမာကကို မှတ်တမ်းတင် ထိန်းချုပ်ခြင်း</li> <li>၃။ ဘူးခွံနှင့်ပုံးအလွတ်များကို ရောင်းချခြင်း</li> </ul>	ကြိုတင်ကာကွယ် မှုများကြေင့် ထိခိုက်မှုနည်းပါးမ ည် ဖြစ်သည်	
	ေ	)။ ဆူညံသံများထွက်ရှိခြင်း		
စက်ရုံလည်ပတ်မှုမှ အသံ	စက်ရုံဖရိယာနှင့် ပတ်ဝန်းကျင်	<ul> <li>၁။အသံတိုးတိတ်စေရန် ကြိုတင် ပြုပြင်ထိန်းသိမ်းခြင်း</li> <li>၂။အသံရိုက်ခတ်မှုမြင့်မား သော နေရာများတွင် နားကြပ်/နားဆို့ အစရှိသော အကာအကွယ် ကိရိယာ(PPE)များ အသုံးပြုခြင်း</li> </ul>	ပြုပြင်ထိန်းသိမ်းမှုန င့် PPE များ အသုံးပြုရြင်းကြော င့် ထိခိုက်မှု နည်းပါးမည်	
	၆။ ကုန်ကြမ်း	းနှင့်ကုန်ချောပစ္စည်းများသိုလှောင်ခြင်း		
ကုန်ကြမ်းပစ္စည်းများ သိုလှောင်ခြင်း	လေထု၊ ဘေးအွန္တရာယ်	<ul> <li>၁။ သင့်တော်သောသိုလှောင်နေရာများ ထားခြင်း</li> <li>၂။ သင်တော်သော မှတ်တမ်း ထားရှိခြင်း</li> <li>၃။ လေဝင်လေထွက် ကောင်းမွန်၍သွားလာ ရလွယ်ကူရန်ထားရှိခြင်း။</li> </ul>	ကောင်းမွန်စွာ ကိုင်တွယ်မှုရှိမည် ဖြစ်သောကြောင့် ထိခိုက်မှု နည်းပါးမည်	
၇။ စက်ပစ္စည်းများကိုင်တွယ်ခြင်းဆိုင်ရာဘေးအွန္တရာယ်				
လုပ်ငန်းခွင်လုပ်သားများ ၏ ကျန်းမာရေးနှင့် ဘေးအွန္တရာယ်	လုပ်ငန်းခွင် လုပ်သားများ ကျန်းမာရေးနှင့် ဘေးအွန္တရာယ် အပေါ် သက်ရောက်ခြင်း	<ul> <li>အန္တရယ်ဖြစ်နိုင်စေသော စက်ပစ္စည်းကို အကာအကွယ်တပ်ဆင်ခြင်း နှင့်လုပ်ဆောင်မှုစနစ်ပုံမှန်စစ်ဆေးခြင်း</li> <li>သက်ဆိုင်ရာဝန်ထမ်းများကို ဘေး အန္တရာယ် ကင်းဝေးရေးသင်တန်းပို့ချခြင်း</li> <li>မလိုလားအပ်သော မတော်တဆမှုများကို ရှောင်ကြဉ်ခြင်း</li> </ul>	စက်ရုံနှင့်အနီး ပတ် ဝန်းကျင်သက်ရော က် မှု အတွက်လျော့ နည်း စေပါသည်။	

Manufacturing and Distribution of Various Types of Jellies

		၈။ မီးဘေးအန္တရာယ်	
သတိမမူကိုယ်တွယ်ခြင်း မှ လောင်စာဆီ မတော်တဆယိုဖိတ်ခြင်း၊ မီးဘေးအွန္တရာယ်ကို ပေ့ါဆခြင်း၊ ကုန်ကြမ်းနှင့် ကုန်ချောပစ္စည်းများ မှားယွင်းစွာ သိုလှောင် မှုများ	စက်ရုံဇရိယာနှင့် ပတ်ဝန်းကျင်	<ul> <li>မီးလှန့်ဇာတ်တိုက်မှု ကောင်းမွန်စွာ လုပ်ဆောင်ခြင်း။</li> <li>စက်ရုံရှိ လိုအပ်သောနေရာတိုင်းတွင် မီးသတ်ဆေးဘူးများထားရှိခြင်း။</li> <li>မီးသတ်ဆေးဘူးများသက်တမ်းကုန်ဆုံးမှု နှင့်လုပ်ဆောင်မှုများကို ပုံမှန်စစ်ဆေးခြင်း</li> <li>အလွယ်တကူမီးလောင်လွယ်သောပစ္စည်း များနှင့်ဝေးရာတွင် ဆေးလိပ်သောက်ခြင်း နေရာ သီးသန့် သတ်မှတ်ထားခြင်း။</li> </ul>	စက်ရုံနှင့်အနီးပတ် ဝန်းကျင် သက်ရောက်မှု အတွက်လျော့နည်း စေပါသည်။
	ତା	စိမ်းလန်းစိုပြေမှုအစီအစဉ်	
စိမ်းလန်းစိုပြေမှု အစီအစဉ်များ	စက်ရုံဧရိယာနှင့် ပတ်ဝန်းကျင်	စက်ရုံဒရိယာနှင့်ပတ်ဝန်းကျင်တွင် စိမ်းလန်းစိုပြေမှုအစီအစဉ်များကို ဖွံ့ဖြိုးစေရန်ဆောင်ရွက်ခြင်း	လေထု၊ မြေထု နှင့် ဆူညံသံ သက်ရောက်မှု လျော့နည်းမည်။
	0	ာ။ လူမှုစီးပွားပတ်ဝန်းကျင်	
အလုပ်အကိုင် အခွင့်အလမ်း	လူမှုရေး၊ စီးပွားရေး	<ul> <li>ဒေသင်္ခပြည်သူများ၏ အလုပ်အကိုင်</li> <li>ဝန်ဆောင်မှုကဏ္ဍနှင့်ထောက်ပံ့သူများထံ သို့သွယ်ဝိုက်သော အလုပ်အကိုင်များ</li> <li>မတူညီသော ဝန်ဆောင်မှုများအတွက် ဒေသခံဒေဂျင်စီများအား စာချုပ်ပုံစံကဲ့သို အကျိုးခံစားခွင့်များ</li> <li>ကျွမ်းကျင်ဝန်ထမ်းများ၊ အလယ်အလတ် နှင့်အခြားဝန်ထမ်များ</li> </ul>	စီးပွားရေးနှင့်လူမှုရေ ရးဆိုင်ရာများ အကျိုးဖြစ်ထွန်း စေမည်။

### ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်

Thai Faster Products and M.K Company Limited သည် အောက်ဖော်ပြပါ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်များအတိုင်း လိုက်နာလုပ်ဆောင်မည် ဖြစ်ပါသည်။

# «ယား (၁၅) ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (လုပ်ငန်းလည်ပတ်ခြင်းကာလ)

#### လေထုညစ်ညမ်းမှုစီမံခန့်ခွဲမှုအစီအစဉ်

လေထုအရည်အသွေးညစ်ညမ်းမှုအတွက် ညစ်ညမ်းစေသည့် အရင်းအမြစ်နှင့်ပမာဏကို
လျှော့ချရန်
နိုင်ငံတော်မှ ထုတ်လွှတ်မှုလမ်းညွှန်ချကမျာကို လိုက်နာရန်
လေထုအရည်အသွေးကောင်းမွန်စေရန် စိမ်းလန်းစိုပြေဒရိယာ ထားရှိရန်
စက်ယွန္တရားများနှင့်မီးစက်များကို ပုံမှန်စစ်ဆေးခြင်းနှင့်စီစဉ်ထိန်းသိမ်းရန်
အမှုန်အမွှားထွက်ရှိမှု လျှော့ချရန် စက်ရုံအတွင်း ကောင်းမွန်သော ထိန်းသိမ်းမှုများထားရှိရန်
မီးလောင်ကျွမ်းခြင်းမရှိစေရန် စွန့်ပစ်ပစ္စည်းများကိုဖွင့်ထားခြင်းမပြုရ
လေဝင်လေထွက်စနစ်နှင့် အမှုန်ထွက်ရှိမှုစနစ်ကို ကောင်းမွန်စွာတပ်ဆင်ထားရန်
အမှုန်အမွှားထွက်ရှိသော နေရာတွင် လုပ်ကိုင်သောဝန်ထမ်းများအား နှာခေါင်းစည်း တပ်ဆင်

Green Myanmar Environmental Services Co., Ltd.

#### Manufacturing and Distribution of Various Types of Jellies

	ပေးပါ။ အမှုန်များကိုအလေးချိန်ချိန်တွယ်ရာတွင် ဂရုတစိုက် ကိုင်တွယ်စေရန် ညွှန်ကြားရန်။ မြေလွတ်နေရာများကို မြက်ခင်းများ (သို့) ကွန်ကရိများဖြင့် ထားရှိရန်။ ဂျင်နရေတာ (မီးစက်) အိတ်ဇောကို လူများနေထိုင်ရာနှင့်ဝေးရာသို့ဦးတည်ထားရန် ဘွိုင်လာခေါင်းတိုင်မှ အမှုန်အမွှားထွက်ရှိမှုနည်းစေရန် ခေါင်းတိုင်တွင် ရေဖြန်းခြင်း ကဲ့သို့သော စနစ် ဆောင်ရွက်ရမည်။
	ဘွိုင်လာမှထွက်ရှိလာသောပြာများကို ပြန့်လွင့်မှုမရှိစေရန် စနစ်တကျစုဆောင်းရမည်။
တာဝန်ရှိအဖွဲ	ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအဖွဲ့နှင့်အဖွဲ့ဝင်များ
တာဝန်	လေထုညစ်ညမ်းမှုစီမံခန့်ခွဲရေးအစီအစဉ်ကို အကောင်အထည်ဖော် ဆောင်ရွက်ရန် သတ်မှတ်ထားသည့် လေထုအရည်အသွေးကို စောင့်ကြည့်ရန်အတွက် ပတ်ဝန်းကျင်ဆိုင်ရာ ကန်ထရိုက်တာများထံဆက်သွယ်ရန် လေထုအရည်အသွေး စောင့်ကြည့်ခြင်းရလဒ်များကို စီမံခန့်ခွဲသူများထံ သတင်းပို့ပြီး မှတ်တမ်း များကို သိမ်းဆည်းရန် သင့်လျော်သောအချိန်တွင် လေထုအရည်အသွေးနှင့်ပတ်သက်၍ အများပြည်သူများကို အသိ ပေးရန်

### စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုအစီအစဉ်

ရည်ရွယ်ချက်	မြေထုနှင့်ရေထုညစ်ညမ်းမှုမှ ကာကွယ်ရန် ထွက်ရှိလာသော အစိုင်အခဲစွန့်ပစ်အမှိုက်များကို စနစ်တကျစွန့်ပစ်ရန် နိုင်ငံတော်အစိုးရမှ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာမူဝါဒကို လိုက်နာရန်
စီမံခန့်ခွဲမှု အစီအစဉ်	အန္တနာယိရှိစွန့်ပစ်ပစ္စည်း           သို့လှောင်ခြင်း           • အန္တနာပေဖြစ်စေနိုင်သည်ဖြစ်စေ မရှိသည်ဖြစ်စေ အမှိုက်များလွင့်စင်သွားခြင်းနှင့် မြေမျက်နှာ ပြင် (သို့) မြေအောက်ရေထဲသို့ စိမ့်ဝင်ခြင်းမှ ကာကွယ်ရန် အမှိုက်အားလုံးကို ထိန်းသိမ်းရ ပါမည်။ အန္တနာယ်ရှိသောစွန့်ပစ်ပစ္စည်းများသည် `` အန္တနာယ်ရှိသောအမှိုက်´´´ ဟူသော စကား လုံးဖြင့် ရှင်းလင်းစွာ တံဆိပ်ကပ်ထားသော အမှိုက်ထည့်စရာများ (သို့) သိုလှောင်ကန်များတွင် ဖြစ်ရမည်။ လုပ်ငန်းခွင်တွင် အန္တနာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများ သိမ်းဆည်းရန်အတွက် ပမာဏ နှင့် အချိန်ကန့်သက်ချက်များသည် မျိုးဆက် အမျိုးအစား အလိုက် ကွဲပြားသည်။ ကိုင်တွယ်ခြင်း           • ဝန်ထမ်းများအားလုံးကို ဘေးအန္တနာယ်ကင်းရှင်းရေးကိုင်တွယ်ပုံလမ်းညွှန်ချက် (Safety Data Sheet) ပါအတိုင်း အန္တနာယ်ရှိပစ္စည်းများ ကိုင်တွယ်သည့်အခါတွင် သင့်လျော်သော တစ်ကိုယ် ရည်သုံးအကာအကွယ်ပစ္စည်း (PPE) ဝတ်ဆင်ရမည်။           • စွန့်ပစ်ခြင်း           • အွန္ဒရယ်ရှိသော စွန့်ပစ်အမှိုက်များကို တရားဝင်ခွင့်ပြုထားသော အဖွဲအစည်း/ ရန်ကုန် မြို့တော်စည်ပင်သာယာရေးကော်မတီ ကဲ့သို့သော အဖွဲ့အစည်းများထံ စွန့်ပစ်ရမည်။ စွန့်ပစ် အမှိုက်ပမာကကိုလည်း မှတ်တမ်းတင်ထားရမည်။
စီမံခန့်ခွဲမှု အစီအစဉ်	ဘေးအွန္တရာယ်မရှိသောစွန့်ပစ်ပစ္စည်း သိုလှောင်ခြင်း • အွန္တရာယ်မရှိသော စွန့်ပစ်အမှိုက်များကို ပတ်ဝန်းကျင်သို့ စွန့်ထုတ်ခြင်းမှ ကာကွယ်ရန် လုပ်ငန်းခွင်အတွင်း စွန့်ပစ်အမှိုက်ပမာဏများ နောက်ထပ်သိမ်းဆည်းနိုင်ရန်အတွက် အချိန်မီ စွန့်ပစ်ရမည်။ အွန္တရာယ်မရှိသော စွန့်ပစ်ပစ္စည်းများနှင့်အသုံးပြုခြင်းမရှိသော ပစ္စည်းများကို

#### Manufacturing and Distribution of Various Types of Jellies

	လေထု၊ ပတ်ဝန်းကျင်မြေထု (သို့) ရေထုအတွင်းယိုစမ့်ခြင်းမရှိစေရန် အကာကွယ်ထား ရှိရမည်။
	<b>စွန့်ပစ်ခြင်း</b> • အွန္တရာယ်မရှိသော စွန့်ပစ်အမှိုက်များကို ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ ကဲ့သို့ သော ခွင့်ပြုထားသည့်အဖွဲအစည်းများထံ စွန့်ပစ်ရမည်။ အမှိုက်ပမာဏကို မှတ်တမ်းတင် ရမည်။
တာဝန်ရှိအဖွဲ့	ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအဖွဲ့နှင့်အဖွဲ့ဝင်များ
တာဝန်	<ul> <li>စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်ကို အကောင်အထည်ဖော်ရန်သေချာစေရန်။</li> <li>စွန့်ပစ်အမှိုက်များကို သင့်လျော်စွာ ခွဲခြားထားခြင်း ရှိ/ မရှိ စောင့်ကြည့်စစ်ဆေးရန်။</li> <li>စွန့်ပစ်ပစ္စည်းများ စွန့်ပစ်မှုကို စစ်ဆေးရန်နှင့် မှတ်တမ်းတင်ထားရန်။</li> <li>စွန့်ပစ်ပစ္စည်းများကျောင့် ပတ်ဝန်းကျင်ကို ညစ်ညမ်းမှုမဖြစ်စေရန်။</li> </ul>
	ဆီးခင်ခဲ့ဟာစီကရင်

#### **ဆူညံသံညစ်ညမ်းမှုစီမံခန့်**ခွဲမှုအစီအစဉ်

	• စက်ရုံဧရိယာနှင့်ပတ်ဝန်းကျင်၏ ဆူညံသံကို လျှော့ချရန်။				
ရည်ရွယ်ချက်	• အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များနှင့် လုပ်ငန်း				
	ခွင်ကျန်းမာရေးနှင့်ဘေးအွန္တရာယ်ကင်းရှင်းလေး လမ်းညွှန်ချက်များအတိုင်း လိုက်နာရန်။				
	• လုပ်ငန်းခွင်အတွင်း သင့်လျော်သော နေရာတွင် အကာများ၊ လျှပ်ကာအပြားများ၊ ဒန်ပါကဲ့သို့				
	သော ဆူညံသံလျော့ချစေသည့် ပစ္စည်းများကို အသုံးပြုပါ။				
	• မီးစက်ကို အသံလုံအခန်းတွင် ထားရှိရမည်။				
စီမံခန့်ခွဲမှု	<ul> <li>ဆူညံသံမြင့်သောနေရာတွင် လုပ်ကိုင်ရသော ဝန်ထမ်းများအတွက် အလှည့်ကျစနစ်ဖြင့်</li> </ul>				
101	လုပ်ကိုင်စေရမည်။				
အစီအစဉ်	• ဂျင်နရေတာနှင့်ပန့်များကဲ့သို့သော စက်ယွန္တရားများကို ပုံမှန်စစ်ဆေး ထိန်းသိမ်းရမည်။				
	• ဆူညံသံမြင့်သောနေရာတွင် လုပ်ကိုင်ရသောဝန်ထမ်းများကို				
	အနားအကာအကွယ်ပစ္စည်းများ အလုံအလောက်နှင့် နားကြပ်များ တပ်ဆင်စေရပါမည်။				
	• ယာဉ်မောင်းများအနေဖြင့် မောင်းနှင်ခြင်းမရှိပါက ယာဉ်အင်ဂျင်များကို ပိတ်ထားရပါမည်။				
တာဝန်ရှိအဖွဲ့	ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအဖွဲ့နှင့်အဖွဲ့ဝင်များ				
	• အထက်ဖော်ပြပါ ဆူညံသံညစ်ညမ်းမှုစီမံခန့်ခွဲမှုအစီအစဉ်ကို အကောင်အထည်ဖော်ရန်။				
	<ul> <li>လုပ်ငန်းလည်ပတ်ချိန်တွင် ဆူညံသံအဆင့်ကို စောင့်ကြည့်ရန်အတွက် ပတ်ဝန်းကျင်ဆိုင်ရာ</li> </ul>				
	ကန်ထရိုက်တာများထံ ဆက်သွယ်ဆောင်ရွက်ရန်။				
တာဝန်	• ဆူညံသံအဆင့်စောင့်ကြည့်ခြင်း၏ ရလိဒ်များကို စီမံခန့်ခွဲသူများထံ သတင်းပို့ပြီး				
	မှတ်တမ်းများ ကို သိမ်းဆည်းထားရန်။				
	• ဆူညံသံနှင့်ပတ်သက်၍ အများပြည်သူများအား သင့်လျော်သောအချိန်တွင် အသိပေးရန်။				

# ရေထုညစ်ညမ်းမှုစီမံခန့်ခွဲမှုအစီအစဉ်

ရည်ရွယ်ချက်	ရေထုညစ်ညမ်းမှုကိုကာကွယ်ရန်နှင့်လျော့ချရန်။ မြေအောက်ရေ အရင်းအမြစ်များ ညစ်ညမ်းမှုကို ကာကွယ်ရန်။
စီမံခန့်ခွဲမှု အစီအစဉ်	ရေမြောင်းများအားလုံးကိုအဖုံး ဖုံးအုပ်ထားရန် လိုအပ်ပါသည်။
	နှုန်းနှင့်အညစ်အကြေးများအတွက် ဇကာများ ထားရှိရမည်။
	အသုံးပြုပြီးသော ဆီများကို ရေမြောင်းအတွင်းတိုက်ရိုက်စွန့်ပစ်ခြင်းမှ ရှောင်ကြည်ရမည်။
	ထုတ်လုပ်မှုလုပ်ငန်းစဉ်မှ ထွက်ရှိလာသော စွန့်ပစ်ရည်များကို စွန့်ပစ်ရည်သန့်စင်ကန်တွင်
	သန့်စင်ပြီးမှ စည်ပင်မြောင်းသို့ စွန့်ထုတ်ရမည်။

	စွန့်ပစ်ရည်နှင့်ပတ်သက်၍ အသိပညာဆိုင်ရာများ ဝန်ထမ်းများကို ထောက်ပံ့ပေးရမည်။ ရေအရည်အသွေးရလဒ်များကို စောင့်ကြည့်ရန်နှင့်၎င်း၏ မှတ်တမ်းများကိုသိမ်းဆည်းရမည်။
တာဝန်ရှိအဖွဲ့	ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအဖွဲ
တာဝန်	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်များအတိုင်းလိုက်နာဆောင်ရွက်ရန်။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်၏အကျိုးသက်ရောက်မှုများကို စောင့်ကြည့်ရန်။ ကိစ္စရပ်တစ်ခုခုဖြစ်လာလျှင် အရေးတယူဆောင်ရွက်မှုပြုလုပ်ရန်။

#### အရင်းအမြစ်အသုံးချမှုစီမံန့်ခွဲမှုအစီအစဉ်

ရည်ရွယ်ချက်	လျှပ်စစ်စွမ်းအင်နှင့်ရေသုံးစွဲမှုများကိုလျှော့ချရန်
altra good (1)	
	စွမ်းအင်သုံးစွဲမှု
	စွမ်းအင်သက်သာသော မီးအိမ်နှင့်စက်ပစ္စည်းများကို အသုံးပြုပါ။ ၎င်းသည် ကြိုတင်ကုန်ကျ
	စရိတ်ပိုများသော်လည်း နှစ်များကြာလာသည်နှင့်အမျှ ၎င်းသည် ငွေနှင့်စွမ်းအင်ကို ပိုမို
	သက်သာစေပါသည်။
	နေ့အလင်းရောင်ကို အများဆုံးအသုံးပြုပါ။
	လေအေးပေးစက်၊ မိုက်ခရိုဝေ့ဖ်၊ ပန်ကာများ၊ ပရင်တာများ၊ ကွန်ပျူတာများနှင့် အခြား
	စက်ပစ္စည်းများကဲ့သို့သော လှုပ်စစ်ပစ္စည်းများ၏ စွမ်းအင်ချွေတာရေးနှင့်ပတ်သက်၍ ဝန်ထမ်း
	များအား စွမ်းအင်အသုံးပြုမှုလျှော့ချခြင်းဆိုင်ရာ အသိပညာပေးခြင်း ပြုလုပ်ရပါမည်။
စီပံခန့်ခွဲမှု	အဆောက်အဉီအတွင်း အပူဒက်မှ ကာကွယ်ရန် အဆောက်အဉီအပြင်ဘက်တွင် အရိပ်ရ
အစီအစဉ်	အပင်များ စိုက်ပျိုးရမည်။
	အသုံးပြုခြင်းမရှိသော ကိရိယာများကို ပိတ်ထားရမည်။
	ခေသုံးစွဲမှု
	ရေသုံးစွဲမှုနည်းသော အိမ်သာသုံးပါ။
	သန့်စင်ပြီးရေများကို စိမ်းလန်းစိုပြေရေး၊ ဥယျာဉ်စိုက်ပျိုးခြင်းနှင့် မီးငြိမ်းသတ်ခြင်းဆိုင်ရာ
	လိုအပ်ချက်များအတွက် အသုံးပြုရပါမည်။
	အထွေထွေသုံးစွဲရေများကို မိလ္လာကန်ထဲသို့စွန့်ပစ်ရပါမည်။
	စွန့်ပစ်ရည်ထွက်ရှိမှုပမာဏကို မှတ်တမ်းတင်ထားရပါမည်။
	ယိုစိမ့်မှုကိုသိရှိပါက ချက်ခြင်းပြုပြင်ရမည်။
တာဝန်ရှိအဖွဲ့	ပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအဖွဲ့နှင့်အဖွဲ့ဝင်များ
	လျှပ်စစ်သုံးစွဲမှုနှင့်အခြားစွမ်းအင်ပြဿနာဆိုင်ရာများကို စီမံခန့်ခွဲသူများထံ သတင်းပို့ရမည်။
တာဝန်	လျှပ်စစ်သုံးစွဲမှုဆိုင်ရာများကို စောင့်ကြပ်ကြည့်ရှုရမည်။
0550a	အကြောင်းတစ်စုံတစ်ရာ ကိစ္စများရှိလာလျှင် စီမံခန့်ခွဲသူများထံ တင်ပြရန်
	လိုအပ်ပါကအရေးယူဆောင်ရွက်မှုများကိုဆောင်ရွက်ရမည်။

### လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးအွန္တရာယ်ကင်းဝေးရေးအစီအစဉ်

Thai Faster Products and M.K Company Limited သည် လက်ရှိတွင် လုပ်ငန်းခွင် ကျန်းမာရေးနှင့်ဘေးအွန္တရာယ်ကင်းဝေးရေးအတွက် လုပ်ငန်းခွင်ရှိ ဝန်ထမ်းများမှ ကောင်းမွန်စွာ လိုက်နာလုပ်ဆောင်လျှက်ရှိပါသည်။ ဝန်ထမ်းများအတွက် ဘေးအွန္တရာယ်ကင်းရှင်းရေးနှင့်ကျန်းမာရေး စီမံခန့်ခွဲမှုများကို အကောင်အထည်ဖော်ရန်အတွက် လုပ်ငန်းခွင် ကျန်းမာရေးနှင့်ဘေးအွန္တရာယ် ကင်းဝေးရေး စီမံခန့်ခွဲမှုအဖွဲ့ကို ဖွဲ့စည်းထားပါသည်။

လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးအွန္တရာယ်ကင်းဝေးရေးစီမံခန့်ခွဲမှုကော်မတီ၏ လုပ်ငန်းနှင့်တာဝန် များမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

- ၁။ ဘေးအွန္တရာယ်ကင်းရှင်းရေးနှင့်မတော်တဆမှု ကာကွယရေးအတွက် စစ်ဆေးရန်စာရင်းများနှင့် အတူလုပ်ငန်းဆောင်ရွက်မှုကို ပုံမှန်စစ်ဆေးရန်။
- ၂။ မတောတဆမှု၊ နာမကျန်းမှု (သို့) အခြားအရေးပေါ် အခြေအနေများ ဖြစ်ပေါ် လာသည့်အခါ လျင်မြန်စွာတုံ့ပြန်ရန်။

၃။ လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးကင်းရေးအခြေအနေ၊ မတော်တဆမှုများ၊ အရေးပေါ် အခြေအနေ၊ အခြားသော ထုတ်လုပ်မှုဆိုင်ရာကိစ္စများနှင့် ထိခိုက်မှုလျော့ပါးစေရေး အစီအမံများကို ဆွေးနွေးရန်အတွက် လစဉ်ကော်မတီအစည်းအဝေးခေါ် ယူ ကျင်းပပါရန်။

- ၄။ လစဉ်အစည်းအဝေးမှ တွေ့ရှိချက်များနှင့်သဘောထားများကို အကောင်အထည်ဖော်ရန် အုပ်ချုပ်ရေးအဖွဲ့ထံသို့ အစီရင်ခံတင်ပြရန်။
- ၅။ ဘေးအန္တရာယယ်ကင်းဝေးရေးနှင့်ကျန်းမာရေး၊ ကြိုတင်ကာကွယ်ရေးအတွက် သင်တန်းများ ပို့ချရန်။

၆။ လုပ်ငန်းခွင်စစ်ဆေးခြင်း၊ မတော်တဆမှုများနှင့်အစည်းအဝေးမှတ်တမ်းများကို သိမ်းဆည်းရန်။ ၇။ စီမံကိန်းအဆိုပြုသူမှ လုံလောက်သော ဘတ်ဂျက်လျာထားမှု ပြဌာန်းချက်များကို ပြုလုပ်ထားခြင်းသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုကို အကောင်အထည်ဖော်ရန်အတွက် စီမံခန့်ခွဲမှု သတ်မှတ်ချက်ထားသင့်ပါသည်။ နှစ်စဉ်ဘတ်ဂျက်ကို ညစ်ညမ်းမှုထိန်းချုပ်ရေး/ စောင့်ကြည့်ရေး ကိရိယာများအသုံးပြုခြင်းဆိုင်ရာများ၊ အဆောက်အဦနှင့်ပြုပြင်ထိန်းသိမ်းမှုအတွက် လျာထားရန်။ လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအွန္တရာယ်ကင်းဝေးရေးစီမံခန့်ခွဲမှုအစီအစဉ်သည် ဝန်ထမ်းများ၏ ကျန်းမာရေးအခြေအနေများ၊ ရုပ်ပိုင်းဆိုင်ရာအခြေများ၊ စိတ်ပိုင်းဆိုင်ရာအခြေအနေများနှင့် လူမှုဘဝ

သာယာရေးကို မြှင့်တင်ရန်နှင့် လုပ်ငန်းခွင်အန္တရာယ်နှင့်အဖြစ်အပျက်များမှ ကာကွယ်ရန် အကောင် အထည်ဖော် ဆောင်ရွက်ရန်ဖြစ်ပါသည်။

ကူးစက်ရောဂါထိန်းချုပ်ရေးအစီအစဉ်

- အိမ်သာနှင့် စားသောက်ဆောင်ဇရိယာနှင့် ရုံးဇရိယာများကို ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပါ။
- ယင်ကောင်များနှင့်အခြားသော အင်းဆက်ပိုးမွှားများ မပေါက်ပွားစေရန် အမှိုက်ပုံးများကို ဖုံးအုပ် ထားပါ။
- ခြင်မပေါက်ပွားစေရန် ဧရိယာအတွင်း ရေဝပ်နေရာများ မရှိရပါ။
- Covid-19 ကဲ့သို့ကူးစက်ရောဂါအတွက် ဘေးကင်းသော လူမှုရေးအရ ခပ်ခွာခွာနေထိုင်ခြင်း၊ နာခေါင်းစဉ်အကာများတပ်ဆင်ခြင်းနှင့် လက်ဆေးခြင်းစသည့် အချက်များအား ဝန်ထမ်းများကို အသိပညာပေးခြင်းများ ဆောင်ရွက်ရမည်။

Manufacturing and Distribution of Various Types of Jellies

### လူမှုစီးပွားဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစအစဉ်

- ကုမ္ပဏီသည် လူမှုစီးပွားတာဝန်သိအစီအစဉ် (CSR) ရန်ပုံငွေအဖြစ် အမြတ်၏ ရာခိုင်နှုန်းကို ဖယ်ထားရပါမည်။
- စီမံကိန်းအဆိုပြုသူသည် ဒေသခံအများပြည်သူများ၏ ကျန်းမာရေး စောင့်ရှောက်မှုနှသင့် ပညာရေး အဆင့်မြှင့်တင်ရန်အတွက် ၎င်း၏ CSR ရန်ပုံငွေကို အသုံးပြုရပါမည်။
- ဒေသခံအလုပ်သများများ ခေါ် ယူမှုအတွက် ဒေသဆိုင်ရာ အလုပ်အကိုင်မူဝါဒကို ချမှတ်သင့်ပါသည်။
- ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) ကို လိုက်နာဆောင်ရွက်ခြင်းဖြင့် ဒေသခံ အများ
   ပြည်သူများ အပေါ် သက်ရောက်မှုမျာကို လျှော့ချနိုင်မည်ဖြစ်သည်။
- အခါအားလျော်သော အချိန်တွင် အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးပွဲများကို စီစဉ်ပေးခြင်း အားဖြင့်
   စက်ရုံလုပ်သားများနှင့် ဒေသခံများအကြား ဆက်ဆံရေးကို တိုးမြှင့်လုပ်ဆောင်ပါ။
- ဒေသတွင်း စီးပွားရေး ဖွံဖြိုးတိုးတက်မှုကို ပံ့ပိုးပေးရန်အတွက် ဒေသခံ ကန်ထရိုက်တာများ
   အတွက် အခွင့်အလမ်းများ ရရှိစေပါသည်။

# အရေးပေါ် တုံ့ပြန်မှုနှင့်ဘေးအွန္တရာယ်စီမံခန့်ခွဲမှုအစီအစဉ်

- အထိတ်တလန့်မဖြစ်စေရန်နှင့် အရေးပေါ် အချိန်အတွင်း အခြေအနေကို ထိထိရောက်ရောက် ကိုင်တယ်ဖြေရှင်းရန် အရေးပေါ် တုံ့ပြန်ရေးနှင့်သဘာဝ ဘေးအွန္တရယ် စီမံခန့်ခွဲမှုအစီအစဉ် လိုအပ်ပါသည်။ အစီအစဉ်တွင် အရေးပေါ် အချိန်အခါ၌ ဆောင်ရွက်ရမည့် အရေးပေါ် တုံ့ပြန်ရေး လှုပ်ရှားမှုများ ပါဝင်ပါသည်။
- အရေးပေါ် တုံ့ပြန်ရေးအစီအစဉ် (ERP) တွင် အောက်ပါတို့ကို ဖော်ပြထားပါသည်။
- အရေးပေါ် တုံ့ပြန်ရေးအဖွဲ့ ဖွဲ့စည်းခြင်း
- ဝန်ထမ်းများ၏ တာဝန်ယူမှုအခန်းကဏ္ဍများနှင့်ပံ့ပို့ရေးကဏ္ဍများ
- အရေးပေါ် အချိန်အတွင်းအသုံးချနိုင်သော ဝန်ထမ်းများနှင့် စက်ကိရိယာများ ကဲ့သို့သော အရင်းအမြစ်များ
- အရေးပေါ် တုံ့ပြန်မှုဆိုင်ရာ လုပ်ဆောင်ချက်များကို စစ်ဆေးရန်အချက်များ။

# ငလျင်အတွက်အရေးပေါ် တုံ့ပြန်မှုအစီအစဉ်

- ဂတ်စ်နှင့်လျှပ်စစ်ဓါတ်အားဖွင့်ပါ။ ဖိနုပ်ကောင်းစွာဝတ်ဆင်ထားပါ။ ဓါတ်မီးဆောင်ထားပါ။
- အရာဝတ္တုမျာပြုတ်ကျခြင်းနှင့် အဆောက်အဦပြိုကျနိုင်သည့် အန္တရာယ်များ ရှိနေသောကြောင့်
   ဝန်ထမ်းများအား ဘေးလွတ်ရာသို့ ရွှေ့ပြောင်းပါ။
- အတွင်းနှင့် အပြင်ဘက်တွင် ဘေးကင်းသော နေရာများကို ခွဲခြားသတ်မှတ်ပါ။
- အတွင်းပိုင်းတွင် နိုင်ခံ့သော စားပွဲခုံ (သို့) စားပွဲအောက်များ ကဲ့သို့သော ဘေးကင်းသော နေရာများကို ရှာဖွေပါ။ မှန်ပြတင်းပေါက်များ၊ မှန်များနှင့် လေးလံသော ဗီဒိုများနှင့်ဝေးဝေးနေပါ။

Manufacturing and Distribution of Various Types of Jellies

- အပြင်ဘက်တွင် အဆောက်အဦများ၊ သစ်ပင်များ၊ တယ်လီဖုန်းလိုင်းများ။ လှုုပ်စစ်လိုင်းများအနီးမှ
   ထွက်ခွာပါ။
- မြေငလျင်လှုပ်နေစဉ် ဘေးကင်းစေရန် ဝပ်နေပြီး အကာတစ်ခုခုဖြင့်ဖုံးထားရမည်။
- မြေပေါ် တွင်ထိုင်ချ၍ စားပွဲ (သို့) ပရိဘောဂများကဲ့သို့ ခိုင်ခံ့သော အရာများအောက်တွင်
   တစ်ခုခုဖြင့် ဖုံးအုပ်ပြီး တုန်ခါမှုရပ်သွားသည်အထိ နေပါ။
- ငလျင်လှုပ်ချိန်အတွင်း တတ်နိုင်သမျှ ဘေးကင်းစွာနေ၍ လှုပ်ခြင်းမပြီးမချင်း အနည်းဆုံး လှုပ်ရှားမှု ပြုလုပ်ပါ။
- ပိတ်မိနေပါက အရေးပေါ် ဝီစီကို အသုံးပြုပါ။

### <u>ရေလွှမ်းမိုးမှုထိန်းချုပ်ရေးအစီအစဉ်</u>

- ပဲခူးမြစ်ရေသည် ရေကြီးနိုင်သည့်အလားအလာရှိနိုင်ပြီး ရေကြီးနေချိန်တွင် ဘေးကင်းရေး ရှုထောင့်
   မှ အလုပ်သမားများအားလုံး သတိထားသင့်သည့် အချက်များ။
- စီးဆင်းနေသောရေကို လမ်းမလျှောက်ပါနှင့်။
- ရေ၏အတိမ်အနက်ကို သိရှိနိုင်ပါရန် တိုင်ကို အသုံးပြု၍ စမ်းသပ်ပါ။
- ရေမြုပ်နေသည့်နေရာကို ကားများ ဖြတ်မမောင်းပါနှင့်။ ရေအနက် ၂ ပေခန့်ရှိသော ရေသည် ကားများကို ရွေ့လျားသွားစေနိုင်ပါသည်။
- ဓါတ်အားလိုင်းများနှင့် လျှပ်စစ်ဝါယာကြိုးများနှင့် ဝေးဝေးနေပါ။
- အဆောက်အဦရေမြုပ်နေပါက လှုုပ်စစ်မီးအားလုံးကို ပိတ်ထားပါ။
- တိရတ္ဆန်များ ပုန်းအောင်းနိုင်ပါသဖြင့် ကြည့်ရှုပါ။
- လမ်းလျှောက်ရန် ရွှံ့များဖြင့် ချောနိုင်သောကြောင့် ခြေလှမ်းမစတင်မီ ကြည့်ရှုပါ။
- ဓါတ်ငွေယိုစိမ့်မှုများကို သတိထားပါ။ ဓါတ်ငွေ့မီးခိုးငွေများ အနံ့ရပါက ထိုနေရာမှ ချက်ချင်း ထွက်ခွာပါ။

# မီးဘေးကာကွယ်ရေးအစီအစဉ်

မီးဘေးအန္တရာယ်သည် စက်မှုလုပ်ငန်းများ အများစုတွင် အမြံရှိနေသော ပြဿနာတစ်ခု ဖြစ်ပါသည်။ မီးဘေးကြိုတင်ကာကွယ်ရေး နှင့် ကာကွယ်ရေးအစီအမံများ တပ်ဆင်ရန်အတွက် သိသာထင်ရှားသော အရင်းအနီးအသုံးစရိတ်များ လိုအပ်ပါသည်။ စက်ရုံရှိ မတော်တဆ မီးလောင်မှုသည် စီးပွားရေးလုပ်ငန်းများကို ထိခိုက်စေရုံသာမက အနီးအနားရှိ အိမ်ရာများနှင့် နေထိုင်ရာများကိုလည်း သိသိသာသာ ပျက်စီးစေပါသည်။

စက်ရုံလုပ်ငန်းများအနေဖြင့် အောက်ပါအချက်များကို လုပ်ဆောင်ရန် လိုအပ်ပါသည်။

- စက်ရုံအဆောက်အဦော်ကြမ်းပြင်အားလုံးကို ဆက်သွယ်ထားသော လှေကားတစ်ခုပါသော အခြားရွေးချယ်စရာ ထွက်ပေါက်တစ်ခုအနည်းဆုံးထားရှိရန်
- အလုပ်ချိန်အတွင်း ထွက်ပေါက်ကို လော့ခ်ချခြင်း သို့မဟုတ် ချိတ်ပိတ်၍ မရပါ။
- မီးဘေးအွန္တရာယ်သတိပေးသည့် ထိရောက်ပြီး ပြတ်ပြတ်သားသားကြားနိုင်စေရန်။

Manufacturing and Distribution of Various Types of Jellies

- လွတ်မြောက်လမ်းကြောင်းတစ်ခုစီသို့ ဝင်ရောက်ခွင့်ပေးသည့် လမ်းကြောင်းများကို ရှင်းလင်း ထားရန်။
- အလုပ်သမား (၅၀) ကျော် အလုပ်ခန့်ထားသော စက်ရုံတစ်ခုသည် အနည်းဆုံး တစ်နှစ်လျှင် (၁)
   ကြိမ် မီးလေ့ကျင့်မှု လုပ်ဆောင်ရန်။
- မီးငြိမ်းသတ်လေ့ကျင့်ရေးနှင့် ကာကွယ်ရေးဆောင်ရွက်ချက်များထားရှိရန်
- "ဆေးလိပ်မသောက်ရ" ဆိုင်းဘုတ်များကို စက်ရုံရှိ အရေးကြီးသည့်နေရာတိုင်းတွင် အထင်အရှား ပြသထားရမည်။
- မီးလောင်မှု သို့မဟုတ် မတော်တဆမှု တစ်ခုခုဖြစ်ပွားသည့်အခါတိုင်း အနီးဆုံးမီးသတ်စခန်းကို အကြောင်းကြားရန်။

### မီးသတ်ဆေးဘူးများအသုံးပြုရြင်း

- မှန်ကန်သောမီးသတ်ဆေးဘူးများအသုံးပြုစေရန်
- အရေးပေါ် ထွက်ပေါက်ကို အမြံထားရှိရန် (မီးဘေး)
- မီးခိုး/ အပူရှိန်သက်ရောက်မှုများအတွက် အနိမ့်တွင်ထားရှိရန်
- မီးတောက်အောက်ခြေကို တိုက်ရိုက်ဖြန်းရန်
- မီးသတ်ဆေးဘူးကို ဘယ်ညာဝှေ့ရမ်းကာဖြန်းရန်
- မီးမထိန်းနိုင်တော့သော နေရာကို ရောက်ပါက အနောက်ဆုတ်ပြီး တံခါးများကို ပိတ်ရန် (သော့မခတ်ပါနှင့်)

# မီးငြိမ်းသတ်ရေပိုက်များအသုံးပြုခြင်း

- stop valve ကို ဖွင့်ထားရန်
- ရေဖြန်းပိုက်ကို စစ်ဆေးရန်
- ရေပိုက်နော်ဇယ်ခေါင်းကို ဖွင့်ပြီးမီးငြိမ်းသတ် ခြေရင်းတွင်းစမ်းသပ်ရန်
- အရေးပေါ် ထွက်ပေါက် တံခါး/ အထွက်လမ်းကြောင်းကြားတွင် တိုက်ရိုက်ထွက်ပေါက် လမ်းကြောင်းကို သေချာဆောင်ရွက်ရန်။

# ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်

ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုခြင်းသည် အဆိုပြုထားသော သဘာဝပတ်ဝန်းကျင်လျော့ပါးရေး အစီအမံများကို အကောင်အထည်ဖော်ခြင်း၏ မရှိမဖြစ် လိုအပ်သော အစိတ်အပိုင်းတစ်ခု ဖြစ်ပါသည်။ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုခြင်းသည် အသုံးဝင်သော အချက်အလက်များကို ထုတ်ပေးပြီး လျော့ပါးရေး အစီအမံများ အကောင်အထည်ဖော်မှုအရည်အသွေးကို မြှင့်တင်ပေးပါသည်။

စောင့်ကြည့်လေ့လာခြင်းတွင် စည်းမျဉ်းစည်းကမ်းစံနှုန်းများနှင့် ဆိုးကိူးသက်ရောက်မှုများကို လျှော့ချရန် ပြုလုပ်ထားသော အကြံပြုချက်များကို လိုက်နာကြောင်း သေချာစေရန် လုပ်ဆောင်မှုများကို စောင့်ကြပ်ကြည့်ရှုခြင်း၊ သုံးသပ်ခြင်းနှင့် အကဲဖြတ်ခြင်းတို့ ပါဝင်ပါသည်။ အစီအစဉ်သည် ကျယ်ကျယ် ပြန့်ပြန့်ဖြစ်ပြီး အကြိမ်ရေအပေါ် မူတည်၍ စည်းမျဉ်းစည်းကမ်းဆိုင်ရာ အစီရင်ခံချက်အစိတ်အပိုင်းနှင့်အတူ

သက်ဆိုင်ရာ ပြဿနာများကို ကိုင်တွယ်ဖြေရှင်းရမည်ဖြစ်ပါသည်။ အနည်းဆုံး တစ်နှစ် (၂) ကြိမ် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာကို အာကာပိုင်များထံ တင်ပြရန် အကြံပြုထားပါသည်။ ဇယား (၁၆) ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်

ပတ်ဝန်းကျင် ဆိုင်ရာ	အမျိုးအစား	နေရာ	အကြိမ်ရေ	တာဝန်ရှိသူ
	PM <sub>10</sub> , PM <sub>2.5</sub> , O <sub>2</sub> , CO, CO <sub>2</sub> ,	ပတ်ဝန်းကျင်လေထုအ	နှစ်စဉ်	
	NH <sub>3</sub> , NO <sub>2</sub> , SO <sub>2</sub> , O <sub>3</sub> , VOC	ရည်အသွေး	နှစ်စဉ်	သတ်မှတ်ထား
	PM <sub>10</sub> , PM <sub>2.5</sub> , VOC, O <sub>2</sub> , CO,	ဘွိုင်လာနှင့် မီးစက်မှ		သော
လေထု	CO <sub>2</sub> , NO <sub>2</sub> , SO <sub>2</sub>	ထုတ်လွှတ်မှု	တစ်နှစ် (၂)	ပတ်ဝန်းကျင်
အရည်အသွေး	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> , NO <sub>x</sub>	လုပ်ငန်းခွင် (ရောနှောအခန်း)	ကြိမ်	ဆိုင်ရာ စီမံခန့်ခွဲမှု
	လောင်ကျွမ်းမှုများအတွက် ပုံမှန်ပြုပြင်မှုများကို စစ်ဆေးရန်	ဘွိုင်လာ	နေ့စဉ်	အဖွဲ့အစည်း
ဘေးအွန္တရာယ်မရှိ	ပမာဏအလိုက် အမှိုက်လျော့ချရေးများ (ထုထည်၊ အလေးချိန် (သို့) ကုန်ကျစရိတ်) သတ်မှတ်ရန်	လုပ်ငန်းခွင်နှင့်စက်ရုံ ဇရိယာ	လိုအပ်သလို	ပတ်ဝန်းကျင် ဆိုင်ရာစီမံ ခန့်ခွဲမှု အဖွဲ့အစည်း/
စွန့်ပစ်ပစ္စည်း	အမှိုက် အမျိုးအစား ခွဲခြားစွန့်ပစ်ရန်	လုပ်ငန်းခွင်နှင့်စက်ရုံ ဖရိယာ	နေ့စဉ်	လုပ်ငန်းခွင် ကြီးကြပ်သူ/ အလုပ် သမားများ
		I	I	
ဘေးအွန္တရာယ်ရှိ	ဝန်ထမ်းများအား အန္တရာယ် ရှိသော ပစ္စည်းများ စွန့်ပစ်ခြင်း ဆိုင်ရာ သင်တန်းပို့ချခြင်း	လုပ်ငန်းခွင်နှင့်စက်ရုံ ဧရိယာ	ဝန်ထမ်း အသစ်	မန်နေဂျာ
စွန့်ပစ်ပစ္စည်း	အန္တရာယ်ရှိသော ကုန်ပစ္စည်းများအတွက် MSDS ဖြင့်အသုံးပြုနိုင်စေရန်	လုပ်ငန်းခွင်နှင့်စက်ရုံ ဇရိယာ	လစဉ်	ပတ်ဝန်းကျင် ဆိုင်ရာစီမံ ခန့်ခွဲမှုအဖွဲ
	1	1		
	Aluminum, Chloride, copper, cyanide,	အဝီစိတွင်းရေ		
ရေအရည်အသွေး	Manganese, pH, Sulfate, Total Alkalinity, TDS, Hardness, Total Iron, Turbidity	သောက်ရေ	တစ်နှစ် (၃) ကြိမ်	ပတ်ဝန်းကျင်စီမံ ခန့်ခွဲမှုအဖွဲ
	1	1	1	1

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

ပတ်ဝန်းကျင် ဆိုင်ရာ	အမျိုးအစား	နေရာ	အကြိမ်ရေ	တာဝန်ရှိသူ
စွန့်ပစ်ရေ အရည်အသွေး	BOD <sub>5</sub> , COD, Oil & Grease, pH, Total Nitrogen, Total Phosphorous, TSS, Coliform, temperature	ထုတ်လုပ်မှုမှထွက်ရှိမှု စွန့်ပစ်ရေသန့်စင်ကန် အဝင် စွန့်ပစ်ရေသန့်စင်ကန် အထွက်	တစ်နှစ် (၃) - ကြိမ်	ကြီးကြပ်သူ/ ပတ်ဝန်းကျင်စီမံ ခန့်ခွဲမှုအဖွဲ
ဆူညံသံ	[			
ပတ်ဝန်းကျင် ဆူညံသံ	ဆူညံသံအဆင့်သတ်မှတ်ချက	စက်ရုံ ပရဝုက်	တစ်နှစ် (၁) ကြိမ်	ပတ်ဝန်းကျင်စီမံ ခန့်ခွဲမှုအဖွဲ
		စက်ပစ္စည်းလုပ်ဆောင် မှုကောင်းမွန်စေရန် ထိန်းသိမ်းခြင်းများ	အပတ်စဉ်/ လိုအပ်ပါက	
လုပ်ငန်းခွင်ဆူညံသံ	ဆူညံသံအဆင့်သတ်မှတ်ချက်	ဆူညံသံမြင့်မားသည့် နေရာတွင်လုပ်ကိုင် ရသည့်ဝန်ထမ်းများ	နေ့စဉ်	– စက်ရုံမန်နေဂျာ
လုပ်ငန်းခွင် ဆူညံသံ	ဆူညံသံအဆင့်သတ်မှတ်ချက်	ရောနှောအခန်း မီးစက်နှင့်ဘွိုင်လာ	တစ်နှစ် (၂) ကြိမ်	ပတ်ဝန်းကျင်စီမံ ခန့်ခွဲမှုအဖွဲ့
	မီးငြိမ်းသတ်ရေးကိရိယာ (မီးသတ်ဆေးဘူး၊ မီးသတ် ပိုက်၊ မီးသတ်ရေငုတ်များ)	စက်ရုံပရဝုက်၊ လုပ်ငန်းခွင်၊ မီးစက် အခန်း၊ လောင်စာဆီ သိုလှောင်နေရာ	နေ့စဉ်	မီးဘေး အွန္တရာယ်
T T	မီးသတ်ငုတ်စစ်ဆေးခြင်း	စက်ရုံ ပရဝုက်	လစဉ်	ဆိုင်ရာအရာရှိ
အရေးပေါ် တုံ့ပြန်မှုဆိုင်ရာ	မီးငြိမ်းသတ်ရေးဆိုင်ရာ ကိရိယာများ	မီးငြိမ်းသတ် ကိရိယာများ	တစ်နှစ် (၄) ကြိမ်	-
ကိရိယာများ	စက်ရုံနှင့်အနီးပတ်ဝန်းကျင် မတော်တဆမှုများ မှတ်တမ်းတင်ထားရှိခြင်း လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးကင်းရေးသင်တန်း	- - စက်ရုံ ပရဝုက်	တစ်နှစ် (၂) ကြိမ်	လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးကင်းရေး ဆိုင်ရာ အရာရှိ
လုပ်ငန်းခွင်ကျန်းမာ ရေးနှင့်ဘေးအွန္တ	သန့်စင်ခန်းများအသုံးပြုမှု သန့်ရှင်းရေးနှင့် ထိန်းသိမ်း ရေးဆောင်ရွက်ခြင်း	စက်ရုံ ပရဝုက်	အပတ်စဉ်	အထွေထွေ မန်နေဂျာ/ လုပ်ငန်းခွင်
ရာယ် ကင်းဝေးရေး	စွန့်ပစ်အမှိုက်များ စနစ် တကျ စွန့်ပစ်မှုနှင့် သုံးစွဲမှု ပစ္စည်းများ	စက်ရုံ ပရဝုက်	နေ့စဉ်	ကျန်းမာရေးနှင့် ဘေးအွန္တရာယ်

Green Myanmar Environmental Services Co., Ltd.

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

ပတ်ဝန်းကျင် ဆိုင်ရာ	အမျိုးအစား	နေရာ	အကြိမ်ရေ	တာဝန်ရှိသူ
	ရှေးဦးသူနာပြုဆေးသေတ္တာ ထောက်ပံ့ခြင်း၊ ဆေးခန်း တွင် သူနာပြုထားရှိခြင်း ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုဆိုင်ရာ အသိပညာ ဝန်ထမ်းများ သိရှိစေခြင်း။	စက်ရုံ ပရဝုက်	డ్మంర్ర	ကင်းဝေးရေးအဖွဲ
	လိုအပ်သည့်ဝန်ထမ်းများကို PPE ထားထောက်ပံ့ခြင်း	စက်ရုံ ပရဝုက်	လိုအပ်သလို	
	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးကင်းလုံခြုံရေး၊ ရှေးဦးသူနာပြုခြင်း သင်တန်းများ.	စက်ရုံ ပရဝုက်	လိုအပ်သလို	
စွမ်းအင်သုံးစွဲမှု	ဒီဇယ်အသုံးများမှတ်တမ်း	ဂျင်နရေတာနှင့် ကွန်ပရက်ဆာ	လစဉ်	အထွေထွေ မန်နေဂျာ/
	လျှပ်စစ်သုံးစွဲမှုမှတ်တမ်း	လျှပ်စစ်မီတာ	လစဉ်	သက်ဆိုင်ရာအ
အရင်းမြစ်သုံးစွဲမှု	အသုံးပြုခြင်းမရှိပါက ခလုပ်များပိတ်ထားရန်	လှုပ်စစ်ဖြန့်ဖြူးရေး	နေ့စဉ်	လိုက် တာဝန်ခံများ
	အသုံးမပြုပါက ရေပိုက် ခေါင်းများ ပိတ်ထားရန်	ရေပိုက်ခေါင်းများ	နေ့စဉ်	ဝန်ထမ်းများ အားလုံး

# ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက်ဘတ်ဂျက်ငွေထောက်ပံ့မှုအစီအစဉ်

စီမံကိန်းအဆိုပြုသူမှ လုံလောက်သော ဘတ်ဂျတ်ပြဌာန်းချက်များ ချမှတ်ခဲ့ပါသည်။ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် စီမံခန့်ခွဲမှုကို သတ်မှတ်ထားသင့်ပါသည်။ အသေးစိတ်ရင်းနှီးမြှုပ်နှံမှုများနှင့် နှစ်တိုင်း (တစ်နှစ်လျှင်) ဘတ်ဂျတ်ငွေကို ညစ်ညမ်းမှုထိန်းချုပ်ရေး/ စောင့်ကြည့်ရေးကိရိယာများ၊ လုပ်ငန်းလည်ပတ်ခြင်းနှင့်ပြုပြင်ထိန်းသိမ်းမှုများအတွက် လျာထားသင့် ပါသည်။

ဤ EMP အစီရင်ခံစာကို ပြင်ဆင်သောအခါ စီမံကိန်းသည် လုပ်ငန်းလည်ပတ်မှုအဆင့်တွင် လုပ်ဆောင်နေပါသည်။ ထို့ကြောင့် EMP ခန့်မှန်ချေး ဘတ်ဂျတ်ငွေသည် လုပ်ငန်းဆောင်ရွက်မှုအဆင့် အတွက် အလေးထားပါသည်။ စီမံကိန်းသည် လုပ်ငန်းလည်ပတ်မှုအဆင့်အတွင်း သက်ရောက်မှု စောင့်ကြည့်ခြင်းကို ဆောင်ရွက်မည် ဖြစ်ပါသည်။ အောက်ပါဇယားသည် လုပ်ငန်းဆောင်ရွက်မှု အဆင့် အတွက် သက်ရောက်မှုစောင့်ကြည့်ခြင်းကို တစ်နှစ်လျှင် (၂) ကြိမ် ပတ်ဝန်းကျင်စီမံခန့်ခွဲအစီအစဉ်ကို အကောင်အထည်ဖော်ရန် ခန့်မှန်ခြေ အသုံးစရိတ်များကို ပြသထားပါသည်။ အခြေအနေအရ ပြောင်းလဲ နိုင်ပါသည်။ စီမံကိန်းအဆိုးပြုသူသည် လုပ်ငန်းဆောင်ရွက်မှုအဆင့်အတွင်း သက်ရောက်မှုများကို

စောင့်ကြည့် စစ်ဆေးမည် ဖြစ်ပါသည်။ အောက်ဖော်ပြပါ ဇယားသည် Thai Faster Products and M.K Co., Ltd. အတွက် Environmental Monitoring အတွက် ခန့်မှန်းကုန်ကျစရိတ်များကို ဖော်ပြထားပါသည်။

ဇယား (၁၇)	ပတ်ဝန်းကျ	ုင်စောင့်ကြ	ပ်ကြည့်ရှုမှုအ	ာတွက်ခန့်မှ	န်းကုန်ကျစရိတ်
· ()		1 °C	الا الد 🔍 🖵	0 101	

လုပ်ငန်းလည်ပတ်ခြင်းကာလ         အရာည်         သို့င်းလာနှင့်ဂျင်နရေတာမှ ထွက်ရှိခြင်း         2         ဘိန်န် (၂) ကြီနိုင်         300,000         1,200,000           အသွေး         သို့င်းလာနှင့်ဂျင်နရေတာမှ ထွက်ရှိခြင်း         1         ဘိန်န် (၂) ကြီနိုင်         200,000         400,000           လုပ်ငန်းခွင်         1         ဘိန်န် (၂)         200,000         400,000           စုစုခေါင်း		· · ·		0 0			
၁။         လေထုအရည် အသွေး         ဘိရိုင်လာနှင့်ဂျင်နရေတာမှ ထွက်ရှိခြင်း         2         တစ်နှစ် (၂) ကြိုင်         300,000         1,200,000           လယုံထန့်းကျင်လေထု အရည်အသွေး         1         တစ်နှစ် (၁) ကြိုင်         200,000         400,000           စုစုဝေါင်း	စဉ်		စောင့်ကြည့်ရမည့်အရာ	စောင့် ကြည့်မည့်			
အသွေး         ထွက်နိုခြင်း         2         (736)         300,000         1,200,000           (လုပ်ငန်းနွင်         1         (တိုင်န်းနွင်         200,000         400,000           (လုပ်ငန်းနွင်         1         (တိုင်န်းနွင်         1,000,000         1,000,000           စုစုပေါင်း         (လုပ်ငန်းနွင်         1         (ကိုင်န်         2,600,000         450,000           (လုပ်ငန်းနွင်         1         (ကိုင်န်         1         (ကိုင်န်         1,000,000         1,000,000         450,000           (ရေထု အရည်         အဝိန်တွင်း         1         (ကိုင်န်         1         (ကိုင်န်         150,000         450,000           (ရှိနှိပ်စ်ရည်သန့်စင်ကန်အဝင်         1         (ကိုင်နှိ         (ကိုင်နှိ         150,000         450,000           (ရှိနှိပ်စ်ရည်သန့်စင်ကန်အဝင်         1         (ကိုင်န         (ကိုင်န         150,000         450,000           (ရှိနှိပ်စ်ရည်သန့်စင်ကန်အဝင်         1         (ကိုင်န         (ကိုင်န         150,000         450,000           (ရှိနှိပ်စ်ရည်သန့်စင်ကန်န         3         (ကိုင်န         (ကိုင်န         300,000         150,000         300,000           (ရှိနှိပ်ရည်သန့်စင်ရည်         3         (ကိုင်န         (ကိုင်န         300,000         50,000         50,000	လုပ်	ငန်းလည်ပတ်ခြင်း	ന്നസ				
လေထုအရည်အသွေး         1         ကြိုင်         200,000         400,000           မလ်ထုအရည်အသွေး         1         တစ်နှစ် (၁)         1,000,000         1,000,000           စုစုပေါင်း         2,600,000         1,000,000         1,000,000         1,000,000           ၂။         ဓရထု အရည်         အဝိစိတွင်း         1         တစ်နှစ် (၁)         150,000         450,000           ၂။         ဓရထု အရည်         အဝိစိတွင်း         1         တစ်နှစ် (၃)         150,000         450,000           ၂။         အသွေက်         1         တစ်နှစ် (၃)         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကန်အဝင်         1         ကြိုင်         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကန်         1          150,000         450,000           စုစုပေါင်:         2,250,000         150,000         450,000           စုစုပေါင်:         2,250,000         150,000         300,000           စုစုပေသ         လုင်ငန်းနွင်         3         တစ်နှင် (၂)         50,000         300,000           စုစုပေပို         လုင်ငန်းနှင်         3         တစ်နှင် (၁)         50,000         50,000           စုစုပေပို         လွင်ငန်းရွင်လှလွင်ရာတစ်နှင် (2)         50,000         50,000         500,000 <td>)II</td> <td></td> <td>ထွက်ရှိခြင်း</td> <td>2</td> <td></td> <td>300,000</td> <td>1,200,000</td>	)II		ထွက်ရှိခြင်း	2		300,000	1,200,000
အရည်အသွေး         1         ကြိုင်         1,000,000         1,000,000           စုစုဝေါင်း         2,600,000         2,600,000         1000,000         450,000           ၂။         ရေထု အရည် အသွေး         အဝိစိတွင်း         1         တစ်နစ် (၃)         150,000         450,000           ၂။         ရေထု အရည် အသွေး         အဝိစိတွင်း         1         တစ်နစ် (၃)         150,000         450,000           ၇န်ပစ်ရည်သန့်စင်ကန်အဝင်         1         တစ်နစ် (၃)         150,000         450,000           ၇န်ပစ်ရည်သန့်စင်ကန်အဝင်         1         တိစ်နစ် (၂)         150,000         450,000           ၇၈၀၀         အထွက်         1         တစ်နစ် (၂)         150,000         450,000           ၇၈၀၀         အထွက်         1         တစ်နစ် (၂)         150,000         450,000           ၇၈၀၀         အထွက်         1         တစ်နစ် (၂)         50,000         300,000           ၇၈         လှင်ငန်းရှင်         3         တစ်နစ် (၁)         50,000         50,000           ၇၈         လွင်ငန်းရှင်ခုခဲ့ခဲ့ရာစင်ခုဆိုသင်         3         တစ်နစ်         500,000         50,000           ၇၈         အငေထူထွေ         -         -         -         -         -           ၇၈         အငေရာစင်နှ				1		200,000	400,000
၂။         ရေထု အရည် အသွေး         အဝိစိတွင်း         1         150,000         450,000           အသွေး         ဘွိုင်လာအနီးရေမြောင်း         1         တစ်နန် (၃)         150,000         450,000           ၂။         ထွတ်လုပ်မှုမှုစွန့်ပစ်ရည်         1         တစ်နန် (၃)         150,000         450,000           ၂၈         စွန့်ပစ်ရည်သန့်စင်ကန်အဝင်         1         တစ်နန် (၃)         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကန်         1          150,000         450,000         450,000           စုစုဝေါင်း         2,250,000         150,000         450,000         2,250,000         300,000           စုစုဝေါင်း         2,250,000         50,000         300,000         300,000         50,000         50,000         50,000           စုစုဝေါင်:         2,250,000         50,000         50,000         50,000         50,000         50,000         50,000         50,000         50,000         50,000         50,000         50,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000				1	-	1,000,000	1,000,000
အသွေး         ဘွိုင်လာအနီးရေမြောင်း         1         ဘွိုင်လာအနီးရေမြောင်း         1           ထုတ်လုပ်မှုမှစွန့်ပစ်ရည်         1         ဘစိန်န (၃)         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကန်         1         ဘိုင်လာအနီးရေမြောင်း         1         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကန်         1         ဘိုင်လာအနီးရမြောင်း         1         150,000         450,000           စုစုပေါင်း         ၁၀ တစ်နှစ် (၃)         10,000         450,000         450,000           စုစုပေါင်း         2,250,000         150,000         450,000           စုစုပေါင်း         0         2,250,000         300,000           စုစုပေါင်း         0         0         50,000         300,000           စုစုပေါင်း         0         0         0         50,000         300,000           စုစုပေါင်း         1         တစ်နှစ် (၁)         50,000         50,000         50,000           စုစုပေပါင်း         3         0         0         50,000         50,000         500,000           စုစုပေရည်စုစ်ခန့်ခွဲမှုအစီအစဉ်         0         0         0         0         500,000         500,000           စုစုပ်စန်းတွင်လုပ်နဲးတွင်ရာစီအစဉ်         0         0         0         0	စုစုေ	ပါင်း		·			2,600,000
အသွေး         ဘွိုင်လာအနီးရေမြောင်း         1         ဘွိုင်လာအနီးရေမြောင်း         1           ထုတ်လုပ်မှုမှစွန့်ပစ်ရည်         1         ဘစိန် (၃)         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကန်         1         ဘိုင်လာအနီးရေမြောင်း         1         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကန်         1         ဘိုင်လာ         150,000         450,000         450,000           စုစုပေါင်း         3         ဘိုင်လ်         1         150,000         450,000           စုစုပေါင်း         2,250,000         150,000         450,000         450,000           စုစုပေါင်း         2,250,000         300,000         300,000         90           စုစုပေါင်း         0         0         50,000         300,000         90           စုစုပေါင်း         1         တစ်နှစ် (၁)         50,000         50,000         50,000           စုစုပေါင်း         3         တစ်နှစ် (၁)         50,000         50,000         500,000           စုစုပေခိုးချင်ရည်ချင်ရအစီအစဉ်         0         0         0         500,000         500,000           စွန့်ပစ်အဖိုက်စိမ္ခန်ခွဲမှုအစီအစဉ်         0         0         0         500,000         500,000           စွန့်ပစ်အဖိုက်စိမ္ခရာစီချက်များ         0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
ပြန်မစ်ရည်သန့်စင်ကုန်အဝင်         1         တစ်နှစ် (၃)         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကုန်အဝင်         1         ကိုစ်         150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကုန်အဝင်         1          150,000         450,000           စွန့်ပစ်ရည်သန့်စင်ကုန်အဝင်         1          150,000         450,000           စုစုပေါင်း         2,250,000         2,250,000         300,000           စုစုပေါင်း          လုဝ်ငန်းခွင်         3          တစ်နှစ် (၂)         50,000         300,000           စုစုပေါင်း          လုဝ်ငန်းခွင်         3           50,000         500,000         50,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000         500,000	ال	ရေထု အရည်	အဝီစိတွင်း	1		150,000	450,000
		အသွေး	ဘွိုင်လာအနီးရေမြောင်း	1		150,000	450,000
စွန့်ပစ်ရည်သန့်စင်ကန် အထွက်         1         150,000         450,000           စုဝုေပါင်း         2,250,000         2,250,000         2,250,000         300,000           ပုံ၊         ရာညံသံ         လုပ်ငန်းခွင်         3         တစ်နှစ် (၂) ကြိုင်         50,000         300,000           စုဝုေပါင်း         0         လုပ်ငန်းခွင်         3         တစ်နှစ် (၁) ကြိုင်         50,000         50,000           စုဝုေပါင်း         0         0         0         50,000         50,000         50,000           စုဝုေပါင်း         3             50,000         50,000           စုဝုေပါင်း         3             50,000         50,000           စုဝုေပါင်း         3              50,000           စုန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်              500,000			ထုတ်လုပ်မှုမှစွန့်ပစ်ရည်	1	တစ်နစ် (၃)	150,000	450,000
ရာထွက်         1         150,000         450,000           စုစုပေါင်း         2,250,000         2,250,000         2,250,000           ၇။         ရာညံသံ         လုဝ်ငန်းခွင်         3         တစ်နှစ် (၂) ကြိမ်         50,000         300,000           စုစုပေါင်း         ပတ်ဝန်းကျင်ဆူညံသံ         1         တစ်နှစ် (၁) ကြိမ်         50,000         50,000           စုစုပေါင်း         3         တစ်နှစ် (၁) ကြိမ်         50,000         50,000         50,000           စုစုပေါင်း         3         တစ်နှစ် (၁) ကြိမ်         50,000         50,000         50,000           စုစုပေါင်း         3         တစ်နှစ် (၁) ကြိမ်         500,000         50,000         50,000           စုန့်ပစ်ရည်စိမ်ရန်နွဲမှုအစီအစဉ်         500,000         500,000         500,000         500,000           စိမ်းလန်းစိုင်ပြေရေးအစီအစဉ်            500,000         500,000           စိမ်းလန်းစိုင်ပြေရေးအစီအစဉ်             500,000         500,000           အရေးပေါ ဆိုင်ရာစီမံချက်များ              500,000           စိမ်းလန်းစိုင်ရာစီမံချက်များ                 စိမ်းလန်			စွန့်ပစ်ရည်သန့်စင်ကန်အဝင်	1	ကြိမ်	150,000	450,000
စုစုပေါင်း         2,250,000           ?"         ဆူညံသံ         လုဝ်ငန်းခွင်         3         တစ်နှစ် (၂)         50,000         300,000           ?"         သူညံသံ         လုဝ်ငန်းခွင်         3         တစ်နှစ် (၁)         50,000         50,000           စုစုပေါင်း         3         တစ်နှစ် (၁)         50,000         50,000         50,000           စုစုပေါင်း         3         တစ်နှစ် (၁)         50,000         50,000         50,000           စုစုပေါင်း         3         500,000         50,000         50,000         50,000           စုစုပေါင်း         3         500,000         50,000         50,000         50,000           စုန်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်         500,000         500,000         500,000         500,000           စွန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်         500,000         500,000         500,000         500,000           စိမ်းလန်းစိုငြေရေးအစီအစဉ်         500,000         500,000         500,000         500,000         500,000           အရေးရပါ ဆိုင်ရာစီမံချက်များ         500,000         500,000         500,000         500,000         500,000				1		150,000	450,000
$\gamma$ II $\alpha$ ညůů $\gamma$ ůckěský         3 $\sigma$ běků (j)         50,000         300,000 $\phi$ pe $u$ óbok         1 $\sigma$ běků (z) $\sigma$ běků $\sigma$ běků (z) $\sigma$ bů	ခုစု	ටරිඃ		1			2,250,000
ပတဝန်းကျင်ရာည်သ         1         ကြိမ်         50,000         50,000           စုစုပေါင်း         350,000         350,000         350,000           ၄။         အထွေထွေ         500,000         500,000           စွန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်         500,000         500,000           စွန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်         500,000         500,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         500,000         700,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တစ်ပေါင်း         200,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တစ်ပေါင်း         200,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တည်း         1,000,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တည်း         500,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တည်း         500,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တည်း         500,000           စွန်ပေလိုင်ရာစီမံချက်များ         500,000         500,000			လုပ်ငန်းခွင်	3		50,000	300,000
၄။       အထွေထွေ         ၇။       အထွေထွေ         စွန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်       500,000         လေထုညစ်ညမ်းမှုထိန်းချုပ်ရေးအစီအစဉ်       500,000         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       700,000         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       200,000         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       တစ်ပေါင်း         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       00,000         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       00,000         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       00,000         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       00,000         စွန့်ပစ်အဖိုက်မိန့်ခွဲမှုအစီအစဉ်       00,000         လွှန်းစိုင်ပြရေးအစီအစဉ်       00,000         စွန့်ပစ်နာစိုးရှာစီမံချက်များ       00,000         စိမ်းလန်းစိုင်ရာစီမံချက်များ       00,000         စစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ       500,000			ပတ်ဝန်းကျင်ဆူညံသံ	1	-	50,000	50,000
စွန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်         500,000           လေထုညစ်ညမ်းမှုထိန်းချုပ်ရေးအစီအစဉ်         500,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         700,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တစ်ပေါင်း           စိမ်းလန်းစိုပြေရေးအစီအစဉ်         တစ်ပေါင်း           လုပ်ငန်းခွင်ဘေးကင်းရေးဆိုင်းဘုတ်များ         တည်း           အရေးပေါ် ဆိုင်ရာစီမံချက်များ         ကုန်ကျငွေ           မီးဘေးဆိုင်ရာစီမံချက်များ         ၇၈၇၇ယ်ရည်အကာကွယ်သုံးပစ္စည်းများ	ခဝုစု	ပါင်း			·		350,000
စွန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်         500,000           လေထုညစ်ညမ်းမှုထိန်းချုပ်ရေးအစီအစဉ်         500,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         700,000           စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         တစ်ပေါင်း           စိမ်းလန်းဗိုပြေရေးအစီအစဉ်         တစ်ပေါင်း           လုပ်ငန်းခွင်ဘေးကင်းရေးဆိုင်းဘုတ်များ         တည်း           အရေးပေါ် ဆိုင်ရာစီမံချက်များ         ကုန်ကျငွေ           မီးဘေးဆိုင်ရာစီမံချက်များ         ကုန်ကျငွေ           တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ         500,000							
၀. လူသည် လူနို့ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       500,000         စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်       700,000         စိမ်းလန်းစိုပြေရေးအစီအစဉ်       တစ်ပေါင်း         လုပ်ငန်းခွင်ဘေးကင်းရေးဆိုင်းဘုတ်များ       တည်း         အရေးပေါ် ဆိုင်ရာစီမံချက်များ       ကုန်ကျငွေ         မီးဘေးဆိုင်ရာစီမံချက်များ       500,000         တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ       500,000	۶ı	အထွေထွေ					
စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်         700,000           စိမ်းလန်းစိုပြေရေးအစီအစဉ်         တစ်ပေါင်း         200,000           လုပ်ငန်းခွင်ဘေးကင်းရေးဆိုင်းဘုတ်များ         တည်း         1,000,000           အရေးပေါ် ဆိုင်ရာစီမံချက်များ         ကုန်ကျငွေ         100,000           မီးဘေးဆိုင်ရာစီမံချက်များ         500,000         500,000           တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ         500,000         500,000		စွန့်ပစ်ရည်စီမံခန့်ခွဲမှုအစီအစဉ်				500,000	
စိမ်းလန်းစိုပြေရေးအစီအစဉ်         တစ်ပေါင်း         200,000           လုပ်ငန်းခွင်ဘေးကင်းရေးဆိုင်းဘုတ်များ         တည်း         1,000,000           အရေးပေါ် ဆိုင်ရာစီမံချက်များ         ကုန်ကျငွေ         100,000           မီးဘေးဆိုင်ရာစီမံချက်များ         500,000         500,000           တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ         500,000         500,000		လေထုညစ်ညမ်းမှုထိန်းချုပ်ရေးအစီအစဉ်					500,000
လုပ်ငန်းခွင်ဘေးကင်းရေးဆိုင်းဘုတ်များ       တည်း       1,000,000         အရေးပေါ် ဆိုင်ရာစီမံချက်များ       ကုန်ကျငွေ       100,000         မီးဘေးဆိုင်ရာစီမံချက်များ       500,000         တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ       500,000		• •					700,000
အရေးပေါ် ဆိုင်ရာစီမံချက်များ         ကုန်ကျငွေ         100,000           မီးဘေးဆိုင်ရာစီမံချက်များ         500,000           တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ         500,000						200,000	
မီးဘေးဆိုင်ရာစီမံချက်များ တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ 500,000							1,000,000
တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ 500,000				100,000			
			500,000				
		တစ်ကိုယ်ရည်အကာကွယ်သုံးပစ္စည်းများ					500,000
သင်တန်းများ 500,000		သင်တန်းများ					500,000

#### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

စဉ်	စောင့်ကြပ် ကြည့်ရှုခြင်း	စောင့်ကြည့်ရမည့်အရာ	(က) စောင့် ကြည့်မည့် နေရာ	(ခ) အကြိမ်ရေ	(ဂ) ငွေကျပ်နှုန်း	(က×ə×ဂ) စုစုပေါင်း ပမာဏ (ကျပ်)
စုစုပေါင်း			4,500,000			
အား	အားလုံးစုစုပေါင်း 97,00,000			97,00,000		

# အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်းနှင့်သတင်းအချက်အလက်များထုတ်ပြန်ခြင်း

ပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းဆောင်ရွက်ရာတွင် အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးခြင်းများ ပြုလုပ် ရခြင်းသည် စီမံကိန်းဆိုင်ရာ အကြောင်းအရာများကို အမှန်တကယ် သိရှိနားလည် သဘောပေါက်စေရန်၊ လုပ်ငန်းများလည်ပတ်လုပ်ဆောင်မှုကြောင့် ပတ်ဝန်းကျင်အပေါ် သက်ရောက်နိုင်မှုများနှင့် အဆိုပြုလုပ်ငန်း များကြောင့် အလုပ်အကိုင်အခွင့်အလမ်းများ တိုးတက်လာခြင်းများကို အများပြည်သူများ အနေဖြင့် သိရှိစေရန် ရည်ရွယ်ပါသည်။ အဆိုပြုစီမံကိန်းကြောင့် ထိခိုက်နိုင်သည့်သူများနှင့် အခြားမည်သည့် သူများမဆို တွေ့ဆုံဆွေးနွေးခြင်း လုပ်ငန်းစဉ်များတွင် ပူးပေါင်းပါဝင်ဆွေးနွေးကြခြင်းဖြင့် လုပ်ငန်းရှင်များ အနေဖြင့် ဖြစ်ပေါ် လာနိုင်သည့် ပြဿနာများကို ကြိုတင်ကာ ဖြေရှင်းနိုင်သွားမည် ဖြစ်ပါသည်။

### လုပ်ဆောင်မည့်နည်းလမ်းနှင့်ချဉ်းကပ်ခြင်း

စိမ်းလန်းမြန်မာပတ်ဝန်းကျင်ဆိုင်ရာဝန်ဆောင်မှုလုပ်ငန်း ကုမ္ပကီလီမိတက်အနေဖြင့် အဆိုပြု စက်ရုံနှင့် ပတ်သက်၍ အများပြည်သူများထံမှသဘောထားရယူခြင်းနှင့် သတင်းအချက်များထုတ်ပြန်ရာတွင် အောက်ပါလုပ်ငန်းစဉ် (၂) ရပ်ဖြင့် ဆောင်ရွက်ခဲ့ပါသည်။

- (က) စက်ရုံဝန်ထမ်းများနှင့်တွေ့ဆုံဆွေးနွေး၍လုပ်ငန်းခွင်ဆိုင်ရာအကြံပြုချက်များရယူခြင်း
- (ခ) စက်ရုံအနီးပတ်ဝန်းကျင်ဒေသခံအများပြည်သူများနှင့်တွေ့ဆုံဆွေးနွေးခြင်း

# စက်ရုံဝန်ထမ်းများနှင့်တွေ့ဆုံဆွေးနွေးရှုံလုပ်ငန်းခွင်ဆိုင်ရာအကြံပြုချက်များရယူခြင်း

Thai Faster Products and M.K ကုမ္ပကီလီမိတက် ၏ ``ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ခြင်းလုပ်ငန်း" စက်ရုံအတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (Environmental Management Plan – EMP) အစီရင်ခံစာ ရေးဆွဲခြင်း နှင့်ပတ်သက်၍ ဝန်ထမ်းများ၏ လုပ်ငန်းခွင်ဆိုင်ရာဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် လုပ်ငန်းခွင်သုံး အကာ အကွယ်ပစ္စည်းများအသုံးပြုမှု၊ သောက်သုံးရေစနစ်၊ ဆေးကြောရေအသုံးပြုမှုစနစ်၊ သန့်စင်ခန်း များသန့်ရှင်းမှုစနစ်၊ လုပ်ငန်းခွင်အတွင်း ဆူညံသံ၊ အမှုန်အမွှား၊ အနံ့အသက်၊ အခိုးအငွေ၊ အလင်းရောင် လုံလောက်မှုရှိ/မရှိ၊ လေဝင်လေထွက်စနစ်၊ လုပ်ငန်းခွင် လူမှုဆက်ဆံရေးအခြေအနေများကို သိရှိနိုင်ပါရန် ဝန်ထမ်းများနှင့် တွေ့ဆုံဆွေးနွေးခဲ့ပါသည်။ တွေ့ဆုံဆွေးနွေးပွဲသို့ စုစုပေါင်းဝန်ထမ်း (၂၁) ဦးခန့် တက်ရောက်ခဲ့ပြီး အကြံပြုချက်စာရွက် (၂၁)စောင် ရရှိခဲ့ပါသည်။ တက်ရောက်သူများစာရင်းကို **နောက်ဆက်တွဲ** (၁၉)နှင့် အကြံပြုစာရွက်များကို **နောက်ဆက်တွဲ** (၂၀)တွင် ဖော်ပြထားပါသည်။

Manufacturing and Distribution of Various Types of Jellies

နည်းလမ်း	- တွေ့ဆုံဆွေးနွေးခြင်း
ရက်စွဲ	- 29.3.2018
တက်ရောက်သူဦးရေ	- စက်ရုံဝန်ထမ်း (၂၁) ဦး
နေရာ	- အစည်းအဝေးခန်း

ဇယား (၁၈) စက်ရုံဝန်ထမ်းများ၏အကြံပြုချက်များ

အကြံပြုချက်
လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးအွန္တရာယ်ကာကွယ်ရေးပစ္စည်းများနှင့်စပ်လျဉ်းရွှ်အကြံပြ
လုပ်ငန်းခွင်အကာအကွယ်ပစ္စည်းများအသုံးပြုခြင်း-
လုပ်ငန်းခွင်သုံး အကာအကွယ်ပစ္စည်းများ ထောက်ပံ့ထားကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်လာသူ
ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။
လုပ်ငန်းခွင်သောက်သုံးရေ-
သောက်ရေသန့်သောက်သုံးကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲတက်ရောက်သူဝန်ထမ်းများအားလုံးဖော်ပြထားပါသည်။
သန့်စင်ခန်းများအသုံးပြုခြင်း-
သန့်စင်ခန်းများမှာ သန့်ရှင်းပြီး ပြည့်စုံလုံလောက်မှုရှိကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်လာသူ
ဝန်ထမ်းများ အားလုံး ဖော်ပြထားပါသည်။
ဆေးကြောသန့်ရှင်းရေးစနစ်-
ဆေးကြောသန့်ရှင်းရေးမှာ ပြည့်စုံလုံလောက်ပြီး အဆင်ပြေကောင်းမွန်ကြောင်းကို တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်
လာသူ ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။
လုပ်ငန်းခွင်အလင်းရောင်ရရှိမှုအခြေအနေ-
လုပ်ငန်းခွင်အတွင်းအလင်းရောင် ကောင်းမွန်စွာရရှိပြီး လုံလောက်မှုရှိကြောင်းကို ဆွေးနွေးပွဲတက်ရောက်လာသူ
ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။
လုပ်ငန်းခွင်လေဝင်လေထွက်စနစ်-
လုပ်ငန်းခွင်အတွင်း လေဝင်လေထွက်စနစ်မှာ ကောင်းမွန်ကြောင်းကို ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်းများ
အားလုံး ဖော်ပြထားပါသည်။ ————————————————————————————————————
လုပ်ငန်းခွင်အလုပ်လုပ်ကိုင်မှုအခြေအနေနှင့်စပ်လျဉ်းရှုံအကြံပြုချက်
လုပ်ငန်းခွင်ဆူညံသံများအရြေအနေ-
လုပ်ငန်းခွင်အတွင်း ဆူညံသံမရှိကြောင်းကို ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်းများအားလုံးဖော်ပြထားပါသည်။
လုပ်ငန်းခွင်အနံ့အသက်/အခိုးအငွေများအခြေအနေ-
ဆွေးနွေးပွဲတက်ရောက်သူအားလုံးမှာ လုပ်ငန်းခွင်အနံ့အသက်/အခိုးအငွေ့များမရှိကြောင်းကိုဖော်ပြထားပါသည်။
လုပ်ငန်းခွင်အမှုန်အမွှားအခြေအနေ-
ဆွေးနွေးပွဲတက်ရောက်လာသူ အားလုံးမှာ လုပ်ငန်းခွင်အမှုန်အမွှား မရှိကြောင်းကို ဖော်ပြထား ပါသည်။
လုပ်ငန်းခွင်လူမှုဆက်ဆံရေးအခြေအနေနှင့်စပ်လျဉ်း၍အကြံပြုချက်
လုပ်ငန်းခွင်လူမှုဆက်ဆံရေးအနေဖြင့် လုပ်ငန်းခွင်ကြီးကြပ်သူများမှာကောင်းမွန်ပြီး၊ လုပ်ဖော်ကိုင်ဖက်များလည်း

အချင်းချင်း ရိုင်းပင်ကူညီမှုရှိကြောင်းကို ဆွေးနွေးပွဲတက်ရောက်လာသူ ဝန်ထမ်းများအားလုံး ဖော်ပြထားပါသည်။

### စက်ရုံအနီးပတ်ဝန်းကျင်ဒေသခံအများပြည်သူများနှင့်တွေ့ဆုံဆွေးနွေးခြင်း

တွေ့ဆုံဆွေးနွေးခြင်းကိုနည်းလမ်း (၂) မျိုးဖြင့်စီစဉ်ခဲ့ပါသည်။ တစ်မျိုးမှာ တွေ့ဆုံဆွေးနွေးပွဲအတွင်း ကိုယ်တိုင်ကိုယ်ကျဆွေးနွေးခြင်းနှင့် အခြားတစ်မျိုးမှာ ဖြန့်ဝေထားသော အကြံပြုစာရွက်များဖြင့်ရေသား အကြံပြုနိုင်ပါသည်။

ဆွေးနွေးပွဲတက်ရောက်သူများအနေဖြင့် စက်ရုံလုပ်ငန်းနင့်ပတ်သက်၍ ရှင်းလင်းပြီးနောက် သိရှိ လိုသည်များကို မေးမြန်းဆွေးနွေးအကြံပြုနိုင်ပါသည်။ တွေ့ဆုံဆွေးနွေးချိန်တွင်းတက်ရောက်သူများ အနေဖြင့် အကြံပြုစာရွက်များဖြင့်လည်း အကြံပြုနိုင်ပါသည်။

တွေ့ဆုံဆွေးနွေးပွဲကို ၂၀၁၈ ခုနစ် ဩဂုတ်လ (၅) ရက်နေ့တွင် ကစင်ကျေးရွာအုပ်စု အုပ်ချုပ်ရေး မျူးရုံး၊ လှိုင်သာယာမြို့နယ်တွင် ကျင်းပခဲ့ပါသည်။ အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးပွဲတွင် ပူးပေါင်းပါဝင် သူများထံမှ အကြံပြုချက်များ တောင်းခံခဲ့ပြီး အများပြည်သူနင့်တွေ့ဆုံ ဆွေးနွေးပွဲသို့ တက်ရောက်သူ (၃ဂ) ဦးရှိခဲ့ပြီး အကြံပြုစာရွက် (၂ဂ) ရရှိခဲ့ပါသည်။ တက်ရောက်သူများစာရင်းကို အစီရင်ခံစာ၏နောက်ဆက်တွဲ (၁၇) နှင့် အကြံပြုချက်စာရွက်များကို နောက်ဆက်တွဲ (၁၈) တွင် ဖော်ပြထားပါသည်။

<b>a a</b>	
နည်းလမ်း	- တွေ့ဆုံဆွေးနွေးခြင်း
ရက်စွဲ	- 5.8.2018
တက်ရောက်သူများ	- ဒေသခံအများပြည်သူများ၊ အုပ်ချုပ်ရေးအဖွဲ့အစည်းဝင်များ၊
	စက်ရုံမှတာဝန်ရှိသူများ၊ တတိယအဖွဲ့အစည်း။
နေရာ	- ကစင်ကျေးရွာအုပ်စု အုပ်ချုပ်ရေးမှူးရုံး၊ လှိုင်သာယာမြို့နယ်။
တွေ့ဆုံဆွေးနွေးပွဲတွင်	အဓိကထားဆွေးနွေးချက်များနှင့်အကြံပြုချက်များကို အောက်

ပါ

ဇယား တွင် ဖော်ပြထားပါသည်။

ဇယား (၁၉) အများပြည်သူနှင်တွေဆုံဆွေးနွေးပွဲမှ အကြံပြုချက်များ

္လက္လား (၄၆) အမွားပြင္မာသူမိုင္စံစၥဒိုဆိုစစ္မေနမိုးနဲ႔ အမ်ိဳးပဲခြဲ အျပာမျပာ				
စဉ်	တက်ရောက်သူ	အကြံပြုချက်များ		
Э	ဦးမျိုးတင့်			
J	ဦးသန်းဇော်ဦး	ပတ်ဝန်းကျင် လေထု၊ ရေထု၊ မြေထုကို သန့်ရှင်းအောင် ဆောင်ရွက်ပေးပါရန်		
9	မအေးအေးထက်			
9	ဒေါ် သူဇာညွှန့်	ပတ်ဝန်းကျင်ကို ဆိုးကျိုးသက်ရောက်မှုမရှိစေပဲ ကောင်းကျိုးဖြစ်စေရန်		
		ဝန်ထမ်းများ၏ ရပိုင်ခွင့်များအား ထောက်ပံ့ပေးပါရန်		
ງ	ဒေါ် ခင်အုန်းမြင့်	ဂျယ်လီထုတ်လုပ်ခြင်းလုပ်ငန်းကြောင့် ပတ်ဝန်းကျင်အပေါ် ဆိုးကျိုးမရှိစေပဲ		
		လုပ်ဆောင်ပေးပါရန်		
G	ဦးတိတ်စိန်	နိုင်ငံတော်အစိုးရ၏ လမ်းညွှန်မှုဖြင့်လုပ်ဆောင်ပြီး စက်ရုံပတ်ဝန်းကျင် လူမှုရေး၊		
		ကျန်းမာရေး ထိခိုက်မှုမရှိစေရန် လုပ်ဆောင်ပေးပါရန်		
$\gamma$	ဦးစိန်သောင်း			
ର	ဦးစိုးမြင့်	စက်ရုံပတ်ဝန်းကျင်သန့်ရှင်းစေရန် လုပ်ဆောင်ပေးစေချင်ပါသည်။		
୧	ဦးမြသွင်			
00	ဦးမျိုးသူ	ကောင်းသောလုပ်ဆောင်ခြင်းကြောင့်ကျေးဇူးတင်ပါသည်။		
၁၁	မမြင့်မြင့်အေး	ကလေးများကျန်းမာရေးအတွက် ဆိုးဆေးသုံးစွဲမှုလျော့ချပေးစေချင်ပါသည်။		

Manufacturing and Distribution of Various Types of Jellies

· · · · · ·	· · · ·	
၁၂	ဦးကြည်စိုး	စက်ရုံပတ်ဝန်းကျင်ကိုသန့်ရှင်းအောင်ဆောင်ရွက်ပေးပါရန်
၁၃	ဒေါ် အေးသွန္တာ	စက်ရုံမှ စွန့်ပစ်ရေဆိုးများကြောင့် ပတ်ဝန်းကျင်အပေါ် ဆိုးကျိုးသက်ရောက်မှု
		မရှိစေရန်ဆောင်ရွက်ပေးစေချင်ပါသည်။
၁၄	යෝ රෛටේ පිට	ဂျယ်လီစားသုံးမှုမှာကလေးများ အများဆုံးဖြစ်နေပါသဖြင့် ကျန်းမာရေးနှင့်
		ညီညွှတ်စေရန် ဆောင်ရွက်ပေးစေချင်ပါသည်။
၁၅	ဒေါ် ဇာဇာထက်	လုပ်ငန်းခွင်ရှိဝန်ထမ်းများ၏ကျန်းမာရေးနှင့်ဘေးကင်းရေးဆောင်ရွက်ပေးပါရန်
၁၆	3ේ	ဂျယ်လီထုတ်လုပ်ခြင်းကြောင့် ပတ်ဝန်းကျင်ညစ်ညမ်းမှုမရှိစေရန် ဆောင်ရွက်ရန်
၁၇	යාද්රට්යෙ	ကလေးများကျန်းမာရေးအတွက် ဆိုးဆေးသုံးစွဲမှုလျော့ချပေးစေချင်ပါသည်။
		စက်ရုံ၏ထုတ်လုပ်မှုဖရိယာသန့်ရှင်းမှုရှိစေရန်
		ဂျယ်လီထုတ်လုပ်မှုအတွက် ကျန်းမာရေးမထိခိုက်စေပဲ ထုတ်လုပ်စေချင်ပါသည်။
၁၈	မသီတာ	ပတ်ဝန်းကျင်ကိုသန့်ရှင်းအောင်ဆောင်ရွက်ပေးပါရန်
		စက်ရုံဝန်ထမ်းများ၏ကျန်းမာရေးထိခိုက်မှုမရှိစေရန်
		ဂျယ်လီစားသုံးမှုမှာကလေးများ အများဆုံးဖြစ်နေပါသဖြင့် ကျန်းမာရေးနှင့်
		ညီညွှတ်စေရန် ဆောင်ရွက်ပေးစေချင်ပါသည်။
၁၉	ဒေါ်စုဝေ	ပတ်ဝန်းကျင်ကိုသန့်ရှင်းအောင်ဆောင်ရွက်ပေးပါရ
		ဂျယ်လီထုတ်ပိုးမှုများကို သန့်ရှင်းစေရန်ဆောင်ရွက်ပေးပါရန်
		ဓါတုဆိုးဆေးများမသုံးစွဲစေရန်
		ပတ်ဝန်းကျင် လေထု၊ ရေထု၊ မြေထုကို ညစ်ညမ်းမှုမရှိစေရန် ဆောင်ရွက်ပါရန်
		ကလေးများကျန်းမာရေးနှင့်ညီညွှတ်သောအစားအစာဖြစ်စေရန်အကြံပြုပါသည်။
		စက်ရုံပတ်ဝန်းကျင်သန့်ရှင်းအောင်ဆောင်ရွက်ပေးပါရန်
၂၀	ဒေါ် ဆွေဆွေဦး	ဓါတုဆိုးဆေးများသုံးစွဲခြင်းမပြုရန်
		ဂျယ်လီထုတ်ပိုးမှုများကို သန့်ရှင်းသပ်ရပ်စွာပြုလုပ်ပေးပါရန်
		ကလေးများ၏ကျန်းမာရေးနှင့်ညီညွှတ်သောအစားစာဖြစ်စေရန်အကြံပြုပါသည်။

### အကြံပြုချက်များအပေါ် စက်ရုံမှဆောင်ရွက်ပေးမည့်အစီအစဉ်

Green Myanmar Environmental Services (GMES) Co., Ltd မှ လုပ်ငန်းရှင်ထံသို့ တောင်းခံသောစာကို ၂၀၁၈ ခုနှစ်၊ သြဂုတ်လ (၁၇) ရက်နေ့တွင် ပေးပို့ခဲ့ပြီး Thai Faster Products & M.K Co., Ltd မှ အများပြည်သူများ၏ အကြံပြုချက်များအပေါ် ဆောင်ရွက်ပေးမည့်အချက်များကို အီးမေးလ်ဖြင့် ၂၀၁၈ ခုနှစ် သြဂုတ်လ (၁၇) ရက်နေ့တွင် ပေးပို့ခဲ့ပါသည်။ ၎င်းတို့ကို အစီရင်ခံစာ၏ နောက်ဆက်တွဲ (၂၁)နှင့် (၂၂) တွင် ဖော်ပြထားပါသည်။

### နိဂုံး

ယခုကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ လေ့လာမှုသည် အခြေခံအချက်အလက်များ၊ ဆင့်ပွားအချက်အလက်များ၊ စီမံကိန်းအဆိုပြုသူမှပံ့ပိုးသောအချက်အလက်များ၊ စီမံကိန်းနှင့် သက်ဆိုင် သည့် လက်ရှိလေ့လာမှုများနှင့်အစီရင်ခံစာ၊ ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြပ်ကြည့်ရှုရေးနှင့် ပူးပေါင်း ဆောင်ရွက်သူများအပေါ် အခြေခံထားပါသည်။ လုပ်ငန်းဆောင်ရွက်မှုအဆင့်တွင် စီမံကိန်းအကောင် အထည်ဖော်ဆောင်ရွက်မှုကြောင့် ဖြစ်နိုင်ချေရှိသော ပတ်ဝန်းကျင်ဆိုင်ရာသက်ရောက်မှုများ၏ အကဲဖြတ် ခြင်းများကို အဖြစ်နိုင်ဆုံး အရည်အသွေးနှင့်ပမာဏာအလိုက် ဆောင်ရွက်ခဲ့ပါသည်။ ဤ ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းအစီရင်ခံစာသည် အဆိုပြုစီမံကိန်းနှင့်ဆက်စပ်သော ဖြစ်နိုင်ချေရှိမည့် ပတ်ဝန်းကျင်ဆိုင်ရာ

Green Myanmar Environmental Services Co., Ltd.

ထိခိုက်နိင်မှုများကို ဖော်ပြထားပြီး ဆိုးကျိုးသက်ရောက်မှုများအတွက် ကာကွယ်မှုများနှင့်လျော့နည်းစေရေး အစီအမံများအတွက် အကြံပြုချက်များကို လုပ်ဆောင်ထားပါသည်။

# တွေ့ရှိချက်

လေထုညစ်ညမ်းခြင်း

ပတ်ဝန်းကျင် လေထုအရည်အသွေးတွင် အမှုန်အမွှားများ (PM10 & PM2.5) တို့သည် အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များထက် မြင့်မားနေသည်ကို တွေ့ရှိရပါသည်။ ဆာလဖာဒိုင်အောက်ဆိုဒ်တန်ဖိုးသည် အနည်းငယ်မြင့်မားနေပြီး အခြားသော ပါရာမီတာ များသည် လမ်းညွှန်ချက်အတွင်း ရှိနေပြီး လုပ်ငန်းခွင်လေထုအရည်အသွေးတွင် အမှုန်အမွှားများ (PM10 & PM2.5) တို့သည် လမ်းညွှန်ချက်အတွင်းရှိပါသည်။

# ရေထုညစ်ညမ်းမှု

စွန့်ပစ်ရည်နှင့်အဝီစိတွင်းရေများ ညစ်ညမ်းမှုသည် လမ်းညွှန်ချက်တန်ဖိုးထက်အနည်းငယ် ပိုများ နေပါသည်။ သောက်သုံးရေ အရည်အသွေးသည် ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့အစည်း၏ လမ်းညွှန်ချက် အတွင်း ရှိနေပါသည်။ အခြားသော ရေအရည်အသွေးတန်ဖိုးများသည် လမ်းညွှန်ချက်အတွင်းတွင် ရှိနေပါသည်။

# ဆူညံသံ

ပတ်ဝန်းကျင်ဆူညံသံအဆင့်သည် ခွင့်ပြုနိုင်သော အဆင့်အတွင်းဖြစ်သည်။ လုပ်ငန်းခွင်တွင် ဆူညံသံအဆင့်ကို စောင့်ကြည့်စစ်ဆေးခြင်းလုပ်ဆောင်ပြီး လုပ်ငန်းခွင်တွင် ခွင့်ပြုနိုင်သော ကန့်သတ်ချက် များအတွင်း ရှိနေပါသည်။ အရည်အသွေးအရ အကျိုးသက်ရောက်မှုများ၏ အရေးပါမှုကို အကဲဖြတ်ခြင်း အပေါ် အခြေခံ၍ ၎င်းတို့သည် တွေ့ရှိချက်များ၏ အကျဉ်းချုပ်တင်ပြထားခြင်းဖြစ်ပါသည်။

# စွန့်ပစ်အမှိုက်များထွက်ရှိမှု

စွန့်ပစ်ပစ္စည်းများ စွန့်ပစ်မှုတွင် အရေးကြီးသော ပြဿနာများမရှိကြောင်းနှင့် သတ်မှတ် လမ်းညွှန်ချက်များနှင့်အညီ အမှိုက်များကို စနစ်တကျစွန့်ပစ်သည်ကို တွေ့ရှိရပါသည်။

လုပ်ငန်းလည်ပတ်ခြင်းအဆင့်အတွက် လေထုညစ်ညမ်းခြင်း၊ ရေထုညစ်ညမ်းခြင်း၊ မြေထု ညစ်ညမ်းခြင်း၊ လူမှုစီးပွားဆိုင်ရာကဏ္ဍများနှင့် ကျန်မာရေးနှင့်ဘေးအွန္တရာယ်ကင်းဝေးရေးတို့သည် အလယ် အလတ်အွန္တရာယ်ရှိနိုင်ပြီး မီးဘေးအွန္တရာယ်သည် အဓိကအွန္တရာယ် ဖြစ်ပါသည်။ သို့သော် လျော့နည်း သက်သာစေရေး အစီအမံများကို အကောင်အထည်ဖော်ပြီးနောက် ကျန်ရှိသော ကြွင်းကျန်သက်ရောက်မှု များသည် အွန္တရာယ်နည်းပါးပြီး လက်ခံနိုင်ဖွယ်ရှိပါသည်။

# အကြံပြုချက်များ

လုပ်ငန်းလည်ပတ်မှုအဆင့်တွင် ဖြစ်နိုင်ရေရှိသော အကျိုးသက်ရောက်မှုများအပေါ် အခြေခံ၍ သဘာဝပတ်ဝန်းကျင်၊ လူမှုရေးနှင့် ကျန်းမာရေး၊ ဘေးအွန္တရာယ်ကင်းဝေးစေရေးတို့အတွက် ပတ်ဝန်းကျင် ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်ကို ယခုအစီရင်ခံစာတွင် တင်ပြထားပါသည်။ ပတ်ဝန်း ကျင်စီမံခန့်ခွဲမှု အစီအစဉ်ကို ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏ တည်ဆဲ ပတ်ဝန်းကျင် ဆိုင်ရာမူဝါဒ၊ ဥပဒေများ၊ နည်းဥပဒေများနှင့် ညွှန်ကြားချက်များနှင့်အညီ ရေးသားထားပါသည်။ သက်ရောက်မှုများကို သက်ဆိုင်ရာ

အလိုက် သတ်မှတ်ထားပါသည်။ စီမံကိန်းလုပ်ငန်းတွင် မီးဘေး အန္တရာယ်ကို ဂရုပြုရပါမည်။ အခြားအချက် မျာအနေဖြင့် ရေအရင်းအမြစ်များ၊ လျှပ်စစ်အားသုံးစွဲမှု တို့ဖြစ်ပါသည်။ မီးဘေးအန္တရာယ်ကို လျော့ချနိုင်ရန် အကြံပြုချက်များအနေဖြင့်-

- မီးဘေးအန္တရာယ်ကိုလျော့ချရန်အတွက် မီးဘေးကြိုတင်ကာကွယ်ရေးစီမံချက်များကို (EMP) တွင် ပါရှိသည့်အတိုင်း အကောင်အထည်ဖော်ပြီး ၎င်းကို လိုက်နာရန်လိုအပ်ပါသည်။
- ရေသုံးစွဲမှုကို လျှော့ချနိုင်ရန် ရေမီတာနှင့် ရေချွေတာနိုင်ရေးကိရိယာများကို တပ်ဆင်ရန် အကြံ ပြုပါသည်။
- လှုုပ်စစ်အားသုံးစွဲမှုကို လျှော့ချနိုင်ရန်အတွက် နေ့အချိန်တွင် တတ်နိုင်သမှု သဘာဝအလင်းရောင်၊
   စွမ်းအင်ချွေတာသော မီးချောင်းများ၊ အော်တိုပန့်များနှင့် ပြောင်းလဲနိုင်သော အမြန်နှုန်း မောင်းနှင်
   သော မော်တာနှင့်အင်ဗာတာ အစား လေအေးပေးစက်များကို အသုံးပြုရန် အကြံပြုပါသည်။
- ဆာလဖာဒိုင်အောက်ဆိုဒ် ထုတ်လွှတ်မှုအဆင့် လျှော့ချရန် ဆာလဖာပါဝင်မှုနည်းသော ဒီဇယ်ကို မီးစက်များအတွက် အသုံးပြုသင့်ပါသည်။
- စက်ရုံဝန်းအတွင်း PM2.5 နှင့် PM10 ထုတ်လွှတ်မှုကို လျှော့ချရန်အတွက် အပင်များကို ပိုမိုစိုက်ပျိုးရန်၊ ကောင်းမွန်သော သန့်ရှင်းရေးလုပ်ငန်းများထိန်းသိမ်းရန်အကြံပြုပါသည်။ ဖုန်မထ စေရန် အခါအားလျော်စွာ ရေဖြန်းသင့်ပါသည်။
- စွန့်ပစ်ရေ၏နောက်ကိုမှုကို လျှော့ချရန်အတွက် အသုံးမပြုမီ သိုလှောင်ကန်အတွင်း ဦးစွ ာအထည်ကျစေရန် အမှုန်အမွှားများကို အနည်ထိုင်စေပါ။
- စွန့်ပစ်ရေ၏ညစ်ညမ်းမှုကို လျှော့ချရန်အတွက် စွန့်ပစ်ရေသန့်စင်ကန်တွင်သန့်စင်ပြီးမှ စွန့်ထုတ်ရန်။
- မတော်တဆဖြစ်ပွားမှုအွန္တရာယ်များ၊ ကျန်းမာရေး၊ ဘေးအွန္တရာယ်ကင်းဝေးရေးနှင့် မီးဘေး
   အွန္တရာယ်ဆိုင်ရာများကို ကြိုတင်ကာကွယ်ရေးအစီအမံများကို ဝန်ထမ်းများအားလုံး လိုက်နာ
   ဆောင်ရွက်ရပါမည်။
- စီမံကိန်းအဆိုပြုသူသည် ပြည်ထောင်စုမြန်မာနိုင်ငံ၏ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာမူဝါဒ၊
   ဥပေဒများ၊ နည်းဥပဒေများနှင့် ညွှန်ကြားချက်များကို လိုက်နာဆောင်ရွက်ရပါမည်။
- သက်ဆိုင်ရာအာကာပိုင်များမှ အတည်ပြုပြီးလျှင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို
   အကောင်အထည်ဖော်ရပါမည်။
- ပတ်ဝန်းကျင်စာရင်းစစ်အတွက် EMP ၏ မှတ်တမ်းများကို သိမ်းဆည်းထားရပါမည်။
- နှစ်စဉ် ပတ်ဝန်းကျင်ဆိုင်ရာအစီရင်ခံစာကို ပြန်လည် သုံးသပ်ပြီး ပေါ် ပေါက်လာသော
   စိုးရိမ်ပူပန်မှုများအတွက် လိုပ်အပ်သော ဆောင်ရွက်မှုများ ပြုလုပ်ရပါမည်။
- ဒေသတွင်းပတ်ဝန်းကျင်၏ လူမှုဖူလုံရေးမြှင့်တင်ရန်အတွက် ထိရောက်သော CSR ကို ဖွံဖြိုး တိုးတက်စေရန် အကောင်အထည်ဖော်သင့်ပါသည်။
- EMP ကို ထိထိရောက်ရောက် အကောင်အထည်ဖော်ခြင်းနှင့်လိုက်နာဆောင်ရွက်ခြင်းသည် ပတ်ဝန်းကျင်နှင့်လူမှုဝန်းကျင်အပေါ် ဆိုးကျိုးသက်ရောက်နိုင်မှုမျာကို လက်ခံနိုင်သောအဆင့်အထိ လျှော့ချရန်အတွက် အထောက်အကူ ဖြစ်စေနိုင်မည် ဖြစ်ပါသည်။

#### **1.0 INTRODUCTION**

#### 1.1 Background

Thai Faster Products and M.K. Company Limited is located at Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar. It is the joint venture company formed in accordance with the provision of Myanmar Company Act and the total investment is US \$ 2,000,000. It aims to achieve economic, environmental and social sustainability throughout the business and supply chain, improving the use of raw materials and, in turn, increasing the efficiency and profitability.

Thai Faster Products and M.K Co., Ltd. is a joint-venture company between Thai Faster Product Co., Ltd. (60 %), Mantakanok Co., Ltd. (30 %), and M.K Co., Ltd. (10 %).

Thai Faster Products Company Limited., a private company duly incorporated and organized under the laws of Thailand, Registration No. 0745555004749 having its registered address located at 99/99 Moo.7, Aom-Noy Sub-district, Kratumban District, Samutsakorn Province, Thailand.

Mantakanok Company Limited., a private company duly incorporated and organized umder the laws of Thailand, Registration No. 0575541000136 having its registered address located at 106/2, Charoen-rad Road, Bangklo Sub-district, Bangkolam District, Bangkok, Thailand.

M.K Company., a private company duly incorporated and organized under the laws of Myanmar, Registration No. 644 having its registered address located at No.333, Pyay Road, Sanchaung Township, Yangon, Myanmar.

#### **1.2** Salient Features of the Project

Thai Faster Products and M.K. Company Limited is planning to manufacture and distribute various types of jellies and salient features of the project are presented in Table 1.1. Table 1.1 Salient Features of the Project

DIN	
Project Name	Manufacturing and Distribution of Various Types of Jellies
Company name	Thai Faster Products and M.K. Company Limited (TFPMK)
Company Registration	No. 855 FC, 2013 ~ 2014
No.	
Project Address	Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan
	Industrial Zone, Hlaing Thar Yar Township, Yangon Region,
	Myanmar
Type of Land	Industrial Zone
Area of Land	2.036 Acres (87694.214 sq. ft.)
Duration of Investment	50 years and Extendable 10 years two times
Period of Land and	5 years (initial) and extendable for a further period up to 70 years
Building Lease	
Leaseholder	U Pyae Phyo
Established	5.2.2014
Test Run	2.1.2015

Table 1.1 Salient Features of the Project

Commercial Run	4.1.2017
Type of Business	Manufacturing and Distribution
Company Address	Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan
	Industrial Zone, Hlaing Thar Yar Township, Yangon Region,
	Myanmar
Surrounding	Right Side: Wet Ma Sut Wun Htauk Street
Environment	Left Side: Garment Factory (Myanmar Yoo Ho Co., Ltd)
Nearest Residential	Alae Village
Places	
Nearest Water Bodies	Hlaing River
Topography	Flat and Mainly Alluvium Area
Contact Person	Daw Win Sanda
Designation	Accountant
Contact Numbers	Ph: 09455640300
	E-mail: <u>thaifaster.mm@gmail.com</u>
Company Investment	US \$ 2,000,000
Form of Investment	Thai Faster Products Co., Ltd from Thailand 60 %
	Mantakanok Co., Ltd from Thailand 30 %
	M.K Co., Ltd from Myanmar 10 %
Water Resources	2 unit of 2- inch Tube well, depth 100 ft
Water Consumption	60,000 liter/day
Energy Source	Three-Phase Power Supply
Annual Electricity	912,000 kWh
Consumption	
Annual Fuel	Diesel 15,850 Gallon
Consumption	Paddy Husk 842.40 Ton
Finished Product	Various Truncs of Jollies
Finished Product	Various Types of Jellies Local Sales 90 %
	Export Sales 10 %
Estimated Employees	Male : 25 persons
Estimated Employees	Female : 43 persons
	Total : 68 persons (Permanent 64 / Temporary 4 )
Operating Time	Working Hours
	Monday to Friday 07:00 to 16:00 and
	07:00 to 17:30 (Overtime)
	Saturday 07:00 to 11:00
	No. of Working Days per Month : 26 days
	No. of Working Days per week : 6 days
	(Monday to Saturday)
	Shift : 1

#### **1.3** Need of the Project

Jelly products bring pleasure, fun and enjoyment to the consumers. They are produced on home scale as well as industrial level and provide the consumers with more value and great taste.

Thai Faster Products and M.K. Company Limited own and operates the factory for the production of various types of jellies in Hlaing Thar Yar Township, Yangon. The main aim
of the project is to produce safer and reliable products with human-centered, environmentoriented mind with safe materials and hygienic production.

Thus the project needs to prepare Environmental Management Plan (EMP) report. It is not only to obtain Environmental Clearance Certificate from Ministry of Natural Resources and Environmental Conservation, but also to understand the most likely impacts, to take environmental measures and to mitigate during operation phases of the project.

## 1.4 Objectives of EMP

EMP reflects the commitment of the management to protect the environment within and outside the project area. The objectives of the EMP are to

- Identify, access, analyze and evaluate the potential positive and negative impacts of the project on the biophysical, cultural and socioeconomic environment;
- Recommend appropriate environmental management measures for mitigation of negative impacts emanating from the project;
- Adequately describe all components of the project, so that the Authority can consider approval of a well-defined project;
- Propose mitigation measures of potential negative impacts and environmental disruption by the project activities;
- Propose EMP compliance monitoring and auditing.

## 1.5 Methodology Adopted

The report has been prepared on the basis of information on the factories activities supplied by the project proponent

The methodologies adopted for conducting this EMP are as follows;

• Desktop Research

Desktop research was used to establish an environmental information for the EMP. Consulted materials include articles, maps, internet and photographs

• Consultation with Stakeholders

Experts in relevant fields, leaders of thought in environmental matters, Non-Governmental Organizations, local communities have been consulted for their opinions on issues relating to the potential ecological and socio-economic impacts of the proposed project.

• Field Research

The fieldwork covered all relevant components of ecological, socioeconomic and health components of the environments.

• Laboratory Analysis

Samples collected during the one-season field sampling were analyzed in GMES Co., Ltd laboratory

## **1.6 Details of the Project Proponent**

Thai Faster Products and M.K Co., Ltd. is a joint-venture company between Thai Faster Product Co., Ltd. (60 %), Mantakanok Co., Ltd. (30 %), and M.K Co., Ltd. (10 %). The factory building has been in place since Thai Faster Products and M.K Company Limited's initial investment. Therefore, some minor prepared for the building. The lease agreement is as attached to Appendix (27) of EMP the report.

Sr. No.	Name	Citizenship & Passport No.	Address	
1	Thai Faster Product Co., Ltd.	Incorporated in	99/ 99 Moo,7 AomNoy sub-	
		Thai	district, Kratungban District,	
			Samutsakorn Province, Thailand	
	. Mr. Wichian Chaisathaporn	Thai PP No.	99/ 99 Moo,7 AomNoy sub-	
		Z110742	district, Kratungban District,	
			Samutsakorn Province, Thailand	
	B. Mr. Varith Bawonsakulwong	Thai PP No.	59/251 Klongkwang sub-district,	
		T 810962	Pasricharoen District, Bangkok,	
			Thailand	
2	Mantakanok Co., Ltd	Incorporated in	106/2, Charoen-rad Road,	
		Thai	Bangklo Sub-distriact, Bangkolam	
			District, Bangkok, Thailand	
	A. Mr. Paradorn Kunkongkaphan	Thai PP No.	1349/35 Charoennakorn Road,	
		AA1092866	banglamphulang, Klongsan,	
			Bangkok, Thailand	
3	M.K Co., Ltd	Incorporated in	333, Pyay Road, Sanchaung	
		Myanmar	Township, Yangon, Myanmar.	
	U Myint Oo	9/ Ma Ma Na	333, Pyay Road, Sanchaung	
		(N) 088757	Township, Yangon, Myanmar.	

Table 1.2 List of Investor

## **1.7 Details of Environmental Team**

Details of the EMP team are presented in the following Table.

Table 1.3 Details of the EMP Team

No	Title of Post	Term of Reference	Nominee, Organization, Transitional Consultant Registration Number
1	Chief Technical Manager	<ul> <li>Advise on the design of EMP</li> <li>Technical meeting &amp; Workshop</li> <li>Monitoring of EMP process</li> <li>Public consultation</li> <li>Quality Control and Check</li> <li>Data compilation &amp; analysis</li> </ul>	Engr. U Kyaw Soe Win Green Myanmar Environmental Services Experience in IEE processing No.0019
2	Air Quality Management Consultant	<ul> <li>Advise on Air Quality measuring</li> <li>Advise on Technical</li> <li>Advise on Air pollution analysis and mitigation measure</li> <li>Advise on Assessment and</li> </ul>	Engr. U Sein Thaung Oo Green Myanmar Environmental Services Professional Engineer

Green Myanmar Environmental Services Co., Ltd.

## Manufacturing and Distribution of Various Types of Jellies

		Calculation of base on air quality result	No.0023
		Advise on preparation of report	
3	Environmental Consultant	<ul> <li>Advise on the design of EMP</li> <li>Develop term of reference for duty &amp; responsibility among EMP team</li> <li>Advise on the environmental baseline</li> <li>Advise on the field survey</li> <li>Facilitate technical analysis</li> <li>Streamline the Environmental Management Plan</li> </ul>	Engr. Daw Khin Swe Aye Former Lecturer. Department of Chemical Engineering, Rangoon Institute of Technology No.0021
4	Consultant on Environmental Baseline	<ul> <li>Design of environmental baseline; methodology, sampling framework, field testing method, and analytical tool</li> <li>Training of field staff for baseline data collection</li> <li>Analysis and Report Preparation for Industrial Process, Potential Impact, Alternative Design, and Pollutant Control</li> <li>Brainstorming for Environmental Monitoring and Management</li> </ul>	Engr. Dr. Maung Maung Win, Retired Professor and Head, Chemical Engineering Dept. YTU and Consultant for Environmental Management in Myanmar, Thailand and USA No.0027
5	Consultant on Environmental Quality Management	<ul> <li>Assist in preparation of guideline for environmental sampling of air and water quality</li> <li>Monitor the sample collection</li> <li>Register and inspect the sample collected</li> <li>Assist in report preparation for environmental baseline</li> </ul>	Daw Khin Shwe Htay, Former Lecturer, Chemical Engineering Dept., YTU. Environmental Engineer No.0022
6	Environmental and Social Operation and Field Coordinator	<ul> <li>Develop operational checklist for Environmental Survey</li> <li>Facilitate technical meeting and record keeping</li> <li>Assist in data mining and secondary data collection</li> <li>Supervise field survey</li> <li>Coordinate with local authority and village level meeting</li> </ul>	U Khin Aung General Manager, Green Myanmar Environmental Services No.0025
7	Consultant for Laboratory Analysis	<ul> <li>Advise on data processing and laboratory testing</li> <li>Prepare instruction for laboratory testing</li> <li>Check the result of environmental laboratory testing</li> <li>Compare the laboratory result and</li> </ul>	U Myo Myint Retired Factory Manager of Alcohol Distillery Beelin, Ministry of Industry (1) No.0026

## Manufacturing and Distribution of Various Types of Jellies

		verification	
8	Specialist on	• Collecting field data for industrial	Engr. Daw Tin May Soe,
	waste	and municipal waste	Retired Professor & Head,
	management	Assist in Laboratory Testing	Chemical Engineering
		• Data processing, computing,	Dept., MTU.
		projection, modeling and analysis	No.0028
		Assist in report preparation	
9	Environmental	• Advise on the preparation of EMP	Engr. U Maung Maung Aye
	Consultant	• Develop terms of reference for	Construction Coordinator
		duty and responsibility among	Badamyar Topside
		EMP team	Construction,
		• Advise on the environmental	Total E&P Myanmar)
		baseline and field survey	
10	Environmental	• Develop operational checklist for	U Kyi Han Bo
	Operation and	Environmental Study	Quality Engineer
	Team Leader	• In charge for preliminary field visit	
		• Supervise field survey	Green Myanmar
		<ul> <li>Checking to the final report</li> </ul>	Environmental Services
11	Technician	Environmental and Social Survey	U Myo Thet Naung
		• Data analysis	Team leader
		• Report preparing and formatting	U Aung Kyaw Than
		in report propuling and formating	Monitoring Technician
			U Myo Min Htun
			Assistant Monitoring
			Technician
			Green Myanmar
			Environmental Services
			Co., Ltd

## **1.8** Structure of Report

The issue and the corresponding section of the report where it has been addressed is summarized in the following table.

 Table 1.4 Structure of the Report

Sr.	EMP Review Issues	Sections where
No.	LIVIT REVIEW ISSUES	Addressed
1	Introduction	Chapter 1
2	Policy, Legal and Institutional Framework	Chapter 2
3	Description of the Project and Production Process	Chapter 3
4	Governing Parameters and Surrounding Environment	Chapter 4
5	Potential Impacts Assessment and Mitigation Measure	Chapter 5
6	Environmental Management Plan and Monitoring Program	Chapter 6
7	Capacity Development and Training	Chapter 7
8	Public Consultation and Information Disclosure	Chapter 8
9	Conclusion and Recommendation	Chapter 9

Green Myanmar Environmental Services Co., Ltd.

# 2.0 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

In this section, policy, legal and institutional framework for the proposed project is discussed. The laws and rules considered in this chapter are related to the environmental, social, health and economic conditions. The discussed laws and rules are needed to be abided by the proponent for development of the proposed project.

## 2.1 Myanmar Regulatory Framework in Environmental Assessment

The Ministry of Natural Resources and Environmental Conservation (MONREC) has established environmental policies which broadly aimed at:

- Encourage respect for the environment by taking care of the environment;
- Ensuring environmental issues are integrated with economic matters to attain sustainable development;
- Reviewing and evaluating development plans to ensure the project developer follow the set environmental guidelines and polities;

MONREC issued the Environmental Impact Assessment Procedure on 29 December 2015, which defines detailed legal process regarding with EIA/IEE procedures. MONREC also issued the draft administrative instruction of environmental impact assessment procedure, hereafter called as the Instruction. The Instruction covers all process and documents defined in IEE/EIA procedures such as Project Proposal, Terms of Reference (TOR) for IEE/EIA, Initial Environmental Examination (IEE) Report, and Environmental Management Plan (EMP).

Myanmar Government issued the following environmental related laws.

- Environmental Policy in 2019,
- Myanmar Agenda 21 in 1997,
- National Sustainable Development Strategy in 2009,
- The Environmental Conservation Law in 2012,
- The Environmental Conservation Rules in 2014,
- The Environmental Impact Assessment Procedure and National Environmental Quality (Emission) Guidelines in 2015.

## 2.2 Myanmar Environmental Policy

The new Myanmar Environmental Policy provides long-term, strategic guidance for achieving a sustainable future of Myanmar. It requires the environmental protection into planning and decision-making at all levels of government and in all sectors. The detailed principles of the policy are aimed to achieve in harmony and balance between livelihood needs and development objectives and at the same time recognizing the value of Myanmar's ecosystems and the implications of climate change. This Policy ensures that environmental awareness and protection will be a central objective in Myanmar's sustainable development pathway.

Every nation has the sovereign right to utilize its natural resources in accordance with its environmental policies, but great care must be taken not to exceed its jurisdiction. It is the

Manufacturing and Distribution of Various Types of Jellies

responsibility of the state and citizen to preserve its natural resources for the benefit of present and future generations.

## 2.3 Existing Myanmar Laws

#### **2.3.1 National Laws and Regulations**

The following table 2.1 highlights a list of existing laws and regulations in Myanmar.

1	Xisting Laws and Regulations in Myanmar		
Sectors	Laws and Regulations		
Administrative	• The Explosive Act, 1887		
	• The Village Act, 1907		
	• The Essential Supplies and Services Act, 1947		
	• The Emergency Provision Act, 1950		
	• The Penal Code ,1961 (Amendment 2016)		
	• The Archive Properties (Amendment) Act, 1962		
	• The Territorial Sea and Maritime Zone Law, 1977		
	The Explosive Substances Act, 1989		
	• The Yangon Police Act, 1899		
	• The Constitution of the Union of Myanmar, 2008		
	• The City of Yangon Municipal Act, 1922 (Amendment 1961)		
	• (Amendment, 1991)		
	• The Constitution of the Union of Myanmar, 2008		
	• The Ward or Village Tracts Administration Law, 2012		
	• (mendment, 2012, 2016)		
	• The Myanmar Fire-brigade Law, 2015		
	Yangon City Development Committee Law, 2018		
Public Health	• The Poison Act, 1919		
	• The Penal Code of Offences Affecting the Public Health,		
	Safety Convenience, Decency and Morals, 1961		
	The Union of Myanmar Public Health Law, 1972		
	• The Narcotic Drugs and Psychotropic Substances Law, 1993		
	The Prevention and Control of Communicable Disease Law,		
	• 1995 (Amendment, 2011)		
	• The Control of Smoking and Consumption of Tobacco		
	• Product Law, 2006		
	• The Law Relating to Private Health Care Services, 2007		
	• (Amendment, 2013)		
	Occupational Health and Safety Law, 2019		
Environment,	The Yangon Water-works Act, 1885		
Natural	• The Embankment Act, 1909		
Resources	• The Underground Water Act, 1930		
	The Underground Water Act, 1930		
	The Conservation of Water Resources and Rivers Law, 2006		
	• The Environmental Conservation Law, 2012		
	• The Conservation of Water Resources and Improvement of		

Table 2.1 Existing Laws and Regulations in Myanmar

	River Systems Rule, 2013
	• The Prevention of Hazard from Chemical and Related
	• Substances Law, 2013
	• The Environmental Conservation Rules, 2014
	Ozone Depleting Substances: Notification No.37/2014
	• The Environmental Impact Assessment Procedures, 2015
	• The National Environmental Quality (Emission) Guidelines, 2015
	• The Forest Law, 2018
	• Protection of Biodiversity and Protected Area Law, 2018
Labor, Social	• The Workmen's Compensation Act, 1923 (Amendment, 2005)
and	• The Leave and Public Holidays Act, 1951 (Amendment, 2014)
Welfare	The Labor Organization Law, 2011
	<ul> <li>The Settlement of Labor Disputes Law ,2012(Amendment, 2014)</li> </ul>
	<ul> <li>The Minimum Wages Law, 2013</li> </ul>
	<ul> <li>The Minimum Wages Rules, 2013</li> </ul>
	<ul> <li>The Natural Disaster Management Law, 2013</li> </ul>
	<ul> <li>The Development of Employment and Skill Law, 2013</li> </ul>
	<ul> <li>The Social Security Law, 2014</li> </ul>
	<ul> <li>The Social Security Rules, 2014</li> </ul>
	<ul> <li>The Payment of Wage Law, 2016</li> </ul>
Science and	<ul> <li>The Fugment of Wage Law, 2010</li> <li>The Science and Technology Development Law, 1994</li> </ul>
Technology	The Selence and Teenhology Development Law, 1994
Industrial and	The Factories Act, 1951 (Amendment, 2016)
Trade	<ul> <li>The Private Industrial Enterprise Law, 1991</li> </ul>
	<ul> <li>The Export and Import Law, 2012</li> </ul>
	The Standardization Law, 2014
	Consumer Protection Law, 2019
	Industrial Design Rights Law, 2019
	<ul> <li>The Prevention of Hazard from Chemical and Related</li> </ul>
<ul> <li>Substances Law, 2013</li> </ul>	
	<ul> <li>The Prevention of Hazardous form Chemical and Related</li> </ul>
	Substances Rules, 2016
Economic and	The Myanmar Insurance Law, 1993
Finance	• The Myanmar Foreign Investment Law, 2012 (Amendment, 2015)
	<ul> <li>The Myanmar Foreign Investment Rules, 2013</li> </ul>
	• The Myanmar Citizen Investment Law, 2013 (Amendment, 2015)
	<ul> <li>Myanmar Investment Commission Notification No.1/2013 and</li> </ul>
	50/2014
	Ministry of National Planning and Economic Development:
	Notification No.81/2014
	• The Myanmar Investment Law, 2016 (Amendment 2019)
<ul> <li>The Myanmar Investment Rules, 2017</li> </ul>	
	• Union Tax Law, 2018
Agriculture and	The Law Relating to Aquaculture, 1989
Aquaculture	<ul> <li>The Plant Pest Quarantine Law, 1993</li> </ul>
	<ul> <li>The Farmland Law, 2012</li> </ul>
	The Farmland Rules, 2012

Transportation	• The Obstruction in Fairway Act, 1881
	• The Yangon Port Act, 1905 (Amendment, 1959)
	• The Defile Traffic Act, 1907
	• The Ports Act, 1908
	• The Highway Law, 2000 (Amendment, 2015)
	• The Inland Steam Vessels Act, 1917
	• The Motor Vehicle Rules, 1989
	• The Motor Vehicles Law, 2015
Culture and	• The Protection and Preservation of Cultural Heritage Region Law,
Heritage	1998 (Amendment, 2009)
Energy	• The Electricity Law, 2014
	• The Oilfields Act, 1918 (Amendment, 2010)
	• The Petroleum Act, 1934 (Amendment, 2010)
	• The Petroleum Rule, 1937

## 2.4 International Conventions, Treaties and Agreements

Myanmar has signed a number of international treaties related to the environment which may have implications for the project. The following table presents a list of the conventions signed by Myanmar to date that are potentially relevant to the Project.

1 au	The 2.2 International Conventions, Treates and Agreements
1	Convention Concerning the Protection of the World Cultural and Natural Heritage
2	Montreal Protocol on Substances that Deplete the Ozone Layer & all amendments
3	Stockholm Convention on Persistent Organic Pollutants
4	Convention on Biological Diversity
5	Cartagena Protocol on Biosafety
6	International Tropical Timber Agreement
7	Ramsar Convention on Wetlands
8	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
9	ASEAN Agreement on the Conservation of Nature and Natural Resources
10	United Nations Convention to Combat Desertification
11	United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol
12	ASEAN Agreement on Trans-boundary Haze
13	Vinnea Convention for the Protection of the Ozone layer, 1985 (Reified 1993)
14	Basel Convention on the Control of Trans boundary Movements of Hazardous Wastes and their Disposal at 22 March 1989 (Reified 2015)
15	London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, 1990 (Ratified 1993)
16	Global Tiger Forum, India in August 1994.

Table 2.2 International Conventions, Treaties and Agreements

Manufacturing and Distribution of Various Types of Jellies

## 2.5 Overview Myanmar Legislation Relevance to the Project

I.

The overview of Myanmar legislation relevance to the project is as follows:

 Table 2.3 Myanmar Legislation Relevance of the Project

The Penal Code (1861)

The insight of relevant provisions to the project

• Voluntarily corrupts or fouls the water of any public spring or reservoir, so as to render it less fit for the purpose for which it is ordinarily used shall be punished. [section 277]

Administrative Sector

• Voluntarily vitiates the atmosphere in any place, so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighborhood or passing along a public way shall be punished. [section 278]

• Doing any act so rashly or negligently as to endanger human life or to be likely to cause hurt or injury to any other person with any explosive substance or machinery or, fails to guard sufficiently against any probable danger to human life from that substance or such machinery, shall be punished. [section 286, 287]

The Ward or Village Tract Administration Law (2012)

• The ward or village tract administrator shall cause the residents in ward of village tract to work and live peacefully and tranquilly. [section 12 (c)]

The Myanmar Fire Brigade Law (2015)

• Factory, industry, the business owner or manager of endangered from fire safety shall form the reserved fire brigade and shall keep the equipment related to fire safety. [section 25]

II. Environmental Conservation Sector

The Environmental Conservation Law (2012)

The following provisions are particularly relevant to Environmental Impact Assessment requirements and this project:

For waste disposal,

- A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards. [section 14]
- The owner or occupier of any business, material or place which causes a point source of pollution shall install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduce or eliminate environmental pollution. If it is impracticable, it shall be arranged to dispose the wastes in accord with environmentally sound methods. [section 15]

For prior permission,

• No one shall, without the prior permission operate business, work-site or factory, workshop which is required to obtain the prior permission under this law. [section 28]

The Environmental Conservation Rules (2014) MOECAF (Now in MONREC) launched Environmental Conservation Rules on June 5th, 2014. The Rules reinforce the obligation for project developers to submit an EIA or an IEE. It aims to establish and adopt the necessary programs for the conservation and enhancement of environment, protection, control and reduction of pollution in environment, and conservation. The Environmental Conservation Rules stipulate the following relevant articles under Chapter (XI) Environmental Impact Assessment. The Ministry shall determine the categories of project, business, service or activity which shall conduct environmental impact assessment. [section 52] The government department, organization or an individual who would develop the categories of project, business, service or activity stipulated under section 52: a. Shall carry out environmental impact assessment for his project, business, service or activity; b. Shall submit that the environmental impact assessment is intended to conduct by which third party or an organization to the Ministry in advance; c. Shall submit the environmental impact assessment report to the Ministry. [section 54] The person who carries out any project, business or activity shall arrange and carry out • for conducting the environmental impact assessment for any project, business or activity by a qualified third person or organization accepted by the Ministry. [section 561 The Ministry shall, on submission that the environmental impact assessment is intended • to conduct by which third party or an organization under section 54 (b) to the Ministry in advance, determine and decide after making scrutiny whether or not it is a suitable third party or an organization to conduct the environmental impact assessment. The decision of the Ministry relating to such matter is final and conclusive. [section 57] The Ministry shall form the environmental impact assessment report Review Body with • experts from relevant Government departments and organizations. [section 58] If private experts are included in the environment impact assessment report Review • Body, honorariums, expenses and allowances for them shall be borne from the environmental management fund. [section 59] The Ministry may assign the Department to scrutinize the report of environmental impact assessment prepared and submitted by a third party or an organization and report to the Ministry through the environmental impact assessment Review Body. [section 601 The Ministry may approve and reply the environmental impact assessment report or • environmental management plan with the guidance of the Committee. [section 61] The Environmental Impact Assessment Procedure (2015) The Environmental Impact Assessment Procedure stated that: All projects department, organization, local and organization, government or authority, company, cooperative, institution, Project expansions corporation, undertaken board, by development committee and organization, local government or authority, company, cooperative, institution, enterprise, firm, partnership or individual (and/or all Projects, field sites, factories and businesses including expansions of such Projects, field sites, factories and businesses identified by the Ministry, which may cause impact on environmental quality and are required to obtain Prior Permission in accordance with Section 21 of the Law, and Article 62 of the Rules) having the potential to cause Adverse Impacts, are required to undertake IEE or EIA or to develop an EMP, and to

obtain an ECC in accordance with this Procedure.

The National Environmental Quality (Emission) Guidelines (2015)

These national Environmental Quality (Emission) Guidelines (hereafter referred to as Guidelines) provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health.

- Para 4 states that these Guidelines refer to emission sources, and are intended to prevent or minimize adverse impacts to environmental quality or human health by ensuring that pollutant concentrations do not reach or exceed ambient guidelines and standards. The Guidelines apply to projects that generate noise or air emissions, and/ or that have either direct or indirect discharge of process water, wastewater from utility operations or storm water to the environment.
- Para 6 mentions the provisions of the general and applicable industry-specific Guidelines shall be reflected in project environmental management plan (EMP) and environmental compliance certificate (ECC) and together constitute a project's commitment to take necessary measures to avoid, minimize and control adverse impacts to human health and safety, and the environment through reducing the total amount of emissions generation; to adopting process modifications, including waste minimization to lower the load of pollutants requiring treatment; and as necessary, to apply treatment techniques to further reduce the load of contaminants prior to release or discharge.
- Para 7 states recognizing that these Guidelines are intended to prevent pollution through reducing the mass of pollutants emitted to the environment, dilution of air emissions and effluents to achieve maximum permitted values is not acceptable. Specified guideline values should be achieved, without dilution, at least 95 percent of the time that a project is operating, to be calculated as a proportion of annual operating hours.

The Conservation of Water Resources and Rivers Law (2006)

- No person shall dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk. [section 11 (a)]
  - III. City Development Sector

The Underground Water Act (1930)

- Digging tube wells shall be done only with the license issued by prescribing terms and conditions. [section 3]
- Digging underground water or attempt to do so shall be informed to the authorized official determined by the president. [section 5

Yangon City Development Committee Law (2018)

Provisions relating to environmental sanitation, pollution of air and water, and public health.

#### IV. Finance and Revenue Sector

The Myanmar Insurance Law (1993)

• An entrepreneur or an organization operating an enterprise which may cause damage to the life and property of the public or which may cause pollution to the environment shall affect compulsory General Liability Insurance with the Myanmar Insurance. [section 16]

Union Tax Law (2018)

• The taxes received by the Union contained in the laws relating to expenditure under the budget are the taxes earmarked for collection in table (1) of this law for the

Indi Faster Products & M.K Co., Ltd.
relevant financial year [acation 2]
relevant financial year. [section 3]
• If the Tax Rates contained in this law should be amended, supplemented or
substituted, the Union Government shall submit the matter to the Pyidaungsu Hluttaw
so that it is decided after discussion. [section 4]
V. Biodiversity and Ecosystem Sector
The Forest Law (2018)
Provision to conserve water, soil, biological diversity and the environment; sustain
forest produce yields; protect forest cover; establish forest and village firewood plantations;
sustainably extract and transport forest products.
Protection of Biodiversity and Protected Area Law (2018)
The objective of this Law is to provide opportunities for more effective conservation
of forests while recognizing the rights and the potential roles of local communities.
VI. Health Sector
The Public Health Law (1972)
Includes a general provision that empowers Union Government to carry out
measures relating:
• To protect environment from gas, odor, dust, sound and radio activity which is
endanger in the public environment. [section 3 (1) (c)]
• To keep the factory, industry, work site produced and sell food clean. [section 3 (2)
(d)]
• Examine if necessary, in the government lab. [section 3 (2) (h)]
<ul> <li>To be cautions to be in conformity with the standard prescribed by the Union</li> </ul>
Government from time to time. [3 (2) (i)]
The Prevention and Control of Communicable Disease Law (1995)
• For prevention of the outbreak of Communicable Disease and effective control of
Communicable Disease when it occurs, the public shall, under the supervision and
guidance of the Health Officer of the relevant area, undertake the responsibility of
carting out the following environmental sanitation measures;
(a) in-door, out-door sanitation or inside the fence, outside the fence sanitation;
(b) well, ponds and drainage sanitation;
(c) proper disposal of refuse and destruction thereof by fire;
(d) construction and use of sanitary latrines;
(e) other necessary environmental sanitation measures. [ section 8 ]
The Control of Smoking and Consumption of Tobacco Product Law (2006)
• This law aims to protect from the danger which affects public health adversely by
creating tobacco-free environment and to up lift the health, economy, and social
standard of the public through control of smoking and consumption of tobacco
product. [section 3]
• The responsible person shall arrange the written statements that state non-smoking
area in the prescribed places. [section 9 (a)]
• Smoking area shall be arranged and statements that show specific places for smoking
area in non-smoking area provided in section 7. [section 9 (b)]
• No one shall smoke in no-smoking area. [section 9 (c)]No-smoking areas are
prescribed and smoking, burning, carrying, holding are liable to a fine. [section 7+17]
Consumer Protection Law (2019)
To regulate the liability of manufacturers, wholesalers, distributors and others
involved in the supply chain for defective goods, which until now has been largely regulated
by colonial era tort law which in large part was un-enforced and insufficient to appropriately
protect the rights of consumers in the modern economy?
protect the rights of consumers in the modern economy:

#### Manufacturing and Distribution of Various Types of Jellies

#### VII. Industrial Sector

The Petroleum Act (1934)

- Import, transport or storage of petroleum shall be abided by the rules made under section and terms and conditions of the license that requires obtaining under the rules. [section 3]
- Dangerous petroleum (petroleum lower than 76°F which is flammable) shall be warned as a duty. [section 6]

The Private Industrial Enterprise Law (1990)

- The salient basic principles to operate the industrial business are provided in section 3.
- To develop production in each and every economic business connected to industrial business.
- To avoid or decrease utility of technology which causes environmental pollution.
- To use energy in the least way.

The Export and Import Law (2012)

- No person shall export or import restricted, prohibited and banned goods. [section 5]
- Without obtaining license, no person shall export or import the specified which is to obtain permission. [section 6]

Prevention of Hazard from Chemical and Related Substances Law (2016)

- No one shall produce, treat and formulate, use, possess, store, distribute, sell, transport, import or export the chemical or related substances prohibited by the Central Leading Board. [section 33]
- No one shall operate the chemical and related substances business without license. [section 34]
- No one shall use the chemical or the related substances which are unregistered or annulled from the registered list or not met to the quality and norm in the chemical and related substance business. [section 35]
- A person who has obtained a license, shall put the insurance in accordance with the prescriptive stipulations to be able to pay the compensation, if the impact and damage is occurred on the Human Being and Animals or the environment in respect of the chemical and related substances business. [section 17]
- A person who has obtained a license shall apply the related chemical and related substances that will be used in his chemical and related substances business in accordance with the stipulations to the Central Supervisory Board. (section 20)

The Standardization Law (2014)

The aims of this Law are also related to this project.

- To enable to protect the consumers and users by guaranteeing imports and products are not lower than prescribed standard, and safe from health hazards. [section 3 (c)]
- To enable to protect manufacturing, distributing and importing the disqualified goods which do not meet the prescribed standard and those which are not safe and endangered to the environment. [section 3 (e)]
- The person who obtains the certificate of certification whose representative and successors shall oblige the mandatory standards. [section 29]

The Electricity Law (2014)

- No electrical business shall be operated other than the business contained in the permit by any permit holder. [section 45]
- No one shall produce, transmit, connect, contact and use the electric power without

electric safety certificate. [section 47] No one shall connect, waste, and utilize the electric power without the permission of • the permit holder. [section 52] No one shall cut off the electric power line, transfer electricity, destroy electrical equipment and used in any electrical business. [section 53] The Boiler Law (The Pyidaungsu Hluttaw Law No.39, 2015) A boiler shall be manufactured in accord with Myanmar standards and international standards. [section 6] The owner shall submit the certificate or provisional order when so requested by the • respective government department and organization as may be necessary. [section 15] The owner shall inform immediately to the inspector if any accident occurs. [section • 18] • The owner shall not use boiler without certificate or provisional order. [section 20 (a)] The owner shall not use boiler of which certificate or provisional order is void. • [section 20 (b)] • The owner shall not use boiler of which certificate or provisional order is revoked. [section 20 (c)] The owner shall not assign any person to charge the boiler used in the work except the • person who operates and maintains the boiler. [section 24 (b)] The boiler importer shall import the only boilers which are consistent with Myanmar • standards and international standards when importing boilers. [section 26] A boiler attendant shall comply with the terms and conditions contained in boiler • attendant certificate. [section 29 (b)] The boiler attendant shall not operate the boiler which is mot issued the certificate or • provisional order with his own volition or under the entrustment of the owner. [section 30 (b)] The boiler attendant shall not use the boiler at more than allowable pressure. [section • 311 Prevention of Hazard from Chemical and Related Substances Rules (2016) If the relevant Board of Inspection finds the violation on any prohibition in the law and rules, the Board of Inspection shall submit to the respective Supervisory Board for taking action under the law. [section 47] The relevant Board of Inspection shall carry out the regular inspection, surprise check and inspection due to information to chemical and related substances businesses. [section 48] Industrial Design Rights Law (2019) The objectives of this Law are as follows: (a)To protect the rights and interests of the owner of the industrial design and the inventors in accordance with this Law; (b)To support the development of industrial businesses by providing protection for industrial design creations; (c)To support the development and spread of industrial design technology. VIII. National Planning and Economic Development Sector The Myanmar Investment Law (2016) The objectives are to protect the invertors and their businesses in accordance with law, to create job opportunities for the people, to develop high functioning production, service, and trading sectors. [sections 3 (b), (c) and (e)] An investor who obtains permit or endorsement under this Law has the right to obtain

<ul> <li>a long-term lease of land or building from the owner if it is private land or building, or from the relevant government departments or government organization if it is land managed by the government, or land or building owned by the Union in accordance with the stipulations in order to do investment. Citizen investors may invest in their own land or building in accordance with relevant laws. [section 50 (a)]</li> <li>The Government guarantees not to nationalize any investment carrying out in accordance with the law. Except under the following conditions, the Government guarantees not to take any measures which expropriate or indirectly expropriate or is likely to effect a result in the termination of an investment: <ul> <li>(a) actually necessary for the interest of the Union or its citizen;</li> <li>(b) non discriminatory manager.</li> </ul> </li> </ul>
<ul><li>(b) non-discriminatory manner;</li><li>(c) measures in accordance with the applicable Laws;</li></ul>
(d) Prompt, fair and adequate payment of compensation. [section 52]
• The investor shall abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage. [section 65 (g)]
The Myanmar Investment Rules (2017)
• After obtaining the permit, the investor who requires environmental and social impact assessment shall submit the required performances on environmental and social impact assessments to the Commission along the course of operating business. [section 189]
IX. Transportation Sector
The Motor Vehicle Law (2015)
<ul> <li>No one is allowed to drive, request someone to drive, or park, motor vehicles in public places under the following conditions;</li> <li>(a) The motor vehicle is not registered.</li> </ul>
<ul><li>(b) The registration has been suspended, revoked or expired; the registration card is not displayed.</li></ul>
(c) The registration card has been revoked or is expired. [section 45]
<ul> <li>No one is allowed to drive, or allow to drive, motor vehicles in public places without risk insurance for others. This prohibition does not extend to passengers. [section 46]</li> <li>(a) No one is allowed to drive a motor vehicle in public places without carrying the driving license with him/her.</li> </ul>
(b) No one is allowed to drive a motor vehicle in public places without a driving license.
<ul> <li>(c) The owner of, and the person responsible for, motor vehicles are not allowed to give permission to someone without a driving license to drive in public places.[section 47]</li> </ul>
<ul> <li>No one is allowed to do the following in public places;</li> </ul>
(a) Driving above the speed limit or below the minimum speed.
<ul><li>(b) Driving a motor vehicle which endangers others.</li><li>(c) Driving a motor vehicle after the consumption of narcotic drugs or alcohol.</li><li>[section 49]</li></ul>
The Motor Vehicle Rules (1989)
<ul> <li>No vehicles shall carry more than the number or weight of goods which is permitted</li> </ul>

X.	Workforce	Sector
		~ • • • • • •

The Workmen's Compensa	tion Act (1923)
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- This law is for factories which have failed to register with the Social Security Office and to subscribe to the 2012 Social Security Law and Rules.
- Required to employees who become injured or who die in any accidents arising during and in consequence of their employment. Such compensation also must be made for diseases which arise as a direct consequence of employment, such as carpal tunnel syndrome. [section 3]

The Factories Act (1951)

Working hours

- Shall not exceed 8 working hours per day or 44 hours per week [section 59+62]
- Shall not exceed 48 hours per week for the work which has to be done continuously [section 59]
- There must be a minimum 30 minutes interval after each 5 working hours [section 63]
- The combined working hours and interval time shall not exceed 10 hours per day [section 64]
- The working days shall not exceed 6 days per week
- There must be one day holiday each week (Sunday). If Sunday service is required, there must be a substitution of another day. There must be substituted an alternative day-off. [section 61]

#### Overtime

- Shall not exceed more than 16 hours per week or, for continuous work, 12 hours per week
- The overtime wage shall be calculated as double the basic wage
- Permission of Factories and the General Labor Law Inspection Department must be obtained for an approval of a constant overtime policy

Calculation of Overtime Wages

- For salary earners: Overtime wage per hour = {(salary x 12 month) / 52-week x 44 (48) hrs} x 2
- For daily wages worker: Overtime wage per hour = {(daily wage x 6 day) / 44 (48) hrs} x 2
- Piece-work laborers: Overtime wage per hour = {(daily average wage x 6 day) / 44 (48) hrs} x 2

Worksite Safety and Health Measures

- The factory must be kept clean and the workspace must be situated away from drains, latrines or other things which create a bad or unhealthy smell. [section 13]
- Wastes must be disposed systematically. [section 14]
- There must be proper ventilation, light and heat. [section 15+19]
- There must be no dust or smoke in the hall or factory. [section 16]
- There must be clean drinking water in proper places for all workers. [section 20]
- Population of workers must not be dense & there must be sufficient light. [section 19]
- The latrines must be in suitable places. [section 21]
- The generators and other auxiliary units must be kept undercover. [section 23, 24]
- There must be arrangements made for any emergency cut out of electricity service. [section 26]
- In weaving or spinning machines, any female workers and any children must not be allowed to handle. [section 28

#### Manufacturing and Distribution of Various Types of Jellies

- Females and young workers are not allowed to lift heavy loads.
- Floors, stairs and paths must be well-built and hand rails are to be built and necessary covers must be placed. [section 34]
- Explosive and flammable substances should be covered and protected. [section 39]
- In every factory, the arrangement of escape routes and fire alarms must be kept. [section 40]

Welfare

- There must be washing and cleaning facilities for workers. [section 44+45]
- There must be sufficient seats for workers if a chance is given for sitting. [section 46]
- There must be sufficient First Aid Boxes. [section 47]
- If the workers in a factory exceed 250, doctors or nurses in clinic are to be appointed. [section 48]
- If the workers of a factory exceed 100, recreation centers and canteens are to be kept for food. [section 49]
- For factories with over 50 female workers, there must be a child nursery center available for the children under 6 year of age. [section 50]

The Leave and Holiday Act (1951)

The objectives are:

- To allow worker for leave and holiday allowances, religious or social activities with earn allowance, and benefits for Health allowances. Concerned workers: Daily wage workers/temporary workers/permanent workers.
- Causal Leave (6) days [section 5]
- (a) Casual leave of 6 days with wages is to be provided
- (b) Causal leave can be taken a maximum of 3 days at a time except in special cases
- (c) Causal leave cannot be joined with any other leave
- (d) Leave will be cancelled if it has not been used within a year.
- Earned Leave (10) days [section 4]
- (a) For continuous service of 12 months and above, 10 days of earned leave shall be entitled
- (b) If the service day is not 24 days, 1 day deduction from earned Leave is made,
- (c) Can be accumulated for up to 3 years.
- Medical Leave (30) days [section 6]
- (a) Workers are entitled to 30 days of medical leave with full pay if 6 months service has been completed
- (b) If 6 months service has not been completed, \_leave without pay' can be granted for medical needs
- (c) If not taken within a year, medical leave is void or cancelled.
- Maternity Leave [section 7-A]
- (a) 6 weeks maternity leave before confinement and at least (8) weeks after confinement
- (b) Entitled jointly with medical leave.
- Public Holidays (21) days [section 3]
- (a) Workers can enjoy time off with full pay

(b) If work is given on a public holiday, twice the rate of regular wages is required.

Constitution of the Republic of the Union of Myanmar (2008)

- The Union shall enact necessary laws to protect the rights of workers. [section 24]
- The Citizens shall enjoy equal opportunity in carrying out occupation. [section 349 (b)]
- The Union prohibits forced labor except hard labor as punishment for crime duly convicted and duties assigned by the Union in accord with law in the interest of public. [section 359]

Manufacturing and Distribution of Various Types of Jellies

Emplo	yment and Skill Development Law (2013)
Î	The facts required to be included & specified in the employment agreement [section 5]
	(1) Type of employment
	(2) Probation period
	(3) Wage, salary
	(4) Location of establishment
	(5) Term of agreement
	(6) Working hours (7) Davis off holidays and house
	(7) Days-off, holidays and leave
	(8) Working overtime
	(9) Meal arrangements within working hour
	(10) Accommodation
	(11) Medical treatment
	(12) Travel arrangements to/from work
	(13) Regulations to be followed by the employee
	(14) If the employee is sent to attend training, limitation agreed by the employee to
	continue his duty after the training
	(15) Employee resignation and termination of establishment
	(16) Termination of agreement
	(17) Obligations under the conditions of agreement
	(18) Termination of employment agreement by the mutual understanding of employer
	and employee
	(19) Any other matters
	(20) Specifying, amending and adding the conditions of agreement
	(21) Miscellaneous
•	Aforesaid specifications shall not be less than the benefits of existing laws
•	The employer shall send a copy of the employment agreement entered into by the
•	employer and employee to the relevant employment exchange office within the
	stipulated period and shall obtain its approval.
•	An employment agreement concluded before the entering into force of this law shall
	continue to be valid until the end of the term of the original agreement.
•	Counterfeiting the certificate shall be punished. [section 34]
The M	inimum Wages Law (2013) and The Minimum Wages Rules (2013)
	As to the preamble of this law, the objectives are:
•	To fulfill the basic needs of the workers and their families who are working in
	commercial establishments, production and servicing establishments, agriculture and
	livestock.
•	And, to develop the work performance and competitiveness of workers.
	The minimum wages law was passed by parliament in late 2013 and amounts were
	specified/ finalized by a national tripartite committee in mid-2015. Implementation of
	the new wage rates was required to start on 1 September 2015.
Duties	of the Employer
Duites	3,600 Kyats per 8-hour working day (450 Kyat/hour) shall be the minimum wage paid
•	to skilled employees of companies with more than 15 employees in all industries,
	throughout all of Myanmar.
•	50% of the minimum – 1,800 Kyats per 8-hour working day (225 Kyats/hour) – may
	be paid to completely unskilled newly hired workers engaged in a training/induction
	program up to a maximum of 3 months.
•	75% of the minimum – 2,700 Kyats per 8-hour working day (338 Kyats/hour) – may

be paid to newly hired employees during their 2nd 3 months of employment, regarded as a \_probationary period<sup>6</sup>.

The Social Security Law (2012) and the Social Security Rules (2014)

- The objective is benefit for sickness, maternity, death, employment injury, invalidity benefit, superannuation benefit by: giving medical treatment, providing cash benefit or granting a right to residency. [section 3]
- All establishments shall contribute to the social security fund from the salary of insured workers as follows:
  - (a) Health and social care fund: 2% from employer, 2% from employee
  - (b) Injury fund: 1% from employer
  - (c) The accepted maximum salary per month to qualify for participation in the social security fund is currently set at 300,000 kyats.
- kinds of social security funds are:
  - (a) Health and social care fund
  - (b) Family assistance fund
  - (c) Injury fund
  - (d) Invalidity benefit, superannuation benefit, and survivors' benefit fund
  - (e) Unemployment benefit fund
  - (f) Other social security fund (e.g. hosing plan).

For medical treatment and cash benefit for sickness;

- Beneficiaries have the right to take medical treatment at the permitted hospital or clinic for a period up to 26 weeks. [section 22 (a)]
- When the insured person/beneficiary is retired, 50% payment of medical treatments is entitled if social security contributions have been paid for more than 180 months. [section 29]
- Beneficiaries have the right to enjoy 60 percent of average wages, calculated against the most recent four-month working period, as a cash benefit, during a period of illness lasting up to maximum 26 weeks. [section 23]

For maternity benefits: [section 25, 26, and 27]

- (a) Benefits are allowed to be taken if the prior working period of an employee has been
- a minimum of one year and if there have been paid social security contributions by the worker for a minimum of six months.
- (b) Maternity leave may total six weeks before confinement and eight weeks after confinement, up to 14 weeks in total.

(c) An additional four weeks are allowed for maternity leave if twins have been delivered

(d) Up to a maximum of six weeks total leave is allowed to be taken in cases of miscarriage

(e) Full wages may be taken for prenatal examination at the rate one day per time and up to a maximum of seven times

(f) 70% of average wages of the previous year can be taken as maternity leave compensation before the birth

(g) An additional 50% of wages which can be taken once the child is born (additional 75% for twins, 100% for triplets). Hence, 120% of average wages will be

administered for the eight weeks of maternity leave which may be taken after birth (h) Has the right to take leave for medical treatment for their child up until one year after birth

(i) A father is entitled to take up to 15-days unpaid leave for infant care upon

Manufacturing and Distribution of Various Types of Jellies

confinement of his wife.

For funeral expenses

• If a Social Security insured person passes away, his or her beneficiary is entitled to receive five times their average month's wage. This is determined as the average wage of the last four working months of the deceased person.

The obligations of employers are:
(a) To inform immediately to the Social Security Office when an injury has happened to an employee. [section 54 (a)]
(b) To register their business in the Social Security Office within 30 days from the day of first business operations. [Rules]

- (c) To register every newly appointed employee with Social Security Office. [Rules]
- The employer who registered in accordance with the Social Security Law has the right to be exempted from the Workmen's Compensation Act.

The Payment of Wage Law (2016)

- Receipt of wages is made regularly when the work is completed or the time of agreed period. Unlawful deductions are not to be made.
- Resignation or own volition, dismiss or decrease of the employee shall be paid according to the provisions of section 4.

XI. Disaster Sector

Natural Disaster Management Law (2013)

- The objectives are to implement natural disaster management programs systematically and expeditiously in order to reduce disaster risks, to conserve and restore the environmental affected by natural disasters and to provide health, education, social and livelihood programed in order to bring about living conditions for victims. [section 3 (a), (d) & (e)]
- Organization or person that has been assigned responsibility under this law: [section 13 (a)-i, ii & iii]
- Preparatory and preventive measures for natural disaster risk reduction in pre-disaster period
- Emergency responses including search and during natural disaster
- Conservation of the environment that has been affected by natural disaster
- Applying knowledge and innovation to be a habit of safety and resilience at every
- level from National level to the ward or village tract level [section 14 (c)]
- When the natural disaster strikes, emergency responses including search and rescue include the following: [section 17 (h), (i)]
  - Conducting emergency response including search and rescue according to the type of natural disaster
  - Performing other duties assigned by this Law in respect of emergency responses including search and rescue.
- Rehabilitation and reconstruction activities to be carried out after disaster include the following: [section 18 (a)]
  - > Data collection and confirmation of damage and losses due to natural disaster
  - Aggrieved person who has been directly affected in any of the private own properties and has been loss of life or has been affected to the member due to any of the disaster risk reduction activities is entitled to compensation in accord with the stipulations. [section 37]

XII. Labor Sector

*The Labor Organization Law (2011) and The Labor Organization Rules (2012)* As to the preamble of this law, the objectives are:

- To protect the rights of the workers in accordance with section 24 of the Constitution
- To promote good relations between the employer and the worker
- To enable to workers to form an The Settlement of Labor Disputes Law d carry out the labor organizations systematically and independently.

Rights and Responsibilities of the Labor Organization

- The labor organizations shall have the right to carry out freely in drawing up their constitution and rules, in electing their representatives, in organizing their administration and activities or in formulating their programs
- The labor organizations have the right to negotiate and settle with the employer if the workers are unable to obtain and enjoy the rights of the workers contained in the labour laws and to submit demands to the employer and claim in accord with the relevant law if the agreement cannot be reached
- The labor organization has the right to demand the relevant employer to re-appoint a worker if such worker is dismissed by the employer and if there is cause to believe that the reasons of such dismissal were based on labor organization membership or activities, or were not in conformity with the labor laws
- The labor organizations have the right to send representatives to the Conciliation Body in settling a dispute between the employer and the worker
- In discussions with the Government between the employer and the complaining workers, the representatives of the labor organization also have the right to participate and discuss Have the right to participate in solving the collective bargaining of the workers
- Shall carry out peacefully the holding of meetings, strikes and the carrying out any other collective activities
- Shall assist in making agreements between the employer and the workers. [section 17 to 23]

#### Duties of the Employer

The employer shall:

- Recognize the labor organizations
- Allow the member of executive committee assigned by the labor organization to perform their duty not exceeding two days per month
- Shall assist as much as possible if the labor organizations requests help which is in the interest of the factory's workers. [section 29 to 31]

Prohibitions

No employer shall

- Lock-out any service without the permission of relevant conciliation body
- Lock-out any work during the settlement of dispute period
- Carry out an illegal lock-out; dismiss a worker for his membership in a labour organization or for the exercise of organizational activities or participating in a strike. [section 43+44]
- No worker shall

(a) Go on strike without informing in advance the relevant employer or the relevant conciliation body

(b) Go on strike during the settlement of dispute period

(c) Go on an illegal strike [section 45+46]

The Settlement of Labor Disputes Law (2012)(Amendment in 2016)

- As to the preamble of this law, the objectives are:
- To safeguard the rights of workers

#### Manufacturing and Distribution of Various Types of Jellies

- To promote a good relationship between employer and workers and creating a peaceful workplace
- To obtain the rights fairly, rightfully and quickly by settling disputes between employer and worker justly.

#### Forming Workplace Coordinating Committee

The employer shall, in an establishment which has 30 employees and above and if there is a labor organization,

- > Allow 2 nominated workers for each labor organization
- Assign employer representatives who are the same number as the representatives of the workers
  - If there is no labor organization,
- Organize election of 2 representatives of the workers
- Appoint 2 representatives of the employer

The term of such committees is one year.

Settlement of Dispute

- A party, employer or worker, may complain to the conciliation body.
- If he is not satisfied with the conciliation of Conciliation Body, may apply to the court. [section 23]
- The Conciliation Body shall refer the collective dispute which does not reach settlement to the relevant Arbitration Body. [section 25]
- No party shall be barred to proceed with the right to institute criminal or civil proceedings in respect of such dispute during conciliation or arbitration. [section 52]
- As a strike suspends the employment agreement temporarily, the employer shall not be liable to pay salary or allowance during such period to the workers who go on strike. [section 54]

XIII. Laws related to Occupational Health and Safety including Communicable Diseases

Occupational Safety and Health Law (2019)

The objectives of this law are:

(a) to implement Occupational Safety and Health matters effectively in the respective industries/ businesses;

(b) to determine the duties of relevant persons applicable under this law including employers and workers of lessen and mitigate occurrence of occupational diseases and occupational accidents;

(c) to cause relevant persons applicable under this law, employers and workers to take precaution and prevention against occupational hazards and occupational diseases;

(d) to improve the productivity and health of workers by preventing the occurrence of occupational accidents and occupational diseases for their safety;

(e) to create workplaces that are safe and good for health by prescribing the occupational safety and health standards relevant to the Union's status after considering international and regional standards; and

(f) to support and help research activities carried out for the development of occupational safety and health matters. [section 3]

• Any person who is currently conducting or wants to conduct any industry/ business to which this law applies shall, in accordance with the stipulations, apply to the Department for registration to enable to conduct occupational safety and health matters. [section 8(a)]

# 2.6 Institutional Framework of Myanmar Government Responsible for Project(1) Myanmar Investment Commission (MIC)

The Myanmar Investment Commission is a government-appointed body which is responsible for verifying and approving investment proposals and regularly issues notifications about sector-specific developments. The MIC is comprised of representatives and experts from government ministries, departments and governmental and nongovernmental bodies. It has been formed under the Foreign Investment Law and the Myanmar Citizen Investment Law. Objectives of MIC are as follows:

- To protect investors according to the new investment law promulgated by Union Hluttaw (Parliament)
- > To safeguard environmental conservation
- > To deeply emphasize on social impact
- > To practice accounting and auditing in accordance with international standard in financial matters including transparency and accountability
- To create job opportunities
- To abide existing labor law
- > To support corporate social responsibilities
- To transfer technology

The MIC issued a Notification on 30<sup>th</sup> June 1994 on the Protection of Environment stating that:

The Myanmar Investment Commission, at its meeting 8/94 held on 17<sup>th</sup> June 1994 has resolved that all projects established with the permission of the Commission shall be responsible for the preservation of the environment at and around the area of the project site. The enterprises are entirely responsible that they shall be able to control pollution of air, water and land, and other environmental degradation, and that they keep the project site environmentally friendly.

Consequently, it is hereby notified that the treatment plant, industrial wastewater treatment plant and other pollution control procedures should be promptly implemented and complies with the sanitary and hygienic rules and regulations set by the relevant authorities.

In the future proposals that are to be submitted to the Commission, either under the Union of Myanmar Foreign Investment Law or the Myanmar Citizens Investment Law, shall incorporate the provision in their contracts that they will undertake proper sewage and industrial wastewater treatment systems and other environmental control systems. The system used shall be in accordance with the rules and regulations specified by the respective development committees and local authorities.

#### (2) Directorate of Investment and Company Administration (DICA)

The Directorate of Investment and Company Administration (DICA) was formed under the Ministry of National Planning and Economic Development on October 13, 1993.

As the primary interface between businesses and the government, DICA is mandated to promote private sector development and to boost domestic and foreign investment by creating a conductive investment climate. DICA is taking several functions-

Manufacturing and Distribution of Various Types of Jellies

- ➤ as a regulator on investment and companies
- ➢ as a company registrar
- ➤ as the secretariat of MIC.

Furthermore, DICA is also responsible for drafting, negotiating and approving bilateral Investment Promotion and Protection Agreements and serves as a focal department for all ASEAN investment related affairs (e.g. ASEAN Comprehensive Investment Agreement, bilateral ASEAN Investment Agreements).

#### (3) Environmental Conservation Department (ECD)

The Environmental Conservation Department, one of the departments under the Ministry of Natural Resources and Environmental Conservation (MONREC) is responsible for implementing National Environmental Policy, strategy, framework, planning and action plan for the integration of environmental consideration into the national sustainable development process. The Objectives of ECD are as follows:

- > To implement the National Environment policy
- To develop short, medium and long-term strategy, policy and planning for the integration of environmental consideration into the sustainable development process
- > To manage natural resources conservation and sustainable utilization
- > To manage the pollution control on water, air and land for environmental sustainability
- To cooperate with government organization, civil societies, private and international organizations for the environmental affairs.

#### (4) Directorate of Industrial Supervision and Inspection (DISI)

Since 2<sup>nd</sup> December 2011, Ministry of Industry was newly reorganized with the combination of Ministry of Industry No.1 and Ministry of Industry No.2 to strengthen the organizations and effective managements.

The ministry organized with two Directorates, six Enterprises and one Central Research & Development Center as follows:

- Union Ministerial Office
- Directorate of Industry (DI) Directorate of Industrial Supervision and Inspection (DISI)
- ➢ No.1 Heavy Industrial Enterprise (HIE-1)
- ➢ No.2 Heavy Industrial Enterprise (HIE-2)
- ➢ No.3 Heavy Industrial Enterprise (HIE-3)
- Textile Industries (TI)
- Pharmaceutical and Foodstuff Industries (PFI)
- > Paper and Home Utility Industries (PHUI)
- Central Research and Development Center (CR & DC)

One of the policies of ministry is "To initiate green industries in order to ensure sustainable development without environmental impact and to utilize energy efficiently and renewable energy".

The tasks of DISI are:

- To inspect the industries according to the Private Industrial Enterprise Law (1990), to fulfill their requirements and to supply for development
- > To inspect and register the boilers according to the boiler law (2012)
- ➤ To generate, distribute, and use the electrical power in state own, corporative or private section according to the electrical power law (2014) and also to do electrical inspection for these cases.

## (5) Departmental Cooperation Team

The Departmental Cooperation Team was formed to provide the field inspection of the operation of business in accordance with section 14 of the Foreign Investment Law.

The objectives of the Departmental Cooperation Team are as follow:

- > To enhance foreign direct investment
- To facilitate business process
- > To make field inspection to the business operations
- > To provide one stop service

The structure of Departmental Cooperation Team is composed by representatives from the governmental departments:

- Directorate of Investment and Company Administration
- Customs Department
- Department of Commerce
- Directorate of Labor
- > Department of Immigration and National Registration
- > Ministry of Hotel and Tourism
- Internal Revenue Department
- Central Bank of Myanmar
- Ministry of Electricity and Energy
- > Directorate of Industrial Supervision and Inspection
- > Ministry of Natural Resources and Environmental Conservation
- > Ministry of Agriculture, Livestock and Irrigation

Manufacturing and Distribution of Various Types of Jellies

#### 2.7 Occupational Health and Safety Standards

At present, there are five Legal Instruments in Industrial Sector in Myanmar as follows:

- 1. The Private Industrial Enterprise Law, 1990.
- 2. The Factories Act, 1951
- 3. The Oilfield (Workers and Welfare) Act, 1951.
- 4. The Petroleum Act, 1934
- 5. The Oilfields Act, 1918

The OSH legislative framework in Myanmar is embodied in the Factories Act of 1951 and the Oilfield (Labor and Welfare) Act of 1951. The primary OSH regulator is the Factories and General Labor Laws Inspection Department (FGLLID). Other agencies involved in regulating OSH standards include:

- the Boiler and Electric Inspection Division (Ministry of Industries);
- Planning and Inspection Department (Ministry of Mines);
- Occupational Health Division (Ministry of Health);
- the Ministry of Construction;
- the Ministry of Agriculture and Irrigation; and
- the Yangon City Development Committee

Myanmar has a policy framework such as National Strategic Policy Document on workers' health. The framework includes elements such as:

- enactment of legislation,
- establishment of mechanisms for inter-sectorial coordination of activities,
- funding and resource mobilization for workers' health,
- strengthening the role and capacities of Ministries of Health and
- integration of objectives and actions for workers' health into national strategies Aspects of Workers' Health covered by this policy framework are:
- Occupational Health
- Occupational Safety
- Workplace Health Promotion
- Provision of Occupational Health Services
- Chemical Safety
- Environmental Health
- Prevention of Communicable Diseases at the work-place (HIV/AIDS, TB, malaria, avian influenza)
- Prevention of Non-communicable Diseases at the work-place (cancer, cardiovascular diseases)

## 2.7.1 Strategy to raise Occupational Safety and Health Standard

- 1. Set up National OSH Committee
- 2. Assist SME to Improve Work Conditions
- 3. Develop Capabilities of Inspectors
- 4. Upgrade Occupation Hygiene Laboratory
- 5. Upgrade Internal OSH Capabilities
- 6. Establish OSH Training Centre
- 7. International Collaboration to learn experiences

## 2.7.2 Roles of Stakeholders in Myanmar OSH Framework

## Developer / Client

Developer Profile

• A 'Developer / Client is anyone having construction or building work carried out as part of their business.

• This could be an individual, partnership or company and includes property developers or management companies for domestic properties.

• The developer or client, being the pay master at the top of the value chain, is in the best position to influence the Occupational Safety and Health (OSH) performance of the project.

• Depending on the objectives and requirements developers set the suppliers and contractors they decide to engage, and the resources they provide,

The eventual outcome can vary greatly.

## Role of the Developer / Client

## Developer / Client's Duties

On all projects, developer / client will need to:

- Check competence and resources of all potential contractors and suppliers.

- Ensure there are suitable management arrangements for the project including welfare facilities.

– Allow sufficient time and resources for all stages.

- Provide pre-construction information to designers and contractors.

- Must lead in Design for Safety (DfS). DfS refers to active identification and addressing of WSH risks right from the conceptual and design phase of construction projects.

– Appoint a principal contractor.

- Make sure that construction work does not start unless a construction phase plan is in place and there are adequate welfare facilities on site.

#### Manufacturing and Distribution of Various Types of Jellies

## <u>Designer</u>

## Designer Profile

• The term 'Designer has a broad meaning and relates to the function performed, rather than the profession or job title.

• Designers are those who, as part of their work, prepare design drawings, specifications, bills of quantities and the specification of articles and substances.

• This could include architects, engineers and quantity surveyors.

#### Role of the Designer

#### Designer's Duties

On all projects, Designer will need to:

- Eliminate hazards and risks during design stage.
- Provide information about remaining risks.

Where projects are notifiable under the Regulations, designers must also:

- Check that the client is aware of their duties and that a site representative has been appointed.
- Provide information needed for the health and safety of the all personnel involved in the project.

#### **Contractors**

Contractors Profile

- A 'Contractors' are those who are involved in construction, alteration, maintenance or demolition work. This could involve building, civil engineering, mechanical, electrical, demolition and maintenance companies, partnerships and the self-employed.
- All those who work in the construction industry have their part to play looking after their own health and safety and in improving the industry's health and safety record.

## Role of the Contractor

#### Contractor's Duties

On all projects contractors will need to:

- Plan, manage and monitor their own work and that of their workers.
- Check the competence of all their appointees and workers.
- Train their own employees.
- Provide work related information to their workers.
- Ensure that there are adequate welfare facilities for their workers.

In addition, where projects are modifiable under the Regulations, Contractors must also:

- Co-operate with the principal contractor in planning and managing work, including reasonable directions and site rules.
- Provide details to the principal contractor of any contractor engaged in connection with carrying out work.
- Inform the principal contractor of reportable accidents, diseases and dangerous occurrences.

## 2.7.3 Short Term / Long Term Plan for Effective Implementation

Occupational Safety and Health Management System (OSHMS) requires a 'Plan - Do – Check- Act' approach, based on the principle of continual improvement. OSHMS is structured into 14 distinct sections as follows:

- 1. Occupational Safety and Health Policy
- 2. Identification of Hazards
- 3. Assessment of Risks
- 4. Establishments of Occupational Safety and Health Objectives
- 5. Development of OSH Plan
- 6. Implementation of OSH Plan
- 7. Routine Monitoring and Improvement
- 8. Investigation of Work Related Accidents, Incidents and Diseases
- 9. Emergency Prevention, Preparedness and Response
- 10. Performance Monitoring and Measurement
- 11. Audit
- 12. Preventive and Corrective Action
- 13. Management Review
- 14. Continual Improvement

#### 2.8 Environmental Commitment

The general commitments by Thai Faster Products and M.K Co., Ltd are as follows;

- To comply with all Myanmar laws, rules and regulations, including Special Economic Zone Law and Clauses 14 and 15 of the Environmental Conservation Law (2012).
- To ensure that legal requirements are incorporated in production procedures for operational phase.
- To conduct environmental compliance audit at least annually during operational phase.
- To ensure implementation of company's CSR program.
- To ensure compliance with company's OSH policy.
- To submit the environmental monitoring report biannually.

The commitments regarding with environmental, social and health related considerations by the Thai faster Products and M.K Company and its principal contractor for respective environmental components are described in below table 2.4.

Field	No	Commitment	EMP Reference
Comoral		• Thai Faster Products and M.K Co., Ltd will comply with relevant targeted air quality, water quality and noise level.	Ch-2
General	2	<ul> <li>To ensure implementation of company's CSR program.</li> <li>To ensure compliance with company's OSH policy.</li> </ul>	Ch-2

Table 2.4 Key Environment Commitments

## Manufacturing and Distribution of Various Types of Jellies

		• To submit the environmental monitoring report biannually.	
	3	• The company will implement all of the items in the list of commitments.	
,			
	1	For Operation Phase, Company set the target value of ambient air quality in accordance with the NEQG.	Ch-2
Air Quality	2	The Company has installed exhaust fan to control the ventilation and temperature of the workplace area. Monitoring of air quality will be conducted in accordance with the EMP during operation phase.	Ch-5
	3	The results of air quality will be submitted to ECD according to monitoring schedule.	Ch-6
Water and	1	The Company has installed wastewater treatment plant (WWTP) and discharged into it for reducing of the wastewater quality.	Ch-3
Wastewater	2	Water quality will be conducted in accordance with the EMP during operation phase 3 times/ year.	Ch-5
Quality	2	Conduct the testing of wastewater parameters as per ECD guidelines and the results will be submitted to ECD according to monitoring schedule.	Ch-6
	1	For Operation Phase, Sufficient noise mitigation measures would be adopted in operation phase to comply with noise level standards by the National and other country standard Guideline.	Ch-2
Noise Quality	2	Noise control measure will be applied to all project equipment by using low noise equipment where practicable. For high noise which cannot be reduced, the mitigation measures will be applied such as using ear plus or earmuff.	Ch-5
	3	The results will be submitted to ECD according to monitoring schedule.	Ch-6
Soil Contamination	1	For Operation Phase, Thai Faster and M.K Company Limited will implement the mitigation measures for reduction of soil contamination effectively. Thai Faster and M.K Company Limited will provide training programs to related employees for handling, storage and disposal of solid wastes.	Ch-5 and Ch-6
Chemicals Transportation, Storage,	2	The proponent is prepared for the accident spill response procedure. The proponent will provide safe handling procedures of	Ch-5 and Ch-6

Green Myanmar Environmental Services Co., Ltd.

## Manufacturing and Distribution of Various Types of Jellies

	chemicals to related workers.	
	Thai Faster and M.K Company Limited will provide fire	
	chemical storage area.	
-		
1	<ul> <li>For Operation Phase,</li> <li>Thai Faster and M.K Company Limited is committed to follow the waste management plan and the brief descriptions of it is:</li> <li><i>Waste segregation</i></li> <li>Food waste</li> <li>Hazardous waste</li> <li>Non-hazardous waste</li> <li><i>Waste minimization</i></li> <li>Reuse and recycle where possible</li> <li><i>Waste disposal</i></li> <li>dispose and handle according to ECD guidalines</li> </ul>	Ch-5
	<ul> <li>dispose and handle according to ECD guidelines</li> <li>disposed by authorized waste collector</li> <li>sell to recycler for recyclable waste</li> </ul>	
2	Thai Faster and M.K Company Limited will follow the waste segregation plan, waste disposal plan and waste handling procedures described in EMP.	Ch-2
1	<ul> <li>For Operation Phase,</li> <li>Thai Faster Products and M.K Co., Ltd. is committed to</li> <li>implement the EMP for the workplace</li> <li>Control plan for dust and PM emission</li> <li>Control plan for noise</li> <li>Plan for contagious disease control</li> <li>Control plan for materials handling</li> </ul>	Ch-5 and Ch-6
	<ul> <li>Plan for hazardous chemical exposure</li> <li>Precautionary measures</li> <li>Health and safety awareness and training.</li> </ul>	
2	<ul> <li>Thai Faster Products and M.K Co., Ltd.is committed to provide adequate PPE for both normal use and specific use for employees.</li> <li>Thai Faster Products and M.K Co., Ltd.is committed is to provide sufficient drinking water for the workers.</li> <li>Thai Faster Products and M.K Company Limited will provide safety awareness training to the worker.</li> </ul>	Ch-7
1	<ul> <li>Thai Faster Products and M.K Company Limited are committed to enforce trainings and rules for drivers for traffic safety.</li> <li>Adhere to control plans for air pollution, water</li> </ul>	Ch-5 and Ch-7
	2	Thai Faster and M.K Company Limited will provide fire prevention facility and PPE to the worker at hazardous chemical storage area.           For Operation Phase, Thai Faster and M.K Company Limited is committed to follow the waste management plan and the brief descriptions of it is: Waste segregation           • Food waste           • Hazardous waste           • Non-hazardous waste           Waste disposal           • dispose and handle according to ECD guidelines           • dispose do y authorized waste collector           • sell to recycler for recyclable waste           2           Thai Faster and M.K Company Limited will follow the waste segregation plan, waste disposal plan and waste handling procedures described in EMP.           For Operation Phase,           Thai Faster Products and M.K Co., Ltd. is committed to           • implement the EMP for the workplace           • Control plan for noise           • Plan for contagious disease control           • Control plan for materials handling           • Plan for hazardous chemical exposure           • Precautionary measures           • Health and safety awareness and training.           •

## Manufacturing and Distribution of Various Types of Jellies

## Thai Faster Products & M.K Co., Ltd.

	1		
	2	<ul> <li>Thai Faster Products and M.K Company Limited will stick to local employment policy where possible.</li> <li>Thai Faster Products and M.K Company Limited will implement effective CSR program.</li> </ul>	
	1		
	1	For Operation Phase, Thai Faster Products and M.K Company Limited will supply sufficient emergency kits in factory. The detailed list of emergency kits and equipment are described in Ch-6, section 6.5.	Ch-6
Emergency Risk	2	Thai Faster Products and M.K Company Limited has installed suitable firefighting system and set up the emergency response team for the fire and natural disaster.	Ch-6
	3	Thai Faster Products and M.K Co., Ltd. have installed enough number of fire extinguishers. The locations of fire extinguishers are described in Figure 3.29 and layout plan are described in Figure 6.5.	Ch-3 and Ch-6
Training and	1	Thai Faster Products and M.K Company Limited will implement the firefighting training program for workers.	
Capacity	2	Capacity building program for skill workers and emergency response training for all workers for emergency response.	Ch-7
	1		
Reporting	1	Thai Faster Products and M.K Company Limited will submit monitoring report to the Environmental Conservation Department during the operation phase.	Ch-6

# 3.0 DESCRIPTION OF THE PROJECT AND PRODUCTION PROCESS

## 3.1 Project Background and Objectives

Thai Faster Products and M.K. Company Limited is the joint venture company formed in accordance with the provision of Myanmar Company Act. The main objective of the project is to manufacture and distribute safe, delicious and reliable jelly products by using modern technology and machines.

Thai Faster Products and M.K. Company Limited is planning to manufacture various types of jellies at Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar. The main purpose of this EMP study is to identify the management of the project for the prevention and mitigation of any potential land, air and water pollution during both construction and operation phases of the project.

## **3.2 Project Details**

Project Name:	Manufacturing and Distribution of Various Types of Jellies
Address:	Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar

**Company Information** 

1	•	
	Name of company:	Thai Faster Products and M.K. Company Limited
	Business activity:	Manufacturing and Distribution of Various Types of Jellies
	Products:	Various Types of Jellies
Factor	y Information	
	Established:	5.2.2014
	Test Run:	2.1.2015
	Commercial Run:	4.1.2017

#### Table 3.1 List of Directors

Sr. No.	Name	Nationality	Designation
1	Mr. Wichian Chaisathaporn	Thai	Managing Director
2	Mr. Varith Bawonsakulwong	Thai	Director
3	Mr. Paradorn Kunkongkaphan	Thai	Director
4	U Myint Oo	Myanmar	Director

## **3.3 Financial Information**

The authorized capital investment in land, buildings, plant & machinery and others will be US\$ 2.00 Million. The financial information is shown as follow.

#### Manufacturing and Distribution of Various Types of Jellies

Financial Information:

Authorized Capital	US\$ 2,000,000.00
Paid up Capital	US\$ 2,000,000.00
Type of Share	Ordinary Share
Number of Shares	2,000,000.00 shares (1 US\$ per Share)
Last Date of Capital to be Contributed	30.4.2018
Amount/ Percentage of Local Capital	US\$ 0.2 Million (10 %)
to be Contributed	
Amount/ Percentage of Foreign Capital	US\$ 1.8 Million (90 %)
to be Brought in	

Thai Faster Products and M.K Company Limited is registered the JV Company as a private limited company under the laws of Myanmar in which the shareholding structure describe as follow table 3.2.

Table 3.2 Shareholding structure

Shareholders	Number of Shares	Shareholding Percentage (%)
Thai Faster Products Co., Ltd.	1,200,000	60
Mantakanok Co., Ltd.	600,000	30
MK Co., Ltd.	200,000	10
Total Shares	2,000,000	100

## 3.4 Project Location, Area and Land Ownership

Hlaing Thar Yar Township is located in the western part of Yangon, Myanmar (Figure 2.1). The township comprises 20 Quarter and nine village tracts, and shares borders with Htantabin Township in the north and west, Insein Township, Mayangon Township and Hlaing Township in the east across the Yangon River, and Twante Township in the south (Figure 3.2 and 3.3).

#### 3.4.1 Project Location

The proposed project, "Manufacturing and Distribution of Various Types of Jellies", is implemented at Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar and the location map is shown in the following Figure 3.1. It is bounded by Rice Mill (Shwe La Won Co., Ltd) in the east, Ka Naung Min Thar Gyi Street in the west, Garment Factory (Myanmar Yoo Ho CO., Ltd) in the south and Wet Ma Sut Wun Htauk Street in the north. The geographical coordinates of project site are as follows:

Latitude:	16° 54´ 35.615" N
Longitude:	96° 04´ 13.152" E

# Environmental Management Plan (EMP) Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.1 Location of the Factory

## 3.4.2 Area

The area of the proposed project site is 2.036 acres.

#### 3.4.3 Land Ownership

- Owner of the Land: U Pyae Phyo
- *Period of Land Lease:* 5 years (initial) & extendable for a further period up to 70 years. See the Appendix (27) for contract of Land and Building leasing.



Figure 3.2 Map of Industrial Zones in Yangon

Manufacturing and Distribution of Various Types of Jellies



Figure 3.3 Location of Hlaing Thar Yar Township

## 3.5 Site Boundaries and Access Road

It is bounded by:

Rice Mill (Shwe La Won Co., Ltd)	East direction
Ka Naung Min Thar Gyi Street	West direction
Garment Factory (Myanmar Yoo Ho CO., Ltd)	South direction
Wet Ma Sut Wun Htauk Street	North direction

Green Myanmar Environmental Services Co., Ltd.
## Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.4 Site Boundaries and Access Road of the Project

As the chosen site is located on Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, it can be reached from the Tha Mine junction by driving via Insein Road. At this junction turn left from Insein Road onto Tha Mine Train Station Road and continue onto Bayint Naung Bridge 2. Then continue onto Yangon- Pathein Road, turn right toward Ka Naung Min Thar Gyi Road, continue onto Ka Naung Min Thar Gyi Street, the project site is on the right hand side of the Ka Naung Min Thar Gyi Street. The site boundaries and assess road of the project site are described in Figure 3.4.

# **3.6 Administrative Offices**

- Order processing and preparing invoices
- Conducting marketing and sales
- Managing human resources

The administrative offices associated facility are typically proportional to the size of the manufacturing operation (i.e. Larger factories require more administrative support). Administrative staff manages corporate functions such as human resources, finance and accounting, billing, health and safety, and environmental compliance. Offices are equipped with basic technologies and amenities, such as computers, printers, filing equipment, desk space, and meeting rooms.

### 3.6.1 Infrastructure

The project site consists of four buildings:

- 5. Factory Building (155 ft. x 180 ft.),
- 6. Boiler Building (66 ft. x 72.5 ft.),
- 7. Houses for Employee (95 ft. x 25 ft.) and
- 8. Canteen (53 ft. x 23 ft.).

The layout and photos of existing buildings and infrastructures including raw materials storage area, production area, utility area, office area, greenbelt area, parking area and internal roads etc. are shown in Figures 3.5 to 3.9.

Manufacturing and Distribution of Various Types of Jellies



Figure 3.5 Factory Layout Plan

# Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.6 Canteen



Figure 3.7 Boiler Room

# Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.8 Employee Housing



Main Entrance Gate



Security Guest-room



Main Building



Boiler Building

Manufacturing and Distribution of Various Types of Jellies





Canteen

Figure 3.9 Photos of Factory Buildings

# 3.7 Product Profile

The proposed investment business is the operation of the business involving the manufacturing and distribution of various types of jellies. More specifically, the proposed investment will involve the manufacturing and distribution of the following products:

- (5) Hero Jelly Cup
- (6) Hero Plus Jelly
- (7) Daiyamoto Light Kit Jelly Cup
- (8) Daiyamoto Big Cup Jelly

The specification of product is shown in the following table.

Table 3.3 List of Product

No.	Particular	Weight (g)
1	Hero Jelly Cup	20
2	Hero Plus Jelly	120
3	Daiya Moto Light Kit Jelly Cup	55
4	Daiya Moto Big Cup Jelly	130



# Environmental Management Plan (EMP) Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.10 Photos of Product Samples

# **3.8 Production Capacity**

The proposed project is to produce various types of jellies. For each type of jelly products, 90 % of total production capacity will be sold at local market and the remaining 10 % will be exported to foreign countries. The proposed production capacity for local and export are listed in Table 2.3 and 2.4. The production capacity is based on one shift a day and 26 working days per month. The sale prices for local and export are shown in Table 2.5.

			Estima	ate Annua	l Production	n Capacity (	(Carton)		
No.	Product Name	Packing Per Carton			Year				
		Carton	1	2	3	4	5-30		
1	Hero Jelly Cup	20 g x 35 cups x 12 bags	216,000	368,280	432,000	432,000	475,200		
2	Hero Plus Jelly	120 g x 6 bags x 16 packs	40,500	129,600	162,000	162,000	178,200		
3	Daiyamoto Light Kit Jelly Cup	55 g x 15 cups x 12 packs	90,000	172,800	216,000	216,000	237,600		
4	Daiyamoto Big Cup Jelly	130 g x 6 cups x 12 packs	27,000	259,200	324,000	324,000	356,400		
	Total Production	Capacity	373,500	929,880	1,134,000	1,134,000	1,247,400		

Table 3.4 Annual Production Capacities of Various Types of Jellies (Local Sale)

# Manufacturing and Distribution of Various Types of Jellies

		De alvin a Dan	Estimate Annual Production Capacity (Carton)					
No.	Product Name	Packing Per Carton			Year			
		Carton	1	2	3	4	5-30	
1	Hero Jelly Cup	20 g x 35 cups	24,000	45,320	48,000	48,000	52,800	
		x 12 bags						
2	Hero Plus Jelly	120 g x 6 bags	4,500	18,000	18,000	18,000	19,800	
		x 16 packs						
3	Daiyamoto	55 g x 15 cups	10,000	24,000	24,000	24,000	26,400	
	Light Kit Jelly	x 12 packs						
	Cup							
4	Daiyamoto Big	130 g x 6 cups	3,000	16,000	36,000	36,000	39,600	
	Cup Jelly	x 12 packs						
Total I	Production Capaci	ty	41,500	103,320	126,000	126,000	138,600	

Thai Faster Products and M.K Co., Ltd. will distribute to Thailand (Export Sale) for various types of Jellies by M.K Trading (logistic).

Table 3.6 Sale Prices of Various Types of Jellies for Local and Export

		Doolring Don		Sale Pri	ces (US\$	/ Carton)	
No.	Product Name	Packing Per Carton	Year				
		Carton	1	2	3	4	5-30
1	Hero Jelly Cup	20 g x 35 cups x 12 bags	10.00	10.00	10.00	10.00	10.00
2	Hero Plus Jelly	120 g x 6 bags x 16 packs	14.15	14.15	14.15	14.15	14.15
3	Daiyamoto Light Kit Jelly Cup	55 g x 15 cups x 12 packs	13.27	13.27	13.27	13.27	13.27
4	Daiyamoto Big Cup Jelly	130 g x 6 cups x 12 packs	10.61	10.61	10.61	10.61	10.61

Manufacturing and Distribution of Various Types of Jellies

# 3.9 Raw Materials

The ingredients/raw materials for jelly production are sugar, fructose syrup, carrageenan powder, lucustbeen gum, konjakku flour, artificial flavor and artificial color. Thai Faster Products and M.K. Company Limited have a plan to purchase sugar and paper cardboard (carton) from local market and other raw materials are imported from abroad.

Required amounts of raw materials to be imported and to be purchased from local market are shown in Table 3.7 and 3.8 respectively. The raw material storage condition is shown in Figure 3.11 and the Safety Data Sheet of raw materials is shown in Appendix (29).

No.	Particulars	Unit			Quantity			Imported
110.	T at ticular s	Omt	Year 1	Year 2	Year 3	Year 4	Year 5-30	Importeu
1	Carrageenan Powder	Kg	11,085	28,406.8	34,740	34,740	38,214	Thailand
2	Locust bean Gum	Kg	11,830	30,148.8	36,840	36,840	40,524	Thailand
3	Konjac Gum	Kg	4,984	12,706.96	15,528	15,528	17,080.8	Thailand
4	Artificial Flavor	Kg	3,856	9,965.44	12,192	12,192	13,411.2	Thailand
5	Artificial Color	Kg	1,114.5	2,895.72	3,546	3,546	3,900.6	Thailand
6	PP Cup							
	- Hero Jelly Cup	cup	100,800,000	173,712,000	201,600,000	201,600,000	221,760,000	local
	- Daiyamoto Light Kit Jelly Cup	cup	18,000,000	35,424,000	43,2000,000	43,2000,000	47,520,000	local
	- Daiyamot Big Cup Jelly	cup	2,160,000	19,814,400	25,920,000	25,920,000	28,512,000	
7	Plastic Bag						6,336,000	
	- Hero Jelly Cup	bag	2,880,000	4,963,200	5,760,000	5,760,000	19,008,000	local
	- Hero Plus Jelly	bag	4,320,000	14,169,600	17,280,000	17,280,000	19,008,000	
8	Plastic Film							
	- Hero Jelly Cup	pcs	100,800,000	173,712,000	201,600,000	201,600,000	221,760,000	Thailand
	- Daiyamoto Light Kit Jelly Cup	pcs	18,000,000	35,424,000	43,200,000	43,200,000	47,520,000	Thananu
	- Daiyamoto Big Cup Jelly	pcs	2,160,000	19,814,400	25,920,000	25,920,000	28,512,000	
9	Paper Inner Box							
	- Daiyamoto Light Kit Jelly Cup	box	1,200,000	2,361,600	2,880,000	2,880,000	3,168,000	local
	- Daiyamoto Big Cup Jelly	box	360,000	3,302,400	4,320,000	4,320,000	4,752,000	
10	Plastic Tape	pcs	415,000	1,033,200	1,260,000	1,260,000	1,386,000	local

Table 3.7 Annual Requirements of Raw Materials

# Manufacturing and Distribution of Various Types of Jellies

# Thai Faster Products & M.K Co., Ltd.

No	Particulars	Unit			Qua	ntity		
NO	T articulars	Oint	Year 1	Year 2	Year 3	Year 4	Year 5-30	Imported
1	Pure refined Sugar	Kg	485,800	1,239,408	1,514,400	1,514,400	1,665,840	local
	Paper Cardboard (carton)							
	- Hero Jelly Cup	ctn	240,000	413,600	480,000	480,000	528,000	
2	- Hero Plus Jelly	ctn	45,000	147,600	180,000	180,000	198,000	local
	- Daiyamoto Light Kit Jelly Cup	ctn	100,000	196,800	240,000	240,000	264,000	
	- Daiyamoto Big Cup Jelly	ctn	30,000	275,200	360,000	360,000	396,000	

Figure 3.11 Raw Materials Storage condition						
Carrageenan Powder	Locust bean Gum					
	<image/>					

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



# Manufacturing and Distribution of Various Types of Jellies

### Thai Faster Products & M.K Co., Ltd.

# Table 3.9 Food grade Chemical Lists and storage condition

Items	Storage state	Production	Logistic	Imported		
	state	Day (Kg)	Month (Kg)	Yearly (Kg)		
Tripotassium Citrate (P-PCT)	Bag	2.714	81.410	976.92		Thailand
Maltodextrin	Bag	8.832	264.960	3,179.52		Thailand
Citric Acid Monohydrate	Bag	3	90	1,080		Thailand
Grap Flavor Symrise (F-GRS)		0.83	2.478	29.74		Thailand
Orange Flavor(Symrise) (F-ORS)	Bin	0.022	0.662	7.95		Thailand
Lychee Flavor (VM) (F-LCV)		0.029	0.875	10.50		Thailand
Grap Flavor(MV/GRV/) (F-GRM)		0.067	2.016	24.19	M.K	Thailand
Grape Flavor(Sensient ) (F-GRV)	Bin	0.198	5.950	71.40	Trading	Thailand
Stawberry Flavor TFF (F-STT)		0.060	1.800	21.60	logistic	Thailand
Orange Flavor (Thai Inter) (F-ORT)		0.227	6.806	81.67		Thailand
Salacider Flavor (Firmenich) (F-SLF)	Bin	0.218	6.528	78.34		Thailand
Pineapple Falvor (Thai Inter) (F-PAT)		0.110	3.311	39.74		Thailand
Aspartame Powder (P-APT)	Carton	0.226	6.775	81.30		Thailand
Acesul FAME-K (P-ACEF)	Cartoli	0.236	7.085	85.02		Thailand
Sunset Yellow FCF (P-SSY)	Pouch	0.250	7.500	90.00		Thailand
Dark Red Carmoisine (P-CMI)	Pouch	0.079	2.356	28.27	1	Thailand
Tartrazine (P-TTZ)	Pouch	0.050	1.500	18.00	Lo	cal
Probenz SG Sodium Benzoate (P-BZA)	Bag	0.916	27.492	329.90	Lo	cal

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



## Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Manufacturing and Distribution of Various Types of Jellies

# 3.10 Machinery and Equipment

Thai Faster Products and M.K. Company Limited have a plan to purchase all machineries and equipment required for the production of various types of jellies from the local market.

The total cost of machineries and equipment is estimated to be 1,569,239.18 USD. Some of the machineries and equipment are listed in Table 3.10.

No.	Item	Unit Price (USD)	Quantity
1	Sealing Machine	2,421.88	2
2	Centrifugal Pump 2 Hp	694.27	2
3	Mixing Tank 500 liter	7,164.22	2
4	Mixing Tank 1000 liter	7,092.58	4
5	Mixing Tank 250 liter	4,477.64	11
6	Air Compressor 50 Hp	10,452.43	1
7	Cooling Machine	29,033.00	3
8	Filling and Sealing Machine 16 Cups.	105,179.82	1
9	Filling and Sealing Machine 20 Cups.	142,209.88	1
10	Filling and Sealing Machine 40 Cups.	254,419.60	1
11	Pouch Type Automatic Filling	27,432.29	3
12	The Drop Bed	4,793.18	3
13	Generator 100 kVA	15,132.77	1
14	Digital Scales 150 kg	1,217.14	5
15	Main Direct Board (DBM)	17,116.02	1
16	Water Filter System Reverse Osmosis	12,171.39	1
17	Water System	78,679.92	1
18	Electric System	33,269.01	1
19	Steam Machine	129,272.74	1
20	Boiler (husk) 3 Tons	52,203.22	1
21	Boiler 100 Hp	117,905.80	1
22	Cooling Tower Model: BKC-S-150RT	7,809.94	1
23	Polyethylene Insulation Panels Complete	74,380.40	1
	with Accessories		
24	"KOHLER" Generators KV 550 C2 II	67,907.29	1
	VOLVO TAD 1641 GE		
25	Oil Automatic Voltage Stabilizer (A.V.S)	21,354.17	1

Table 3.10 List of Machinery and Equipment

### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.13 Machine Layout

Environmental Management Plan (EMP) Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Mixing Tank



Filling and Sealing Machine





Cooling Machine Digital Scales Figure 3.14 Production Machinery for HERY BOYS



Mixing Tank



Filling and Sealing Machine



Cooling Machine Sealing the paper box Figure 3.15 Production Machinery for DIAYA MOTO

Manufacturing and Distribution of Various Types of Jellies

## 3.11 Power Supply and Power Generation

The main source of energy that will be required for the project is electricity and other sources are diesel fuel and paddy husk.

### 3.11.1 Transformer

Electricity is used for production process and provision of light. Electricity is obtained from electricity supply and there is one unit of transformer (315 kVA) at the factory. It is described see the Figure 3.13. The detailed resource requirement for the project is shown in the following table 3.9.

Particulars	Source	Unit	Year 1	Year 2	Year 3	Year 4	Year 5-30
Electricity	National Grid	kWh	912,000	920,000	930,000	940,000	950,000



Figure 3.16 Transformer

#### 3.11.2 Generator

Diesel is utilized in two units of generators (75 kVA & 500 kVA) at the factory. Diesel fuel is procured from Public Sector Oil companies. Fuel is used for the generator, cars and delivery trucks. It is stored in over ground with barrels and described the following figure 3.17. The detailed annual requirement for Diesel consumption is shown in the following table 3.12.

Table 3.12 Annual Requirement for Diesel consumption

Particulars	Source	Unit	Year 1	Year 2	Year 3	Year 4	Year 5-30
Diesel	Generator	Gallon	15,850	17,000	19,000	21,000	22,000



Figure 3.17 Generators and Diesel Storage

Thai Faster Products & M.K Co., Ltd.

### 3.11.3 Boiler

On-site boiler (6 bar) generates steam to support heating operations at the factory. Rice Husk is used for the boiler and it is stored with traditional bag and storage room at the factory. It is described to the following Figure 3-18. The detailed annual requirement for Paddy Husk consumption is shown in the following table 3.13. Table 3.13 Annual requirements for Paddy Husk consumption

Particulars	Source	Unit	Year 1	Year 2	Year 3	Year 4	Year 5-30
Paddy Husk	Boiler	Ton	842.40	1,684.80	2,527.20	2,527.20	2,527.20



Figure 3-18 Boiler and Rice Husk Storage

# 3.12 Water Consumption

There have (2 inches) width and depth is 42 feet for tube well. Thai Faster Products and M.K. Company Limited have installed water treatment system to purify ground water (tube well water) and it is shown in Figure 3.19. Ground water is treated by clarification, filtration and ion exchange method and flow diagram of water treatment process is shown in Figure 3.20. Purified water is used for process water, boiler feed water and other purposes and water consumption plan is shown in the following table 3.14.

#### Table 3.14 Water consumption

No.	Description	Amount (Daily)					
1	Process	10,400 gallon					
2	Boiler	1,200 gallon					
3	General Domestic	400 gallon					



Figure 3.19 Water Treatment System



Figure 3.20 Flow Diagram of Water Treatment Process

Manufacturing and Distribution of Various Types of Jellies

# 3.13 Processes and Operations Involved in the Manufacture

A jelly is a semisolid product prepared by boiling a clear solution of pectin containing fruit extract, after addition of sugar and acid. A perfect jelly should be transparent, well set, but not too stiff, and should have the original flavor of the fruit. It should be of attractive color and keep its shape.

Essential ingredients for jelly masking are fruit flavor, pectin, sugar, acid, and water. Pectin is a substance necessary for gel formation. Acid is needed for flavor and gel formation. If there is too little acid, the product will not gel; if there is too much acid the gel will lose liquid and weep. Sugar helps in gel formation and serves as a preserving agent. It also contributes to the flavor and color of the jelly products. It must be present in the right proportion with acid and pectin in order to form the gel.

Jelly is formed when a suitable concentration of pectin, sugar, acid, and water is achieved. The brief description of the process for the manufacturing of jelly will be provided in the following section.

### 3.13.1 Manufacturing Process

Jelly (Hero Boys and Daiya Moto) manufacturing process can be divided into following steps:

- 1. Preparation of Raw Materials
- 2. Mixing
- 3. Filling
- 4. Cooling
- 5. Packaging



Figure 3.21 Process Flow Chart for Manufacturing of Hero Boys

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.22 Process Flow Chart for Manufacturing of Daiya Moto

# 3.13.2 Quality Control and Inspection

Important quality factors for jelly products are color, flavor, texture, nutritive value, toxicity, contamination by foreign matter and growth of microorganisms after extended storage. Therefore food grade raw materials are used and they are analyzed by measuring the quality parameters such as viscosity, specific gravity and refractive index. Analysis Results of some raw materials are shown in Appendix (4).

Moreover final product quality is inspected by carrying the following activities and some analysis results are also shown in Appendix (5).

- 1. Weight checking
- 2. Flavor checking
- 3. Shelf life checking

In the packaging step, seal and label of each bag/pack are inspected and carton box must be dry, clean and have inspection seal. And then the Standard Mark must be clearly marked on the label of carton box and it consists of the following:

- 1. Manufacturer's name or trade mark
- 2. Number of bags/packs
- 3. Manufacturing date
- 4. Best before use date
- 5. Method for Handling
- 6. Bar code.

# 3.14 Employment Plan

Thai Faster Products and M.K. Company Limited have a plan to arrange the employment plan for the investment business as listed in the following table. But company has assigned initially only 68 persons of employment for the production of jelly products.

Table 3.15 Employment Plan

Type of	Donortmont		Ν	lo. of Pers	ons	
Personnel	Department	Year 1	Year 2	Year 3	Year 4	Year 5-30
Local Personnel Re	equired					
. Executive Level	Management	1	1	2	2	2
. Expert Level	Production	3	3	3	3	3
. Chief Officer	Quality Control	10	10	15	15	15
. Secretary	Admin	4	4	6	6	6
. Skill Employees	Production	20	25	30	30	30
. Employees	Worker	150	250	300	300	300
	Total	188	293	356	356	356
Foreign Experts an	d Technicians Perso	onnel Requi	red			
Executive Level	Management	3	2	1	1	1
Expert Level	Production	3	3	3	3	3
Chief Officer	Admin	2	2	2	2	2
	Total	8	7	6	6	6

### 3.14.1 Working hour and days

Working hours for the production process are:

7:00 am to 4:00 pm (Monday to Friday) and

5:30 pm (overtime)

7:00 am to 11:00 am (Saturday).

Sunday is the holiday.

Annual Working day: 300 day/yr

Thai Faster Products and M.K. Company Limited provide proper leave scheme, over-time allowance and yearly bonus which shall be satisfactory for the workers. Moreover, there will provide First Aid and Health Care Program to the workers and staff are arranged.

### 3.15 Waste Generation

# 3.15.1 Wastewater Discharge and Treatment system

#### Wastewater Discharge

There is wastewater from the production and domestic wastewater will be discharged. Process waste water may be discharged from the floor washing, tanks washing and cooling process. Domestic wastewater from canteen, office and toilet flushing shall be collected in septic tanks for treatment. Storm water are discharged directly flow to the municipal drain. Wastewater discharging and Disposal Detail is described the following Table 3.16.

The gutters are secured with a filter to prevent the presence of solid particles in the effluent by the production process. Wastewaters from the production are

collected to the wastewater treatment pond and discharge to the municipal drainage sees the following Table 3.16.

Table 3.16 Wastewater discharging and Disposal Detail

No	Source		Amount (lit	System		
INO	Source	Day	Month	Year		
1	Process wastewater	10,000	260,000	3,000,000	Waste water Treatment Plant	
2	Domestic wastewater	200	5,200	60,000	r reatment Plant	

### Wastewater Treatment System

The process wastewater will be treated with wastewater treatment plant (WWTP) that is installed in the factory. The process flow chart and wastewater treatment pond is as shown in the following Figure 3.23.

Tank (1) storage = 31,500 liter

Tank (2) storage = 49,500 liter Tank (3) storage = 21,000 liter



Figure 3.23 Waste water Treatment Plant

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.24 Water Final Discharge point of Thai Faster Products and M.K Co., Ltd



Figure 3.25 Photos of Drainage system



Figure 3.26 Sewage systems

### 3.15.2 Solid wastes Storage and Disposal System

In production of daiyamoto and hero boys, the wastes are plastic bags, paper bags, boxes of plastic cups and raw materials. During the closing process, there will be waste in the plastic film after cutting the film. The waste paper box is damaged during the pack.

There has a waste disposal method such as paper and plastic wastes that can be recycled or selling to the local vendor by the Thai Faster Products and M.K Company Limited. Other wastes will dispose to the YCDC waste dump by the company.

The Solid wastes from the packaging materials such paper box, wooden pallets, plastics and rice husk ash are separately storage at the factory. There is described in the following Figure 3.27. The solid wastes were separately collected and storage at the factory and then dispose to the Yangon City Development Committee by the Thai Faster Products and M.K Company Limited. There has disposed any solid wastes to local vendor by the factory see the Figure 3.28.

NT	G		(	Quantity		Disposal			
No	Source	Type of Waste	Day	Month	Year	System			
Non	Non-Hazardous waste								
1	Kitchen and Hostel	Other general domestic solid wastes	1 kg	30 kg	300 kg	Yangon City Development			
2	Administrative & office	Paper and general domestic solid wastes	0.5 kg	15 kg	150 kg	Committee			
3	Processing step	carton boxes, broken wooden pallets	10 kg	60 kg	600 kg	Soldering to			
4	Paddy husk Boiler	Rise husk ash	30 Bag (90 kg)	900 bag	10800 bag	local vendor			
5	Waste water Treatment pond	sludge	0.01 kg	0.3 kg	3.6 kg	Landfilling			
Haz	ardous waste								
6	Administrative	e-wastes and used ink container	0.01 kg	0.3 kg	3.6 kg	Yangon City Development Committee			
7	Processing Utilities	Used lubricant & Grease	0.07 lit	2.1 lit	25.2 lit	YCDC/ Local authorized			
8	Raw materials	Used bags, Pouch, Plastic cup	1 kg	30 kg	360 kg	organization			

Table 3.17 Solid waste disposal system

# Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.27 Solid waste collecting



Figure 3.28 Solid waste Disposal system

# 3.16 Fire Fighting System

The Thai Faster Products and M.K Co., Ltd has planned, designed and constructed with fixed firefighting installations systematically at the factory. The fire extinguishers, hose reels and hydrants, water storage tank for firefighting were installed in every accessible place see the following Table 3.18, Figure 3.29 and 3.30.

No	Equipment	Quantity (nos.)
1	Fire Extinguisher (20 kg)	25
2	Auto Sprinkler Pump	2
3	Fire Hydrant	2
4	Fire Alarm	2
5	Emergency Exist	3
6	Fire Hose	2
7	firefighting water storage tank = 44660 liter L×W×D = $(4.4 \times 2.9 \times 3.5)$ meter	1

 Table 3.18 List of Firefighting Equipment

# Environmental Management Plan (EMP) Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 3.29 Fire Extinguisher and firefighting Equipment (Thai Faster Products and M.K Co., Ltd)



Figure 3.30 Water storage tank for Firefighting



Figure 3.31 Firefighting Training

Manufacturing and Distribution of Various Types of Jellies

# **3.17 Other Facilities**

In order that the employees may enjoy proper welfare commensurate with that of a prestigious Company, the company has set up a plan, as stated below, for employees as employees' welfare plan.

### 3.17.1 Self- cleanliness

- (f) To teach the laborers how to keep self-cleanliness: washing hands with soap before and after having meals and after using the toilet.
- (g) To train them to wear clean uniforms, gloves, masks and caps.
- (h) There will be a clean and ventilated room for canteen with enough tables and benches, clean drinking water and soap for washing hands
- (i) The toilet will be provided with soap, enough water and deodorants. If necessary, some kind of antiseptic liquid will be sprayed.
- (j) Provide Purified drinking water to the employees.



Toilets



Uniform



Drinking water



Canteen

Figure 3.32Facilities for Employees

# 3.17.2 Medical Care

The medicine box of the factory of Thai Faster Products and M.K Company Limited, it is the basic medicine that employees need when they felt sick or have a little accident during the operation. The medicine is prepared as shown in the following table 3.15. If the employee is seriously ill or has a serious accident, there have to go to hospital by the factory.

- (e) Sometimes, there will be educational seminar on medical care.
- (f) There will be medical check-ups for some kinds of infectious diseases like tuberculosis.
- (g) If necessary, treatment with free of charges will be given.
- (h) The Company provides Covid-19 Vaccination for employees see the attached in Appendix (28).



Figure 3.33 First Aid Kit for Medical Facilities

Table 3.19 Medicine list and PPE list			
<b>C</b>		C	

Sr. No	Name	Sr. No	Name		
1	Paracad	6	Leofoxidonc		
2	Antacill	7	Alcohol (sprite)		
3	Certirizine	8	Packtase		
4	Dofenal	9	MaharPhaySae		
5	Betex	10	AhbaHta		
		11	HassPlast		
		•			
PPE	equipment lists				
No.	Equipment	Equ	ipment		
1	Mask	– Daily per person			
2	Head cover				
3	Hand glove				
4	Shoe boot				

# 3.17.3 Ways of Training

- (g) Our members will be trained to be honest, good and clever ones by using awarding and punishing system.
- (h) Those who work hard will be encouraged by suitable on-job training courses
- (i) There will be a promotion and demotion system depending on their skills.
- (j) They will be trained to have mutual respects among senior and junior laborers and supervisors.
- (k) They will be trained to understand the value of unity in every field.
- (1) There will be provided emergency response training to the workers.

# 3.18 Transportation Arrangement

The transportation arrangement for raw material, finished goods wand ferry for worker is as shown in following table the factory will should be arrange the effective car parking for ferry bus. The ferries are stopped inside the factory estate. Therefore, traffic jam will not cause by the ferry car.



Figure 3.34 Photos of Ferry for employees

Table 3.20 Transportation Plan	l
--------------------------------	---

No.	Туре	Route	Road Safety Plan for Community and Environment
1	loading and unloading of	(Logistic) M.K Trading	Speed Limit 60 – 80
	Raw Materials and Products		to drive
2	Ferry car for the employees	Route- 1 (Factory to No.1 (Bus Stop)	Speed Limit 40 – 60
		Route – 2 (Factory to Alae Village)	to drive

# 4.0 GOVERNING PARAMETERS AND SURROUNDING ENVIRONMENT

# 4.1 Regulatory Requirement

Project Proponent is responsible to prepare the standalone EMP in accordance with Article 8 or Article 24 of the EIA Procedure. The EMP report must be adequate with the format stated in Article 63 (h) of the EIA Procedure.

### 4.2 Myanmar Environmental Standards

Ministry of Natural Resources and Environmental Conservation - MONREC (former Ministry of Environmental Conservation and Forestry - MOECAF) issued National Environmental Quality (Emission) Guidelines, NEQGs, on December 2015 according to the provision of Paragraph (42), Sub-paragraph (b) of the Environmental Conservation Law 2012.

The objective of the guidelines is to control noise and vibration, emissions and effluents in order to prevent the pollutions for the protection of human health and ecosystem.

Effluent parameters and quality standards issued by the Environmental Conservation Department for effluent levels is shown in Table 4.1. The environmental standard for air emission and noise level described in General Guidelines of the National Environmental Quality (Emission) Guidelines are stated in Tables 4.2 and 4.3 respectively.

The proponent must comply with these standards and implement the project EMP strictly and any additional requirements set out in the project Environmental Compliance Certificate (ECC) adopted by the Department. Air emissions, noise, odor, and liquid/ effluent discharges will be sampled and measured at points of compliance as specified in the project EMP and ECC.

Item	Unit	National Environmental Quality (Emission) Guideline
5-day Biochemical Oxygen Demand	mg/l	50
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical Oxygen Demand, (COD)	mg/l	250
Chlorine (total residual)	mg/l	0.2
Chromium (Hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper, (Cu)	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	20
Heavy metals (total)	mg/l	10
Iron	mg/l	3.5
Lead	mg/l	0.1

Table 4.1 Effluent Level (General Guideline)
# Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

	1	
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and grease	mg/l	10
рН		6-9
Phenols	mg/l	0.5
Selenium	mg/l	0.1
Silver	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	°C	<3
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

Table 4.2 Air Emission Levels (General Guideline)

Parameters	Average Period	Guideline Value, µg/m <sup>3</sup>
Nitrogen dioxide, NO <sub>2</sub>	1-year	40
Nillogell dioxide, NO <sub>2</sub>	1-hour	200
Ozone, O <sub>3</sub>	8-hour daily	100
$Ozone, O_3$	maximum	100
Particulate matter, PM <sub>2.5</sub>	1-year	20
I articulate matter, I WI2.5	24-hour	50
Derticulate motter DM	1-year	10
Particulate matter, PM <sub>10</sub>	24-hour	25
Sulfur dioxida SO	24-hour	20
Sulfur dioxide, SO <sub>2</sub>	10-minutes	500

#### Table 4.3 Noise Level (General Guidelines)

Receptor -		One Hour L <sub>Aeq</sub> , dB (A)		
		Day time	Night time	
Industrial Com	nmercial	70	70	
Resident, Institutional, Educational		55	45	
Day time 07:0	07:00-22:00 (10:00-22:00 for Public holidays)			
Night time 22:0	22:00-07:00 (22:00-10:00 for Public holidays)			

The Myanmar government has established National Environmental Quality (Emission) Guidelines (NEQGs) which include General Guidelines and Industrial Specific Guidelines. Only include the General Guideline for Food and Beverages but there is no specific guideline for Jellies factory.

# **4.3 International Standards and Guidelines**

Table 4-4 Air Emission Levels (US-EPA Guideline)

Parameters	Unit	US-EPA Standards
Carbon monoxide, CO	ppm	35 ppm (1-hr)
Nitrogen dioxide, NO <sub>2</sub>	ppm	0.100 ppm (1-hr)
Sulfur dioxide, SO <sub>2</sub>	ppm	0.075 ppm (1-hr)
Particulate matter, PM <sub>2.5</sub>	mg/m <sup>3</sup>	35 µg/m <sup>3</sup> (24-hr)
Particulate matter, PM <sub>10</sub>	mg/m <sup>3</sup>	150 μg/m <sup>3</sup> (24-hr)

Table 4.5 US-OHS Noise Exposure Limits for the Work Environment (Noise Exposures in
dBA)

Permissible Exposure Noise (hours and minutes)
-
16 hrs
12 hrs 6 min
8 hrs
5 hrs 18 min
3 hrs 30 min
2 hrs 18 min
1 hrs 30 min
1 hr
40 min
26 min
17 min
15 min
10 min
6.6 min
4 min
3 min
1 min

Manufacturing and Distribution of Various Types of Jellies

# 4.4 Environmental Profile of Jelly factory

TFPMK Jelly factory is located in Shwe Lin Pan Industrial Zone, Hlaing Tharyar Township, and Yangon Region. It is of prime importance to collect baseline data in order to identify the potential environmental issues to be managed through the operation phase. Information was gathered on the existing physical environment, particularly as related to climate, geology, water quality, air quality and noise. The secondary data collection is based on September 2020 General Administration Department of Hlaing Tharyar (Eastern) Township.

# 4.4.1 Secondary Data for the Surrounding Environment

Table 4.6 Environmental and Social Condition near the Project Area

Туре	Description						
Natural Environme	ent						
Meteorology	•	Hlaing Tharyar (Eastern) Township is located in the northern district of Yangon Region. The location of the township is between north latitude 16° 47' and 20° 12' and between east longitude 96° 12' and 100° 13'. It is occupies an area of 13.96 square miles.					
Topography	•		-		ted in the eastern p		ing Tharvar
		(Easte West, towns	ern) To Twan	ownship, H tay townsl	laing Tharyar (W nip from th Sour th of Hlaing Thar	est) Townshi th and Shwe	ip from the e Pyi Thar
Geographic	•	The to	opograp	hy of Hlair	ng Thayar (East) To	ownship is fla	t.
Hydrology Climate	•	In Hlaing Thayar (Eastern) Township, the Pan Hlaing River flows from west to east and merges into the Hlaig River which flowes flow north to south. Pan Hlaing River is shallow, 2015. In January, the river was re-excavated and boates can travel along the river. The climate of the Hlaing Thayar (Eastern) Township is a tropical monsoon climate. The highest temperature is 41°C and lowest temperature is 27°C.					
					Rainfall	Tempe	rature
		No.	Year	Rainy Days	Total Rainfall (inches)	Summer (°C)	Winter (°C)
						Highest	Lowest
		1	2017	123	132.05	40	27
		2	2018	105	113.28	41	26
		3	2019	112	102.01	39	26
		4	2020	101	97.72	40	26
Sea level	• The sea level of Hlaing Thayar (Eastern) Township is 100 feet.						
Biodiversity	<u> </u>						<u> </u>
Natural plants	•	• The natural plants that grow naturally in Haling Thayar (Eastern) Township are; the clover emerald tree vanda even kukko tree and boskai tree.					
			-				tko tree allu
wild animal	•	boska	i tree.		ls in the Hling Thy		

Green Myanmar Environmental Services Co., Ltd.

Environment		River and Hlaing Reiver, so the environment is lush and green.				
Natural	•	To pr	otect the environ	nment, planti	ng shady plants o	on the left/ right
Environmental		sides	of highways eve	ery year. Rais	sing awarenss ab	out not catching
conservation		fish d	luring fishing tri	ps in lakes/ o	channels. The lev	ant deparments,
		to ed	ucate and pread	h according	to the industrial	zones to ensure
			-	-	actories are orga	
			ertaiton with NG		U	
Administrative	•				is Ward (9) It is	composed of (5)
			e groups and (9)			1 ()
Housing/	•				2020, Hlaing T	havar (Eastern)
Population and				-	cholds, 7,152 vill	•
Communities			<b>1</b>		30 village househ	0
Population by	•				hnic Group of	
National Ethnic			ern) Township is		1	Inang Inayai
Group		Sr.		No. of	5 10010.	
Group		No.	Ethnicity	Persons	Percentage (%)	)
		1.	Kachin	101	0.04	4.4
				8		
		2.	Kayah	_	0.03	
		3.	Kayin	2,638	1.1:	
		4.	Chin	434	0.	
		5.	Mon	448	0.	19
		6.	Burmese	216,986	94.0	54
		7.	Rakhine	3,173	1.3	37
		8.	Shan	322	0.1	14
Religion	•	(Easte	ern) Township,	the popul	people living in lation is Budd Islamabad (1,16	hist (220,859);
Population by	•		•		g in Hlaing T	
Foreigner				e	ch is $(0.42\%)$ of	5
rorengiler			-			
					04 people) and	
					e 111 Pakistani	
		towns	ship's population	. There are $f$	583 Bangladeshis	(0.25%) of the
		villag	e population.	Others (2692	2) are 2.24% o	f the township
		popul	ation.			
Socio-economic						
Economical	•	Hlain	g Thayar (Easter	n) Township	is located in Yar	igon Region and
				· _	development. The	
			-		-	
			the township have few employees and most of them work as factory			
		workers.				
	•	Lives	tock farming is o	owned and broken	ed.	
	•	The t	ownship is locat	ed on the Ya	ngon-Pathein roa	ad and has good
		transportation. Although the township does not have any major				
		-	products, there are exports from the Irrawaddy region.			
Land Use	•	-				
	-	Land using of Hlaing Thayar (Eastern) Township is the follow table.No.Types of LandArea (acres)				
		<u>1.</u>	Net Cultivation		u	AILA (allts)
		1.		пи		

		(vi) Doddy land	 	
		(vi) Paddy land       (vii)     Farmland for crop		
		(viii) Cultivated Island		
		(ix) Orchard		
		(iii) Orenard (x) Hillside		
	2.	Vacant Land Area		
	3.	Industrial Land	3455.678	
	4.	Rural Land and Others	13191.552	
	5.	<b>Reserved Forest and Protected Forest Area</b>	-	
	6.	Wild forest	-	
	7.	Virgin Soil area	-	
	8.	Non-cultivated area	-	
Industry	As th	e industry of Hlaing Tharay (East Ping) Towns	hip	
	• Arr	ny garment factory (1).		
	• 108	factories in Industrial Zone (1).		
	• 132	2 factories in Industrial Zone (2).		
	• 66	factories in 3 industrial zones		
	• 123	factories in 4 industrial zones		
	• 13	factories in 6 industrial zones		
	• 43	factories in 7 industrial zones		
	• 306	factories in Shwe Linping Zone		
	There are total of (92) privately owned domestic industries in the			
	township.			
		• There are (22) cooperative societies and (1) cooperative societies in		
		Hlaing Thayar (East Pyong) township.		
Economic		modity depot in Hlaing Tharay (Eastern) Tow	vnship. There are	
Infrastructure	no fairgrounds.			
	• There are 11 state-owned markets, 4 malls, 8 private banks and 1			
	gover	government banks, 467 stores and shops and 3 drinking water		
	indus	tries.		
Livelyhood	• The r	number of people working in Hlaing Thayar (E	astern) Township	
	is go	overnment employees (2887); service industri	ry (185 people);	
	Trans	sactions (978 people); Industry (17,350 people	); Random (3270	
	peop	e) and other business (2645 people).		
The number of		aing Thayar (Eastern) township, the number o	f working people	
working people	(1326	598) and the number of unemployed (22709) is	14.6.	
and unemployed				
Educational	• High	schools (8) in Hlaing Tharay (Eastern) Towns	ship. High school	
	branch (5) schools; Primary school (14) Pre-primary school (4);			
		e are 7 monastic education schools.	-	
Health Information		e are 2 (2) government hospitals in Hlaing	Tharay (Eastern)	
			•	
		Township. (2) private hospitals; Dispensary (113); and there are 4 (4)		
		Health Departments/Divisions.		
		most common diseases in the region are diarr	hea, tuberculosis	
		ach ache Liver disease.		
Sports and	• Socce	er field (2) in Hlaing Tharay (Eastern) Town	nship. Volleyball	

Manufacturing and Distribution of Various Types of Jellies

entertainment industry	court (2); Golf course (1); Cinema (1); Public Park (1).
Religious Information •	<ul> <li>As religious buildings in Hlaing Tharay (Eastern) Township, Pagoda (1); Monastery (46); Nunnery School (2); There is (1) temple.</li> <li>A prominent god The pagodas are Aung Munthaya Pagoda, Shwe Rin Aye Pagoda.</li> </ul>

Source- <u>www.gad.gov.mm</u>

# 4.4.2 Primary Data for the Surrounding Environment 4.4.2.1 Air Quality

The objective of the air-quality sampling program is to document baseline air quality conditions in the project area. Seven sampling points were selected in the project area. Field investigation was done by EMP team in March 2018 for baseline data of water quality, air quality and noise. These points are listed in Table 4.9 and shown in Figure 4.2.

No	Location ID	Location	Coordinate
1	Location-1 (AMP-1)	Factory estate	16° 54' 35.66" N, 96° 04' 13.34" E
2	Location-2 (AMP-2)	Raw Material Storage Area	16° 54' 34.69" N, 96° 04' 13.45" E
3	Location-3 (AMP-3)	Adjust Substance Room	16° 54' 34.93" N, 96° 04' 13.56" E
4	Location-4 (AMP-4)	Adjust Flavor & Color Room	16° 54' 34.48" N, 96° 04' 14.71" E
5	Location-5 (AMP-5)	Mixing Room	16° 54' 34.63" N, 96° 04' 14.24" E
6	Location-6 (AMP-6)	Packing Area	16° 54' 33.92" N, 96° 04' 14.08" E
7	Location-7 (AMP-7)	Boiler Section	16° 54' 36.35" N, 96° 04' 14.24" E

Table 4.7Air Quality Monitoring Points (AMP)

Notte: AMP- Air Quality Monitoring Point





Figure 4.1 Location of Air Quality Monitoring Points



Figure 4.2 Air Quality Sampling Stations

The air quality assessment involved the measurement of O<sub>2</sub>, CO, CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, TVOC, PM<sub>2.5</sub> and PM<sub>10</sub>content in air. Wind direction and wind speed were also measured in this project area. These Qualities were measured using HAZ-SCANNER<sup>TM</sup> Model–EPAS, KANE 900 PLUS Combustion Analyzer, DUSTTRAK<sup>TM</sup> 8532 AEROSOL MONITOR, PHOTOVAC 2020 Combo Pro<sup>TM</sup> Photoionization Detector and Weather Text<sup>TM</sup> ULTIMETER 100.

Air Samples collected from the locations as shown in Table 4.15 were analyzed at Laboratory of GMES Co., Ltd and the results obtained are shown in Table 4.10 & Table 4.16 by comparing with air quality guidelines of Myanmar Environmental Quality (Emission) Guidelines 2015 from Ministry of Natural Resources and Environmental Conservation.

# The Monitoring Instruments

<b>The ambient air quality</b> was measured 24 hr. continuous within factory premise. Two technicians were monitored stand by. The instrument used for ambient air quality measurement HAZ-SCANNER EPAS is a true environmental air station providing ambient air quality monitoring of critical EPA criteria pollutants and air parameters. See the calibration certificate attachment in appendix (3).	Haz-Scanner
<ul> <li>The Stack Emission was measured to the Boiler. The insutrment used for boiler stack emission. Kane 900 plus combustion analyzer is handheld multi-gas emissions analyzer is easy to use for domestic and industrial boiler flue gas measurement and analysis. See the calibration certificate attachment in appendix (3).</li> <li>The DustTrak II Aerosol Monitor 8532 is a handheld battery operated, data-logging, single- channel; light-schatteing laser photometr thea gives real-tiem aerosol mass readings. This monitor measures aerosol contanminants such as dust, smoke, fumes and mists.</li> </ul>	KANE 900 PLUS Combustion Analyzer
The 2020 Combo Pro measures the concentration of airbone gases and vapors that can be ionized by a photoionization dector. The 2020 ComboPro can dectect thousands of different types of airbones gase and vapors and its response depends on the characteristics as well as the concentration of each compound.	PHOTOVAC 2020 Combo Pro <sup>TM</sup>

## Manufacturing and Distribution of Various Types of Jellies

Na	Denominations	TT	Measured	National Environmental Quality Emission Guidelines (2015)		
No.	Parameters	Unit	Data	Avg. Period	Guideline Value (µg/m <sup>3</sup> )	
1	Oxygen	mol %	21.20	-	-	
2	Carbon Monoxide	ppm	0.14	-	-	
3	Carbon Dioxide	ppm	278.88	-	-	
4	Ammonia	ppm	24.78	-	-	
5	Nitrogen Dioxide	µg/m <sup>3</sup>	79.656	1-hour	200	
6	Sulphur Dioxide	µg/m <sup>3</sup>	0.131	24-hour	20	
7	Particulate Matter PM <sub>10</sub>	µg/m <sup>3</sup>	218.93	24-hour	50	
8	Particulate Matter PM <sub>2.5</sub>	µg/m <sup>3</sup>	126.57	24-hour	25	
9	Ozone	µg/m <sup>3</sup>	42.61	8-hour	100	
10	Total Volatile Organic Compound (TVOC)	ppm	0.38345	24-hour	-	

Table 19 Ambient Air (	Juglity Data	(Location 1)	$(20.2, 2010 \pm 21.2, 2010)$	
Table 4.8 Amblem An C	Zuanty Data	(Location-1)	(30.3.2018 to 31.3.2018)	

# The Analysis Report is shown in Appendix (12).

According to Table 4.10, particulates levels were much higher than the recommended air quality guidelines established by National Environmental Quality (Emission) but levels of other parameters were lower than this standard.

The ambient  $PM_{2.5}$  and  $PM_{10}$  level is higher than the NEQG due to the transportation of motor vehicle and near the road with the entrance of the factory. Moreover, cumulative impact may be because the factory is located at the Industrial zone. There should be implemented according to EMP for this impact.

Table 4.9 Workplace Air Quality Data (Location- 2 to 7)

Parameters	Average period	<b>T</b> T •/	Location ID						
		Unit	2	3	4	5	6	7	
Total Volatile Organic Compound (TVOC)	1hr	ppm	0.317	0.208	0.517	0.933	0.667	0.075	
Particulate Matter, PM <sub>10</sub>	8hr -	$\mu g/m^3$	2.792	1.844	3.875	0.117	0.083	0.009	
Particulate Matter, PM <sub>2.5</sub>		µg/m <sup>3</sup>	2.24	1.719	1.719	2.094	2.271	1.969	

# The Analysis Report is shown in Appendix (12)

# Manufacturing and Distribution of Various Types of Jellies

Tuble 1.10 Boner Sus Emission Butt									
	Parameters and Unit								
Location -7	Oxygen (O <sub>2</sub> ), mol %	Carbon monoxide (CO), mg/m <sup>3</sup>	Carbon dioxide (CO <sub>2</sub> ), mol %	Nitrogen oxide (NO)	Sulfur dioxide (SO <sub>2</sub> )				
Boiler Stack	20.5	966	20	0	0				
NEQG (Small combustion facilities Emission)	-	-	-	650 mg/Nm <sup>3</sup>	2,000 mg/Nm <sup>3</sup>				

Table 4.10 Boiler Stack Gas Emission Data
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# The Analysis Report is shown in Appendix (12).



Figure 4.3 Photos of Boiler Stack Gas Monitoring

# 4.4.2.2 Water Quality

The objective of the water-quality sampling program is to document baseline conditions of water quality in the project area. Five sampling points were selected in the project area. These points are listed in Table 4.13 and shown in Figure 4.5.

Samples were compared with Drinking Water Standards of WHO, EPA and Indian Specification for tube well water and drinking water; and Water Quality Guidelines of National Environmental Quality (Emission) Guidelines from Ministry of Natural Resources and Environmental Conservation for waste water.

These samples were analyzed at Laboratory of GMES Co., Ltd and at Ecological Laboratory of Advancing Life and Regenerating Motherland (ALARM) to confirm the analysis results from GMES and the results obtained are shown in Appendix (14).

# Manufacturing and Distribution of Various Types of Jellies

Table 4.11 Water Quality Sampling Folias (50.5.2010)							
No.	Sample ID	Location	Location point				
1	Location -1 (SP-1)	Tube well	16° 54' 35.63" N, 96° 04' 14.96" E				
2	Location-2 (SP-2)	Water tap (Canteen)	16° 54' 35.67" N, 96° 04' 18.73" E				
3	Location-3 (SP-3)	Boiler Section	16° 54' 36.42" N, 96° 04' 14.73" E				
4	Location-4 (SP-4)	Cooling Section (Production Area)	16° 54' 36.43" N, 96° 04' 14.30" E				
5	Location-5 (SP-5)	Factory inside drain channel	16° 54' 34.11" N, 96° 04' 14.89" E				

Table 4.11 Water	Quality Sampling	Points (30.3.2018)
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WSP = water sampling point



Figure 4.4 Locations of Water Quality Sampling Points



Figure 4.5 Photos of Water Sampling collecting

## Manufacturing and Distribution of Various Types of Jellies

				Drinking Water Standards			
No.	D. Parameters U	Unit	Analysis Value	WHO (2011)	EPA (Spring 2012)	Indian Specification (IS: 10500, 2012)	
1	рН	-	6.54	6.5-8.5	6.5-8.5	6.5-8.5	
2	Chloride (Cl <sup>-</sup> )	ppm	158	250	250	250	
3	Total Hardness	ppm	9	500	-	200	
4	Total Iron (Fe)	ppm	< 0.1	0.3	0.3	0.3	
5	Sulphate (SO <sub>4</sub> <sup>2-</sup> )	ppm	2.5	250	250	200	
6	Total Alkalinity	ppm	112	-	-	200	
7	Turbidity	NTU	1.92	5	-	1	
8	Manganese (Mn)	ppm	ND	0.4	0.05	0.1	
9	Aluminum (Al)	ppm	0.03	0.2	0.2	0.03	
10	Copper (Cu)	ppm	ND	2	1	0.05	
11	Cyanide (CN)	ppm	ND	0.07	0.2	0.05	
12	Arsenic (As)	µg/l	25	10	10	10	
13	Total Dissolved Solids (TDS)	ppm	420	600	500	500	

Table 4.12 Water Quality Data for Tube Well Water (	(Location-1) (26.4.2018)
Tuble 1.12 Water Quality Data for Tube Well Water	(1000000011)(20.1.2010)

ND\* – Not Detected # The Analysis Report is shown in Appendix (14).

According to Table 4.14, Arsenic level of tube well water exceeded the standard value. Levels of other parameters were lower than the standards. The results generated for the present study indicate that the quality of tube well water in the project area is showing any signs of stress because water is used for process water, boiler feed water and other purposes in this proposed project. So Thai Faster Products and M.K. Company Limited have a plan to install water treatment system.

Table 4.13 Water Quality Data for Drinking Water (Location-2) (26.4.2018)

					Drinking Wate	er Standards
No.	Parameters	Unit	Analysis Value	WHO (2011)	EPA (Spring 2012)	Indian Specification (IS: 10500, 2012)
1	pН	-	7.24	6.5-8.5	6.5-8.5	6.5-8.5
2	Chloride (Cl <sup>-</sup> )	ppm	134	250	250	250
3	Total Hardness	ppm	ND	500	-	200
4	Total Iron (Fe)	ppm	< 0.1	0.3	0.3	0.3
5	Sulphate $(SO_4^{2-})$	ppm	2.5	250	250	200
6	Total Alkalinity	ppm	112	-	-	200
7	Turbidity	NTU	0.84	5	-	1
8	Manganese (Mn)	ppm	ND	0.4	0.05	0.1
9	Aluminum (Al)	ppm	0.02	0.2	0.2	0.03
10	Copper (Cu)	ppm	ND	2	1	0.05

### Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

11	Cyanide (CN)	ppm	ND	0.07	0.2	0.05
12	Arsenic (As)	µg/l	0	10	10	10
13	Total Dissolved Solids (TDS)	ppm	420	600	500	500

ND\* – Not Detected # The Analysis Report is shown in Appendix (14).

According to Table 4.15, levels of all parameters were lower than the standards. So the results generated for the present study indicate that the quality of drinking water in the project area is not showing any signs of stress because drinking water is obtained by removing the impurities in tube well water effectively by the water treatment system.

Table 4.14 Water Quality for Boiler Section & cooling section (Location-3 & 4) (26.4.2018)

			Analysi	s Value	
No.	Parameters	Unit	Boiler	Cooling	NEQG (2015) General
110.	T drameters	Om	section	Section	Applications
			Location- 3	Location-4	
1	pH	-	12.78	6.35	6-9
2	Chemical Oxygen Demand (COD)	ppm	25	495	250
3	Biochemical Oxygen Demand (BOD <sub>5</sub> )	ppm	ND	137	50
4	Ammonia (NH <sub>3</sub> )	ppm	ND	ND	10
5	Total Cyanide (CN)	ppm	ND	ND	1
6	Total Iron (Fe)	ppm	0.5	< 0.1	3.5
7	Oil & Grease	ppm	ND	ND	10
8	Phenols	ppm	ND	ND	0.5
9	Sulfide	ppm	ND	ND	1
10	Total Suspended Solids (TSS)	ppm	610	140	50
11	Chromium (VI)	ppm	ND	ND	0.1
12	Chromium(Total)	ppm	ND	0.03	0.5
13	Copper	ppm	ND	ND	0.5
14	Nickel	ppm	ND	ND	0.5
15	Zinc	ppm	0.03	ND	2

ND\* - Non Detectable, NEQG= National Environmental Quality (Emission) Guideline

# The Analysis Report is shown in Appendix (15).

According to Table 4.16, pH and Total Suspended Solids level of Location- 3 were above the standard value. COD,  $BOD_5$  and Total Suspended Solids level of Location- 4 were higher than standard values comparing with National Environmental Quality (Emission) Guidelines. The results show that levels of other parameters were lower than this standard.

The value of location-3 and location 4 are not treated and the factory has already installed wastewater treatment plant (WWTP). There will be discharged to the municipal drain channel after treated of wastewater in the WWTP.

No.	Parameters	Unit	Analysis Value Location- 5	NEQG (Food and Beverage Processing)
1	pH	-	4.36	6-9
2	Chemical Oxygen Demand (COD)	ppm	5190	250
3	Biochemical Oxygen Demand (BOD <sub>5</sub> )	ppm	2170	50
4	Oil & Grease	ppm	6	10
5	Total Suspended Solids (TSS)	ppm	320	50

Table 4.15 Analysis result of Factory inside drain channel (Location- 5) (26.4.2018)

ND\* – Non Detectable, # The Analysis Report is shown in Appendix (15).

According to Table 4.17, Oil & Grease level was lower than the standard value and levels of other parameters were higher than the standard comparing with National Environmental Quality (Emission) Guidelines.

The value of location-4 is not treated and the factory has already installed wastewater treatment plant (WWTP). The location-5 is produce from the discharged of processing and there will be discharged to the municipal drain channel after treated of wastewater in the WWTP.

## 4.4.2.3 Wastewater Quality

The objective of the waste water-quality sampling program is to document baseline conditions of water quality in the project area. Three sampling points were selected in the project area. These points are listed in Table 4.18 and shown in Figure 4.7.

These results were compared with Guidelines of National Environmental Quality (Emission) Guidelines from Ministry of Natural Resources and Environmental Conservation for waste water (Food and Beverages Processing).

These samples were analyzed at Laboratory of GMES Co., Ltd and at Ecological Laboratory of Advancing Life and Regenerating Motherland (ALARM) to confirm the analysis results from GMES and the results obtained are shown in Appendix (15).

Table 4.16 Wastewater Quality Collecting Points

No.	Sample ID	Location	Collect Date	Location point
1	WWSP -1	Processing discharge	14.6.2022	16° 54' 35.67" N, 96° 04' 14.77" E
2	WWSP-2	inlet of WWTP (Before treated)	14.6.2022	16° 54' 35.96" N, 96° 04' 14.56" E
3	WWSP-3	Outlet of WWTP (after treated)	21.7.2022	16° 54' 34.25" N, 96° 04' 15.33" E

WWSP = wastewater sampling point

# Manufacturing and Distribution of Various Types of Jellies



Figure 4.6 Wastewater Quality collecting points

Table 4.17 Analysis result for waste water of	quality, WWSP-1 & WWSP-2 (1.7.2022)

	Parameters	Unit	Analys		
No.			Processing discharge	Inlet of WWTP	NEQG (Food and Beverage
			WWSP-1	WWSP-2 (before treated)	Processing)
1	5-day Biochemical Oxygen Demand	mg/l	2060	380	50
2	Chemical Oxygen Demand	mg/l	5070	1260	250
3	Oil and Grease	mg/l	5	<5	10
4	pH	-	4.08	4.32	6~9
5	Total Nitrogen	mg/l	8	<5	-
6	Total Phosphorous	mg/l	2.8	0.15	2
7	Total Suspended Solids	mg/l	38	24	50
8	Coliform	-	> 1100	150	

ND\* – Non Detectable, NEQG= National Environmental Quality (Emission) Guideline # The Analysis Report is shown in Appendix (15).

According to Table 4.19, BOD, COD, pH, total phosphorous and coliform value are higher than the standard value. But TSS, Oil and Grease, t were higher than the standard comparing with National Environmental Quality (Emission) Guidelines.

The value of WWSP-1 and WWSP-2 is not treated and the factory has already installed wastewater treatment plant (WWTP). There will be discharged to the municipal drain channel after treated of wastewater in the WWTP.

#### Manufacturing and Distribution of Various Types of Jellies

Tuble 4.10 Finalysis result for waste water quality, WWSF 5 (5.0.2022)						
		Unit	Analysis Value	Minimum	NEQG (Food & Beverage Processing)	
Ν	Parameters		Outlet of WWTP	Measurement		
0.	T urunieters		WWSP-3	Range of		
			(after treated)	Methods		
1	5-day Biochemical Oxygen	mg/l	170	30	50	
-	Demand (BOD <sub>5</sub> )	<u>g</u> /1	170	50	20	
2	Chemical Oxygen Demand	mg/l	580	30	250	
2	(COD)	1115/1	500	50	250	
3	Oil and Grease	mg/l	<5	5	10	
4	pH	-	6.95	0.1	6~9	
5	Total Nitrogen	mg/l	<5	5	10	
6	Total Phosphorous	mg/l	0.02	0.02	2	
7	Total Suspended Solids	mg/l	22	1	50	
8	Temperature	°C	26	1	<3 <sup>b</sup>	
9	Coliform	-	> 1100	MPN/100 ml	400	

Table 1 19 A polyais regult for worth water and	$(2 \times 2000)$
Table 4.18 Analysis result for waste water qua	anty, w w SP-5 (5.6.2022)

ND\* – Non Detectable, NEQG= National Environmental Quality (Emission) Guideline # The Analysis Report is shown in Appendix (15).

> According to Table 4.20, BOD, COD and Coliform were a little higher than the standard value and other parameters within the standard of National Environmental Quality (Emission) Guidelines.

> The above value of WWSP-3 is after treated from the Wastewater Treatment Plant. So, there will perform within the Guideline of NEQG for the effluent of wastewater value by the Thai Faster Products and M.K Co., Ltd.

#### 4.4.2.4 Noise Level

Three sampling points for noise level measurement were selected in the project area. These points are same as the air quality sampling points of Location-1, 6 & 7 listed in Table 4.21 and shown in Figure 4.8. Noise measurements were taken using Sound Level Meter and the results recorded for the present study are presented in Table 4.22.



ID	Location	Average Noise Level, L <sub>Aeq</sub> , dB(A)	Period	Coordinate Point	
Location-1	near entrance of the factory	76.345 56.59	Day Night	16° 54' 35.66" N, 96° 04' 13.34" E	
Location-6	Mixing room	70.95 (working hour)	1 hr	16° 54' 33.92" N, 96° 04' 14.08" E	
Location-7	Boiler section	71.2 (working hour)	1 hr	16° 54' 36.35" N, 96° 04' 14.24" E	

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# Manufacturing and Distribution of Various Types of Jellies

# The Analysis Report is shown in Appendix (13).



Figure 4.7 Wastewater Quality collecting points

Table 4.20 Noise Level Monitoring Data
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ID	Average Noise Level, L <sub>Aeq</sub> , dB(A)	Period	National guideline for Industrial Zone (Day & Night)				
Location-1	76.345 56.59	Day Night	70 dBA				
Location-5	70.95 (working hour)	1 hr	US OHS guideline for 1 hour average: (working hour)				
Location-7	71.2 (working hour)	1 hr	105 dBA				
# The Analysis Report is shown in Appendix (13).							

According to the Tabl e4.22, Noise level guidelines established by National Environmental Quality (Emission) are 70 dBA for factory surrounding and 55 dBA for residential vicinity. The average values of noise level recorded at location-1 (Ambient noise) monitored is slightly greater than the standard. This noise would be from ambient sources including vehicular traffic on the road.

The Noise level guidelines established by United State OHS is 105 dBA during the working time for 1 hour average of noise exposure limit. The average values of noise level recorded at location-6 (mixing room) and location-7 (boiler room) monitored is lower than the United State OHS standard.

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# 4.4.2.5 Soil Quality

Soil sample was collected from beside the Boiler Section in the project area as shown in Figure 4.9. Laboratory of GMES Co., Ltd performed the analysis of soil sample by measuring the parameters such as pH, Chloride, Total Iron, Aluminum. Soil location point is shown in Figure 4.9 and the result is shown in Table 4.23.



Figure 4.8 Soil Quality Sampling Point

No.	Parameters	Unit	Analysis Value
1	pН	-	7.53
2	Chloride (Cl <sup>-</sup> )	g/kg soil	0.63
3	Total Iron (Fe)	mg/kg soil	10
4	Copper (Cu)	g/kg soil	ND
5	Cyanide (CN)	mg/kg soil	ND
6	Aluminum (Al)	mg/kg soil	0.15
7	Manganese (Mn)	g/kg soil	ND
8	P- Alkalinity	mmol/l extract	0
9	Total Alkalinity	mmol/l extract	1.305
10	Extractable Acidity	cmol/kg soil	1.125

ND\* – Not Detected # The Analysis Report is shown in Appendix (16).

These results shown in Table 4.23 are existing soil conditions of project area. At this condition, vegetation is already present and it looks healthy. So it can be concluded that existing soil is unpolluted. We were collected soil sample for the base line of the project current condition.

# 5.0 POTENTIAL IMPACT ASSESSMENT AND MITIGATION MEASURE

# **5.1 General Description of the Process**

The general steps of manufacturing of jellies are described briefly to identify all potential sources of impacts.

Jelly is formed when a suitable concentration of pectin, sugar, acid, fruit flavor, fruit color and water is achieved. The brief description of the process for the manufacturing of jelly will be provided in the following section.

The production process of Jellies involves unit operations like Preparation of Raw Materials, Mixing, Filling, Cooling and Packing.

The processing typically comprises of:

# 5.2 Adverse Impacts for Processing Step

The following section reviews the potential impacts of the activities on the environment and possible measures against potential adverse effects. Relations between impact sources and various part of the environment are summarized in the Figure 5.1.

Inputs		Processing Step	Pollutants
Electricity Manpower		Sugar Water Fruit Flavor Color Preparation of Raw Materials	Dust, Spill
Electricity Manpower		$ \begin{array}{c} 5 \text{ min} \\ \hline 85 ^{\circ}\text{C} \end{array} \end{array} \xrightarrow{\text{Mixing}} $	Heat
Electricity Manpower		Temperature not below 70°C Filling	Spill
Electricity Manpower Water		1 hour Cooling	Warm water
Cartoon box, Tape, Inner plastic, Manpower		Packaging	Tapes, plastics

Figure 5.1 Production Lines for Manufacturing Jellies and Related Pollutions

# Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

	Processing	Pollutants	
floor washing	Preparation of Raw material	Used bags, bins and cartoon box	
moor washing	Mixing	Washed water (tank)	
	Filling	Washed water (tank)	
Boiler	Boiler running	boiler blow down water	

# 5.3 Impact Assessment Methodology

The significance of the aspects/ impacts of the process were rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The significances of the impacts were determined through a synthesis of the criteria below:

# 5.3.1 Probability

Probability describes the likelihood of the impact actually occurring as follow: The weights are assigned to each attribute:

Attribute	Description	Weight	
Improbable	The possibility of the impact occurring is very low, due to the	1	
Improvable	circumstances, design or experience.	1	
Probable	There is a probability that the impact will occur to the extent that		
FIODADIE	ovision must be made therefore.		
Highly	It is most likely that the impact will occur at some stage of the	1	
Probable	development.	4	
	The impact will take place regardless of any prevention plans, and		
Definite	there can only be relied on mitigation actions or contingency plans to	5	
	contain the effect.		

Table 5.1 Rating for Probability

# 5.3.2 Duration

Table 5.2 Rating for Duration

Attribute	Description	Weight
	The impact will either disappear with mitigation or will be mitigated	
Short term	through natural processes in a time span shorter than any of the	1
	phases.	
Medium	The impact will last up to the end of the phases, where after it will be	3
term	mitigated.	5
	The impact will last for the entire operational phase of the project but	
Long term	will be mitigated by direct human action or by natural processes	4
	thereafter.	
	Impact that will be non-transitory. Mitigation either by man or	
Permanent	natural processes will not occur in such a way or in such a time span	5
	that the impact can be considered transient.	

# Manufacturing and Distribution of Various Types of Jellies

# 5.3.3 Scale

Scale is the physical and spatial size of the impact as follow:

Table 5.3 Rating for Scale

Attribute	Description	Weight
Site	The impacted area extends only as far as the activity, e.g. footprint.	1
Local	The impact could affect the whole, or a measurable portion of the above mentioned properties.	2
Regional	The impact could affect the area including the neighboring residential areas.	3

# 5.3.4 Magnitude/ Severity

Magnitude/ severity determine does the impact destroy the environment, or alter its function.

 Table 5.4 Rating for Magnitude or Severity

Attribute	Description	Weight
Low	The impact alters the affected environment in such a way that natural processes are not affected.	2
Medium	The affected environment is altered, but functions and processes continue in a modified way.	6
High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.	8

# 5.3.5 Significance

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.

# Significance = (Duration + Scale + Magnitude) x Probability

# Manufacturing and Distribution of Various Types of Jellies

Attribute	Description	Weight			
Negligible	The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.	< 20			
Low	The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.	< 40			
Moderate	The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.	< 60			
High	The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/ or the cost of management intervention will be a significant factor in mitigation.	> 60			
Status	Perceived effect of the impact				
Positive (+) Beneficial impact					
Negative (-) Adverse impact					
Negative impa	Negative impacts are shown with a (-) while positive ones are indicated as (+)				

Table 5.5 Rating for Significance

The significance of the impact, rated from Low to High, is indicated in the table below with an explanation of the impact magnitude and a guide that reflects the extent of the proposed mitigation measures deemed necessary.

# Manufacturing and Distribution of Various Types of Jellies

## Thai Faster Products & M.K Co., Ltd.

# Table 5.6 Impact Significances for Operation Phase

Table 5.6 Impact Significances for Operation Phase							
Impact Sources	Pollutants	Impact Duration	Impact Scale	Impact magnitude/ Severity	Impact probability	Total Score	Impact Significance Rating
Air Quality							
Processing	PM, dust	Long term (4)	Site (1)	Low (2)	Definite (x5)	(35)	Low (Negative)
Generator	$\begin{array}{c} \text{CO, CO}_2, \text{SO}_2, \\ \text{NO}_x, \end{array}$	Short term (1)	Local (2)	Low (2)	Definite (x5)	(25)	Low (Negative)
Boiler	PM, SOx, NOx, COx	Long term (4)	Site (1)	Medium (6)	Definite (x5)	(55)	Moderate (Negative)
Truck and delivery car	SOx, NOx, COx	Medium term (3)	Local (2)	Low (2)	probable (x2)	(14)	Negligible (Positive)
Water Quality						1	
Domestic water	pH, BOD, COD, TSS, TDS, Oil & Grease	Medium term (3)	Site (1)	Medium (6)	Definite (x5)	(35)	Low (Negative)
Process wastewater	BOD,COD, TSS, TDS, color, Oil & Grease, pH	Long term (4)	local (2)	Medium (6)	Definite (x5)	(60)	Moderate (Negative)
Waste Disposal	1	[		[	[	1 1	
Hazardous Wastes	Water & soil	Madine torus	Site (1)	Low (2)	Definite (5)	(30)	
Non-Hazardous Wastes	Water & soil	Medium term (3)	Local (1)	Low (2)	Definite (x5)	(30)	Low (Negative)
Domestic Wastes	Water & soil	Medium term (3)	Local (1)	Low (2)	Definite (x5)	(30)	(Regative)

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# Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

				,			
Noise							
vehicle movement,	worker health and surrounding	Short term (1)	Site (1)	Low (2)	Definite (x5)	(20)	Low (Negative)
operation of generators	environment	Short term (1)	Site (1)	Low (2)	Definite (x5)	(20)	Low (Negative)
Fire Hazards			r		1	[	
electric shock, Fuel Leakage, Smoking	PM, Dust and explosion	Permanent (5)	Local (2)	High (8)	Definite (x5)	75	High (Negative)
Emergency Risk							
Flood risk, cyclone, high tide Earthquake	Air, Water, Soil and human Health	Short term (1)	Regional (3)	High (8)	probable (x2)	24	Low (Negative)
Hazardous of Machi	neries Handling						
Electric shock, improper instilling machines, Do not have regularly maintenance Boiler and air compressor	Worker Health and Surrounding Environment	Permanent (5)	Local (2)	High (8)	Definite (x5)	75	High (Negative)
Local Economy							
Job opportunities	Job opportunities for local people will be provided and regional will be boosted.	Long term (4)	Local (2)	Medium (6)	Definite (x5)	60	High (Positive)

Green Myanmar Environmental Services Co., Ltd.

Manufacturing and Distribution of Various Types of Jellies

The various hazards associated with the proposed paddy husk fired boiler are outlined as below:

_			
	No.	Blocks/areas	Hazards identified
	1.	Rice husk storage in open yard	Fire, spontaneous combustion
	2.	Rice husk handling	Fire
ſ	3.	Boiler	Steam explosions
	4.	Light Density Oil (LDO) Containers	Fire

Table 5.7 Potential Hazards associated with the Boiler

Heavy Furnace Oil (HFO) Containers

The quantity of hazardous substances like LDO, HFO used in the rice husk boiler for initial firing of boiler is very less. Hence the major fire and explosion accident due to the use of these materials is very less.

Most of the anticipated impacts are assessed and found out to be low, except high influx of workers to the nearby area. On the other hand, the benefits such as job opportunities and linkage with the agricultural sector will be created and also generates income for the Government. Thus; the envisaged plant is environment friendly and does not have any pollutant emission to the environment.

# 5.4 Mitigation Measures for Operation Phase

The mitigation measures for operation phase pollution of TFPMK's Jelly Factory are summarized in the following table.

Activity & Sub Activities	Environ - mental Impacts	Mitigation Measures	Final Impacts
		Operation Phase	
1. Air Pollution			
Process, Boiler, Generator, Truck and Delivery car	Air Quality	<ul> <li>Good ventilation and clear assess will be provided.</li> <li>Select diesel generator type with high combustion efficiency to minimize dark smoke generation</li> <li>Conduct regular maintenance</li> <li>Trained/Approved transports will be given work for the transportation of the raw materials / products.</li> <li>Proper records will be maintained.</li> </ul>	Low, as proper handling of material will be followed

Table 5.8 Mitigation Measures for Operation Phase

2. Solid Waste					
Packaging materials such as waxed corrugated boxes, pallets, shrink wrap, strapping ties, drums & polystyrene	Soil contamina- tion	<ul> <li>Segregation of solid wastes will be done and will be sold for raising social- welfare fund.</li> <li>There will provide training programs to related employees for handling and storage of chemicals.</li> </ul>	Beneficial Impacts on the factory and surrounding environment		
3. Wastewater					
Effluent Generation from the Process, Utility	Water quality	<ul> <li>Segregation of the waste streams will be done.</li> <li>Less pollution streams will be treated.</li> <li>Treated effluent will be utilized for greenbelt, gardening &amp; firefighting requirement.</li> <li>Domestic wastewater will be disposed of into septic tank.</li> </ul>	Low impacts, As extreme care will be taken in treatment & monitoring of the quality of the effluent.		
4. Hazardous Waste	Generation				
Raw materials such as color, essence or flavoring ingredients	Soil, Water	<ul> <li>Preparation and mixing areas will be made of impervious surface to prevent leach ability.</li> <li>Records of quantity of waste generated will be maintained.</li> <li>Empty cans or drums will be sold to the vendors.</li> </ul>	Low impacts, due to preventive maintenance		
5 Noise Pollution					
Noise Generation due to plant operation	Factory area & Environment	<ul> <li>Preventive Maintenance to ensure low noise generation.</li> <li>Personal Protective Equipment (Ear Plug &amp; Muff) will be utilized in the affected area.</li> </ul>	Low impacts, Due to preventive maintenance & usage of PPE's.		
6 Storage of raw mate	erials and produce	cts			
Storage of raw materials	Air, Risk	<ul> <li>Proper Storage area for raw materials, fuel oil drums and finished products.</li> <li>Proper records will be maintained.</li> <li>Good ventilation and clear assess will be provided.</li> </ul>	Low impacts, as proper Handling of material will be followed.		

# Manufacturing and Distribution of Various Types of Jellies

7. Hazardous of Mac	nineries Handlin	ισ	
Effect on Worker Occupational Health and Safety	Effect on Worker Occupation al Health and Safety	<ul> <li>Installation of machine prevention system with regular inspection on the system</li> <li>Regular safety training for workers in a accordance with OHS training</li> <li>Avoid unnecessary accidents.</li> </ul>	Beneficial impacts on the factory and surrounding environment
8. Fires Hazard			
<ul> <li>Accidental spillage of fuel from unconscious handling</li> <li>Ignorance of fire hazard</li> <li>Improper storage of raw materials and finished products</li> </ul>	Factory area & Surrounding Environment	<ul> <li>Scheduled fire drill will be done.</li> <li>In all the necessary locations in the factory fire extinguish -hers must be in place.</li> <li>The expiry date and working function of the fire extinguishers must be checked regularly.</li> <li>Regarded no-smoking sign</li> <li>Ensure smoking area(s) are away from flammable materials.</li> </ul>	Beneficial impacts on the factory and surrounding environment
9. Greenbelt Develop	ment		
Greenbelt Development	Factory area & Surrounding Environment	• Development of good greenbelt within premises and at periphery of the premises.	Beneficial impacts on Air, Land & Noise.
10.0.			
10. Socio-economic Employment	Socio economy	<ul> <li>Employment of the local people.</li> <li>Indirect employment to the service sector &amp; suppliers.</li> <li>Substantial benefits in the form of contracts to local agencies for different services</li> <li>Employment in Skilled, Semi</li> <li>Skilled and Labor class.</li> </ul>	Beneficial impacts on the socio economy

Most of the anticipated impacts are assessed and found out to be low, except high influx of workers to the nearby area. On the other hand, the benefits such as job opportunities and linkage with the agricultural sector will be created and also generates income for the Government. Thus; the envisaged plant is environment friendly and does not have any pollutant emission to the environment.

# 6.0 ENVIRONMENTAL MANAGEMENT PLAN AND MONITORING PROGRAM

# 6.1 Objective of Environmental Management Plan

Environmental Management Plan (EMP) makes to ensure that the quality of the environmental aspects does not deteriorate due to the operation of the proposed project. Environmental Management Plan (EMP) is a quality system that provides the framework to;

- Mitigate the probable or potential adverse impacts on various environmental components which have been identified during impact assessment.
- Protect the environmental resources where possible.
- Enhance the environmental components where possible.
- Monitor and verify the effectiveness of the mitigation measures implemented.
  - The environmental management plans required for the operational phase of Jellies

Manufacturing factory is summarized as follows:

- Air Pollution Management Plan
- Solid Waste Management Plan
- Wastewater Management Plan
- Noise Pollution Management Plan
- Drainage Management Plan
- Resource Utilizing Management Plan
- Occupational Health and Safety Management Program
- Socio-Economic Management Plan
- Fire Prevention Plan
- Emergency Response & Disaster Management Plan

#### 6.2 Environment Management Plan

The following sections describe the environment management system proposed for Operation phase. Thai Faster Products and M.K Company Limited must take responsibility to implement the environmental management plan as shown in Table 6.1.

Environmental Management Plan (Operation phase)				
Air Pollution Management Plan				
Objective	<ul> <li>To reduce the source and amounts of the pollutants that is responsible for the pollution of the air quality.</li> <li>To comply with national emission guidelines.</li> </ul>			
Management				
Plan	• Maintain green area to improve air quality.			
Flaii	• Regular checkup and scheduled maintenance of machineries and generators.			
	• Keep proper housekeeping in the factory or in the premises to reduce dust generation.			
	• There is no open burning of waste materials on site.			

Table 6.1 Environmenta	l Management Plan
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	Environmental Management Plan (Operation phase)
	<ul> <li>Install good ventilation system and dust emission system</li> </ul>
	<ul> <li>Employees are instructed to wear mask during working time in dust generating area. Careful handling and weighting of the powder.</li> <li>All the bare land area is covered with grass field or paved with concrete.</li> <li>Generator exhaust is oriented away from people accommodated area.</li> <li>A system such as water spraying in the chimney should be implemented to reduce particulate emissions from the boiler chimney.</li> <li>The ash from the boiler must be properly collected so that it does not scatter.</li> </ul>
Responsible Team	EMT Team Leader/ Members
Responsibility	<ul> <li>Implementation of above air pollution management plan.</li> <li>Contact the environmental service contractor for monitoring air quality as scheduled.</li> <li>Report the results of the air quality monitoring to the management and keep the records.</li> <li>Inform public about air quality at appropriate time.</li> </ul>
	Solid waste Management Plan
Objective	<ul> <li>To dispose solid waste generated in proper way to prevent from pollution of soil and water body.</li> <li>To comply with government waste management policy.</li> </ul>
Management Plan	<ul> <li>Hazardous Waste</li> <li>Storage <ul> <li>All waste, hazardous or not, must be contained to prevent it from</li> <li>blowing away and from leaching into surface or groundwater. Hazardous</li> <li>waste must be in containers or tanks clearly labeled with the words</li> <li>"Hazardous Waste". Volumes and time limits for storing hazardous waste</li> <li>on-site vary by generation category.</li> </ul> </li> <li>Handling <ul> <li>All employees must be instructed to the Safety Data sheet and there must</li> <li>be wore suitable PPE when the hazardous materials handling. Skillful and training worker must be taken and holding on it.</li> </ul> </li> <li>Disposal <ul> <li>Hazardous waste must be disposed at permitted waste facility such as authorized organization/ YCDC. Record amount of waste regularly.</li> </ul> </li> </ul>
Responsible Team	EMT Team Leader/ Members

	Environmental Management Plan (Operation phase)	
	Non-Hazardous waste	
Management Plan	<ul> <li>Storage Non-hazardous waste needs to be removed from on-site at regular intervals to prevent release to the environment, and to avoid additional permit requirements. Nonhazardous waste and unused product must be contained to prevent discharge to the air, or runoff to surrounding land or water.</li> <li>Disposal Non-hazardous waste disposed at permitted waste facility such as Yangon City Development Committee. Record amount of waste regularly.</li> </ul>	
Responsible Team	EMT Team Leader/ Members	
Responsibility	<ul> <li>To ensure the solid waste management plan is implemented.</li> <li>To monitor whether the solid waste is segregated accordingly or not.</li> <li>To check the waste transfer notes and documented.</li> <li>To avoid pollution of the environment due to solid wastes.</li> </ul>	
	Noise Dollation Monogeneert Dier	
	<ul> <li>Noise Pollution Management Plan</li> <li>To reduce the noise pollutant of the factory boundary environment.</li> </ul>	
Objective	<ul> <li>To comply with national guidelines and OHS guideline.</li> </ul>	
Management Plan	<ul> <li>Use sound absorbing material such as curtains, insulation sheet and damper where necessary and appropriate.</li> <li>Generator shall be put in the enclosed room.</li> <li>Rotate the working shift for employees who work in the high noise area.</li> <li>Generator and machineries such as pumps have to be maintained regularly.</li> <li>Employees who work in the high noise area should be provided with enough ear plugs or ear mufflers.</li> <li>Drivers must turn off the vehicle engines when not moving.</li> </ul>	
Responsible Team	EMT Team Leader/ Members	
Responsibility	<ul> <li>Implementation of above noise pollution management plan.</li> <li>Contact the environmental service contractor for monitoring of noise level as scheduled.</li> <li>Report the results of the noise level monitoring to the management and keep the records.</li> <li>Inform public about noise quality at appropriate time.</li> </ul>	
Water pollution Management Plan		
Okiesti	To protect and mitigate for the water pollution.	
Objective	Prevent pollution of groundwater sources.	
Management	• All drainage channels need to be covered by gratings.	

	Environmental Management Plan (Operation phase)
Plan Responsible Team	<ul> <li>Baskets must be provided for Silt and debris</li> <li>Avoid disposing of used oil direct into the drain.</li> <li>Wastewaters from the production are collected to the wastewater treatment pond and discharge to the municipal drainage.</li> <li>To provide awareness of discharge of wastw water for employees.</li> <li>To monitor for the results of the water quality and keep the records it.</li> <li>EMT Team</li> <li>To ensure the above EMP is well implemented.</li> </ul>
Responsibility	<ul> <li>To monitor the effectiveness of the EMP.</li> <li>To take action if there is any concern.</li> </ul>
	Resource Utilizing Management Plan
Objective	• To minimize the electricity usage and water usage.
Management Plan	<ul> <li>Energy</li> <li>Use energy efficient lamp and devices. That costs more upfront but over the years it saves more money and energy.</li> <li>Use maximum day light.</li> <li>Educate employees regarding with the energy saving features of electrical appliances such as air conditioner, microwaves, fans, printers, computers and other devices to let them use these features to cut the energy usage.</li> <li>Plant shady trees outside of the building to protect from hotness of the building inside.</li> <li>Turn off and unplug the equipment when not using.</li> <li>Water</li> <li>Use eco flush toilets.</li> <li>Treated effluent will be utilize for greenbelt, gardening and firefighting requirement</li> <li>Domenstic wastewater will be disposed of into septic tank.</li> <li>Records of quantity of wastewater discharged will be maintained.</li> <li>Detect the leak and fix it immediately.</li> </ul>
Responsible Team Responsibility	<ul> <li>EMT Team Leader/ Members</li> <li>Report the electricity consumption and other energy issues to top management.</li> <li>Monitor the electricity consumption.</li> <li>If there is any concern, review the EMP.</li> <li>Take corrective action and fix it if it is required.</li> </ul>

Manufacturing and Distribution of Various Types of Jellies

# 6.3 Occupational Safety and Health Management Program

Thai Faster Products and M.K Company Limited currently maintain an occupational health and safety program actively managed by on-site staff. To implement the safety and health management for employees, the Occupational Health and Safety Management Committee was formed with the following members.

The duties and responsibilities of Occupational Health and Safety Management Committee are as follows.

- 1. To inspect the operation regularly with checklists for Safety and prevention of accidents.
- 2. To respond quickly when accident, illness or other emergency cases happen.
- 3. To convene the monthly committee meeting for discussing the situation of the Occupational Health and Safety status, accidents, emergency, other production problems and mitigation measures
- 4. To report the findings and remarks from the monthly meeting to the administration for implementation.
- 5. To provide training for safety and health risk and prevention
- 6. To keep the records of inspections, accidents and meeting minute.
- 7. Adequate budgetary provisions have been made by proponent. The management for execution of environmental management plans should be framed. The detailed capital and recurring (per annum) budget should be earmarked for pollution control/monitoring equipment; operation and maintenance of pollution control facilities.

Occupational health and safety management program is implemented to promote the health conditions, physical conditions, mental conditions and social well beings of the employees and to prevent from the risk of workplace hazard and incidents.

#### Medical Precautionary Measures

- Pre-employment medical examination must be done for all employees. Annual medical examinations are also recommended. Medical records of the employees are properly maintained and updated from time to time.
- Provide the trainings for first aid procedures, safe working procedures, safe use of equipment, good personnel hygiene practice and industrial hygiene to the employees.
- Medical personnel should be available on-site or by phone for advice and consultation.
- Emergency phone numbers should be posted near the telephones.
- At least one person on each shift should be trained for first aid, as well as qualified to do CSR (cardiopulmonary resuscitation).
- Provide eye wash and shower near fuel and chemical storage facility.
- Keep MSDS at place of chemical provision.

#### Emergency and First-aid Procedures

- First aid is immediate, temporary treatment given in the event of accident or illness.
- Check first whether the scene is safe to enter.
- Find out what happened.
- Take first aid kit, use appropriate PPE and wear gloves.

- Interview the injured person or bystander if possible.
- Conduct a head to toe check first to decide the overall condition.
- Identify the nature of the injury or illness as far as possible.
- Arrange for emergency services to attend.
- Manage the casualty promptly in appropriate ways.
- Wait until health care professional arriving to hand over.
- For treating burning injury, determine the burn type and severity, disinfectant and cover with thin and loose cloth to prevent from infection.
- For treating of cut and bruises, wash with water, apply pressure on affected area, use disinfectant and cover with damage.
- For eye incident such as entering debris or contaminants, do eye wash for a few minutes and go to hospital if required for medical assistance. Do not apply any eye drop if it is not prescribed by the physician.
- For treating of fractures, immobilize the area and apply cool pack. Elevate the injury part.
- Make emergency call to 911.

# <u>House Keeping</u>

Effective housekeeping can help control or eliminate workplace hazards. It includes

- Keeping work areas neat and orderly
- Maintaining halls and floors free of slip, trip and fall hazards
- Removing of waste materials (e.g., paper, cardboard) and other fire hazards from work areas
- Proper waste disposal
- Daily disposal of waste
- Keep isles and stairways clear
- Clean up during the shift
- Day-to-day cleanup
- Removal of unused materials
- Regular inspect, clean and repair tools, do not use damage tools
- Regular cleaning of lighting fixture and windows to get enough light
- Inspection to ensure cleanup is complete
- Keeping ventilation systems for perfect working condition
- Maintaining hygienic conditions in areas like canteens, near drinking water sources and toilets.
- Maintaining green area within the premise to suppress noise, fugitive dust and to improve the aesthetics.

# Safety Awareness and Training

- To increase the safety awareness of the employees \_
- Displaying safety caution billboards and safety posters mentioning Do's &
- Don'ts at various location \_at outdoor area, at canteen, at workplace, at aisles and at car park.
- Arranging housekeeping competition.
- Holding safety slogan competition.

## Manufacturing and Distribution of Various Types of Jellies

## • Provision of PPE.

To refresh and upgrade the knowledge of the safety issues, training program shall be organized at all levels of employees for safety and accident prevention. The following training program will be conducted periodically in a planned manner.

- Safe working procedures and practices
- Proper use of personal protective equipment
- Handling emergency situation
- Handling of hazardous chemicals training
- Firefighting training
- Emergency response training
- Health awareness talk
- Personnel hygiene practice
- General safety rules training

# Infectious Disease Control

- Do regular cleaning of toilets and canteen area and office area.
- Cover waste bins to avoid breeding of flies and other insects
- Make sure there will be no water ponding within premise to avoid breeding of mosquitos.
- For Covid-19 infectious disease; educate the employees for awareness of sensitization, self-hygiene and precaution practices such as safe social distancing, wearing masks and washing hands, etc.

# 6.4 Socio-Economic Management Plan

Company shall aside any percentage of profit as CSR fund.

- Proponent shall use its CSR fund for upgrading of health care and education of the local community.
- Local employment policy should be adopted for local labour recruitment.
- Minimize the impacts of local community by adherence to EMP.
- Increase the interaction between factory workforce and local people by arranging public meetings and fun meetings at appropriate time.
- Facilitate the access to get opportunities for local contractors for providing local business development

# 6.5 Emergency Response & Disaster Management Plan

Emergency response & disaster management plan is required to avoid panic and to tackle the situation effectively during emergency time if occurred. The plan covers emergency response activities that shall be carried out in the event of emergency time.

The emergency response plan (ERP) is included are describe the following;

- The emergency response team structure
- The roles and responsibilities of command staff and support staffs
- Resources such as personnel & equipment that can be utilized during emergency time.
- Checklist of ERP activities.

#### Manufacturing and Distribution of Various Types of Jellies

Table – 6.2 Emergency Response Team Structure and Responsibilities (Thai Faster Products	
and M.K Co., Ltd)	

Name	Position	Responsibility	
LI Know Win	Factory Manager	Commander of Chief	
U Kyaw Win		(Give general directions for managing the incident)	
U Than Htwe	Production Incident Commander		
	Leader	(Give general directions for managing the incident)	
Mr. Than Zaw		On Scene Commander	
Tun	Supervisor	(Assess the incident, report the incident, secure the	
1 UII		scene)	
U YeHtwe	Itwe Operation staff	Carry out the ERP as directed by on scene	
		commander	

## Fire Fighting Equipment List in the Factory

Fire Extinguishers (20 kg)	- 25
Auto Sprinkler Pump	- 2
Fire Hydrant	- 2
Fire Alarm	- 2
Emergency Exist	- 3
Fire Hose	- 2
Capacity water storage tank	- 1

#### Emergency contact list

a. Fire Station (Emergency)	-	191
b. Fire Station (Hlaing Tharyar)	-	01-645017
c. Police Station, (Emergency)	-	119
d. Police Station (Hlaing Tharyar)	-	01-707550

# Checklist of ERP activities

- 1. Declare an emergency.
- 2. Alert personnel using an internal communication system.
- 3. Activate the emergency response plan.
- 4. Evacuate the danger zone, seek shelter-in-place or implement a lockdown.
- 5. Close main shutoffs, if applicable.
- 6. Call for external aid from local emergency services.
- 7. Initiate rescue operations.
- 8. Keep personnel as calm as possible.
- 9. Prepare an incident report after the incident.

#### Emergency Preparedness Plan for Earthquake

- Emergency preparedness for earthquake must be taken into account as Bago is located in a highly seismically active region and has many experiences of disastrous earthquakes in the past.
- Emergency preparedness training for earthquakes should be provided to all employees to be aware of the safe steps for it.

## Manufacturing and Distribution of Various Types of Jellies

- The following preparedness plans should be done for emergency earthquake.
- All the shelves are fastened securely to the walls.
- Heavy and larger things are kept on the lower shelves.
- Brace the hanging lighting fixtures from the ceiling.
- All aerosol can such as pesticides and insecticide should be stored in closed cabinets to avoid fire risk.
- All the cabinets must have latches.
- Fix immediately the damage wire and these are potential to electric shock.
- First aid kits are readily available.
- Provide first aid training and CSR training to employees.
- Flash lights and batteries are readily available.

# Emergency Response Plan for Earthquake

- Turn of the gas and electricity. Ware shoes. Carry flashlight.
- Evacuate the employees as there are risks of falling objects and building collapsing.
- Identify the safe places indoor and outdoor.
- For indoor search the safe spots such as under sturdy desk or table. Stay away from glass windows, mirrors and heavy cabinets.
- For outdoor go away from the buildings, trees, telephone, electrical lines and overpasses.
- Follow the drop, cover and hold on procedures to be safe during earthquakes.
- Drop to the ground, cover under sturdy objects like table or furniture and hold on to it until the shaking is stopped.
- Stay as safe as possible during earthquake and make minimum movements until the shaking is finished.
- Use emergency whistle if trapped.



• Figure 6.1 Safe Procedure to follow during Earthquake Time
Manufacturing and Distribution of Various Types of Jellies

## Flood Control Plan

Bago River can have potential on flood and the following factors should aware to all of the workers from safety point of view during flood.

- Do not walk through flowing water.
- Use a pole to test the depth of standing water before you proceed.
- Do not drive through a flooded area. Two feet of water will carry away most automobile.
- Stay away from power lines and electrical wires.
- Turn off your all electricity if your building is flooded.
- Watch out for hiding animals.
- Look before you step. Mud can be very slippery to walk on.
- Be alert for gas leaks. Leave the area immediately if you smell gas fumes.

Manufacturing and Distribution of Various Types of Jellies





Figure 6.2 Emergency Route of Thai Faster Products and M.K Co., Ltd.

## 6.6 Generally Fire Prevention Plan

## 6.6.1 Fire risk

Fires have been a persistent problem in most industry. Significant capital expenditure may be required to install adequate fire prevention and protection measures. Uncontrolled fires at the factory may not only destroy the business but also cause significant damage to neighboring properties and habitats.

The following standards are required for all factories:

- At least one alternative exit with a stair connecting all the floors of the factory building.
- No exit can be locked or fastened during working hours.
- An effective and clearly audible means to warn of fires.
- Cleared passages providing access to each escape route.
- A fire drill at least once a year in each factory where more than fifty workers are employed.

## 6.6.2 Suggestions Regarding Fire Safety

It is important to remember that when there is a fire, the first thing one should do is to run away from it. And this is what everyone does in such a situation. Precautionary need to be adopted is given below:

- Building should be constructed with fire resisting materials;
- Adequate exits and proper escape routes should be designed;
- Protection against fire and smoke should be ensured;
- Electrical wiring must be properly designed, installed and maintained;
- Escape routes should be lighted at all times, kept clear, be indicated by signs;
- Regular fire drills should be held
- Doors should be protected and should open along the direction of escape;
- Doors should not open on the steps and sufficient space should be provided;
- Smoke/Fire alarm systems must be installed;
- adequate number of extinguishers should be provided;
- Prior relationship with local Fire services should be established.

## 6.6.3 Firefighting Equipment

The following requirements for firefighting equipment shall be taken into consideration:

- *Location* extinguishers and hoses are to be placed in readily accessible locations and in areas where the risk of fire is likely.
- *Access* clear access is to be maintained around fire extinguishers and hoses at all times.
- *Signage* signage is to be provided at each location, indicating the type of fire extinguisher and fire types that they are suited for.

- *Mounting* fire extinguishers are to be mounted on a purpose made hooks or brackets and suspended above the floor.
- *Inspection* fire extinguishers are to be inspected and serviced every 6 months.

#### 6.6.4 Firefighting Training and Protection Measures

There were making firefighting training at the factory by the Thai Faster Products and M.K Co., Ltd described see the following figure 6.4.

- In every section of the factory, there shall be provided and kept in readiness adequate equipment for firefighting and protection.
- Each item of firefighting equipment shall be inspected and tested at appropriate intervals by a competent person. The date of the last inspection shall be entered in a logbook kept for that purpose.
- All the personnel employed shall be instructed on the use of firefighting equipment.
- Instruction to personnel in case of fire shall be clearly and concisely expressed in writing and prominently displayed on the site.
- "NO SMOKING" signs shall be conspicuously displayed at strategic locations in the factory and was highlighted in the case of identification in dull bright.
- Whenever a fire or any accident occurs, notify the nearest fire station.

The factory owner needs to take responsibility for ensuring the safety of his /her employees by taking adequate steps to rectify these problems. All buildings, including extensions to the factory, must meet legal standards and electrical equipment should be properly maintained. At the same time they must ensure that managers, supervisors and workers are properly trained in fire and safety procedures; and that exit routes are sufficient for the number of workers employed in the factory. Factory gates should be kept unlocked at all times whenever workers are in the building.

#### 6.6.5 Operating a Fire Extinguisher

Fire extinguishers should be only used if safe and if trained to do so.



Even though extinguishers come in a number of shapes and sizes, they all operate in a similar manner. Here's an easy acronym for fire extinguisher use:

P A S S -- Pull, Aim, Squeeze, and Sweep

Uses of a fire extinguisher properly			
Remember the acronym PASS.			
POLL the pin.	$\mathbf{P}$ – Pull the pin at the top of the extinguisher that keeps the handle from being accidentally pressed.		
AIM at the base	A - Aim at the base-not the flames. This is important- in order to put out the fire, you must extinguish the fuel.		
SQUEEZE the trigger.	S – Stand approximately 8 feet away from the fire and squeeze the handle to discharge the extinguisher. If you release the handle, the discharge will stop.		
SWEEP from side to side	<ul> <li>S – Sweep the nozzle back and forth at the base of the fire and then move towards the fire once it starts to diminish.</li> <li>After the fire appears to be out, watch it carefully since it may re-ignite! Be sure to read the instructions on your fire extinguisher different fire extinguishers recommend operating them from different distances.</li> </ul>		

Using Fire Extinguishers

- 1. Ensure that you use the correct extinguisher
- 2. Always keep an emergency exit behind you. (Away from the fire)
- 3. Stay low to avoid the effects of smoke/heat.
- 4. Direct extinguisher stream at base of flames.
- 5. Move stream in a side to side, sweeping motion.
- 6. If the fire gets to the point where you can no longer able to control it, retreat and close the doors. (Do not lock)

Using Fire Hose Reels

- 1. Turn on the stop valve
- 2. Run out the length of hose
- 3. Turn on the water nozzle and direct stream at the base of the fire.
- 4. Ensure you leave a direct egress path between you and the exit door/egress route

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Fires have been classified into six categories involving different substances:

- Class A, combustible carbon-based solids e.g. paper, wood or textiles
- Class B, flammable liquids e.g. paraffin, petrol, diesel or oil (but not cooking oil)
- Class C, flammable gases, e.g. butane, propane or methane
- Class D, burning metals, e.g. aluminum, lithium or magnesium
- Fires caused by electrical equipment (indicated by an electric spark symbol and not the letter E)
- Class F, fats and cooking oils.

Types of extinguisher to use

- Class A fires water, water mist, foam, dry powder, wet chemical
- Class B water mist, foam, dry powder, CO<sub>2</sub>, some wet chemical
- Class C water mist, dry powder
- Class D specialist dry powder
- Electrical water mist, foam, CO<sub>2</sub>
- Class F water mist, wet chemical.

# 6.6.6 Fire prevention and control plan of Thai Faster Products And M.K. Co., Ltd

Various accidents can happen anytime. That sometimes we may never know. Which may be caused by or resulting from acts of nature? The ground of negligence, as in the case of fire, it can happen at any time. And, if not taken care of Pay attention to the importance of monitoring, especially for organizations that have been produced or referred to as "factory" which is often a source or Origins of the accident was due to a combination of several types of energy in the system of production. Also included is a large number of personnel associated with the various types of equipment and different these things are all important factors. Major accidents that may cause type called "fire" them.

So in order to secure the life and property of all that exists. Should the fire protection plan?

# Measures to prevent and suppress fire.

## Objective

- To prevent loss of life and property from fire.
- Place to ensure the safety of employees in case of fire.
- To reduce the risk of fire.
- To create a positive attitude towards the employees in the establishment. To life and property in the workplace is safe from fire. Therefore, measures to prevent and suppress fires, as follows.
  - 1. Providing protection and extinguishing systems. Both the fire Storage of flammable and explosive, Disposal of the flammable waste, Lightning protection, installation of fire alarm, fire escapes, including the preparation of the construction of a fire protection system.
  - 2. Arrange a plan to prevent and suppress fire. In the areas of surveillance, training, fire prevention campaign to fire the fire relief. Reform and revival fire up.
  - 3. Arrange a channel through the solution according to the specified bundle.
  - 4. for areas where the machine is installed. Or have the object or the wall or something. To provide a channel through to the exit this has a wide range of law.
  - 5. Arrange a solution, at least all the way to evacuate all employees. Out of the work area to the last exit in less than five minutes safely
  - 6. Final solution, which is the road to a safe area, such as road, etc.
  - 7. Doors used in fire escape routes are installed in the clear with no obstructions.
  - 8. Doors used in fire escape routes are among the most open the one side and both sides.
  - 9. Doors used as escape routes, fire doors that open to the outside with no lock or chain to tie off while working.
  - 10. Objects together to ignition. Reference is made to separate the mixture.
  - 11. Organize a fire escape route without the employees working in each unit to a secure location.
  - 12. Arrange hand-held fire extinguishers. Fire and water systems and accessories
  - 13. Provide backup water used for firefighting.
  - 14. Coupling fire water into the building and within a single building or equal to the fire department of the government.
  - 15. Transmission oil fire is long or not long enough to control the fire area.
  - 16. System for water. Water storage and water pump installed. Have been inspected and certified by a civil engineer and to prevent fire damage.
  - 17. Arrange a hand-held fire extinguishers to use a chemical type fire extinguishers, dry chemical, carbon dioxide, or hard or hot. Or chemical type fire extinguisher is ABC and better.

- 18. The maintenance and monitoring the chemicals used in firefighting by volume defined by the type of hand-held fire extinguisher.
- 19. Arrange for the inspection of fire extinguisher of not less than six months at a time.
- 20. Arrange a monitor installed in good condition always.
- 21. Held fire extinguishers installed in clearly visible. And be able to use it with ease without any obstructions.
- 22. The maintenance Equipment. And monitoring in the active state has at least once a month or the period of time that the equipment manufacturer.
- 23. Ensure staff is trained to fire primarily from government agencies assigned or accepted.
- 24. Ensure employees on fire all the time, especially at work.
- 25. Providing personal protective equipment used in firefighting. And fire drills, especially such as clothing, footwear, gloves, hats, masks, heat or fumes so as to allow employees to use fire extinguishers.
- 26. Prevent fire caused by radiation, conduction or convection of heat sources to combustible materials. There is prepared as insulation or block.
- 27. Prevent the fire from the friction. Friction of machinery, Tools create sparks or heat that can cause burns or breaks such as maintenance applications.
- 28. Has a separate store flammable material. Or explosives as well as objects that when combined will react or flammable material into a pile. Or explosives, that mingled. And store in a fireproof wall and self-closing fire doors and off-key every time when there is no work in it.
- 29. Objects susceptible to reacting to the burn it. Are the classified separately stored away from buildings and flammable materials in a safe distance?
- 30. Controls prevent leakage or evaporation of flammable material or explosives to cause ignition.
- 31. Has prepared a sign "no smoking" area to store flammable material.
- 32. Arrange for the disposal of waste by burning in a stove designed for burning, especially in the open air. Away from the employees work in a safe distance
- 33. Arrange a lightning rod for lightning protection.
- 34. Providing Fire alarm system type voice. Employees who worked in the building heard throughout.
- 35. Has tested the performance of the system, a fire alarm at least once a month.
- 36. Organize a group of employees to work on the prevention and extinguishing and fire prevention and the director, director of operations of the system at all times.
- 37. Organized, who is responsible for the prevention and extinguishing receive training on the prevention and extinguishing the firefighting equipment in first aid and emergency assistance.
- 38. Arrange a practice evacuation of the building by a fire escape route.
- 39. Held the fire drills and fire drills at least once a year.

## Duty Responsible for the establishment of fire protection

- Fire protection is a function of
  - 1. Executive
  - 2. Employees.
  - 3. Staff safety in the workplace.
  - 4. Security guard (Rpp)

## 1. Executive

- 1.1 Establishment of plant layout. New technology and to safety
- 1.2 determines the area of process control. Machinery may cause fire.
- 1.3 The performance standards for fire safety.
- 1.4 Control of fire to the fire, flame, sparks, static electricity, heat or any other cause to the fire, such as welding, cutting and heating pipes. And transposition, Freight transport flammable.
- 1.5 The Board shall appoint safety officers and security plans and operations, such as fire prevention and training, and improving the condition of the work, etc.
- 1.6 Monitoring activities related to fire protection.
- 1.7 Long-term planning for the installation of fire protection systems such as flammable or smoke, Alarm system, Automatic fire suppression system in a location with flammable or combustible material easily.
- 1.8 The regulation and control of contractors or other third parties who work on the several of the fire.

## Duty of employee about the fire protection

All employees must comply with the safety rules in the workplace.

- 1) Do not build a fire in a restricted area or premises without prior permission from the people who are responsible.
- 2) Do not smoke in the vicinity of the sign. "The danger of flammable or explosive material," or areas where smoking is only a venue.
- 3) Do not perform a repair tool. In areas where flammable or flammable arbitrary. Before repair work and safety officer will prepare a report based repair procedures and methods defined.

Control area containing flammable or flammable materials.

Conductivity use not to cause fire in any area of the factory. Be away from areas where flammable or easily flammable materials at least 10 meters in the radius could be done to prevent flammable or easily flammable materials safely.

## Entry to the workplace and how to avoid fire

1) To prevent leakage of flammable fuels and various Employees exposed containers with flammable fuels or defective may result in a leak.

2) Waste or scrap materials are flammable. Employees will be collected in a container that is not flammable and away from the work area to keep it in a safe place at least one time per shift.

3) Protection from vehicles. Employees using any vehicle unloading areas where flammable gas must be care to strike the pose shock or fire.

4) To prevent electrical hazards.

Lamp cord switches, electric motors, electric fans, machine tools available in areas where flammable or flammable materials. Must regularly check the condition of the damaged wiring and grounding plug or any other that may cause fire.

5) to prevent the explosion of the boiler.

- Before lighting, check the water level

- Safety valve (SAFETY VALVES) must be tested at least one time per month, and if a leak valve, safety valve should not be used to increase the safety or performance.

- If the boiler leak, stop use immediately and reported to have resolved soon.

-Check the pressure gauge and pressure not exceeded.

-If the water level is too dry to quickly extinguish the fire of a glass tube. Do not pump water into the boiler immediately decisively. Need to let it cool down.

- Prohibit the transportation of flammable or avoid routes that are already sparking the flame tube hot metal flakes.

-Handling flammable materials to be careful not to drop on the workspace. -Use the safest way to move.

-Vessels used to contain do not need to open the lid. To be closed entirely.

-Set to be the sort that could cause dropped or fallen out.

Duties of officer safety in the workplace

- Monitoring locations vulnerable to fire regularly

-The details of the plan to prevent and suppress fires, as well as provide training and practice time.

-Provide maintenance and monitoring of fire extinguishers and firefighting equipment. In ready to use condition.

Duty security guard

- 4.1 rounds to third parties or the goods into the factory or at risk of fire.
- 4.2 out mounting casualty care and storage of explosives, flammable and flammable gas or areas at risk of fire.
- 4.3When exposed to what may have caused the fire immediately reported to stakeholders

Management and implementation of occupational safety, Environment and to work on the prevention and extinguishing

- The employer shall provide a plan for the prevention and extinguishing of surveillance. Campaign training, fire protection, fire suppression, fire relief. Rehabilitation and reform.
- Thus, for safety and to comply with the law firm has prepared the plan.
- There are 3 conditions which include 7discs.

Training Plan; May hire an outside agency to provide training require the employee or officer performance in the field of firefighting and fire escape.

The training plan;

- 1. Designated individuals responsible for training
- 2. Determine the course subject. Or subject to such training
  - Fire prevention and control plan
  - The fire initially
  - The fire advanced or advanced
  - Use of different types of fire extinguishers
  - First aid and rescue
- 3. Selecting training methods such as
  - Lecture
  - discussion
- 4. Defined terms used in the training
- 5. Determine who will receive training appropriate to the subject or topic of training
- 6. Evaluation of training every time

Fire prevention campaign plan

The map is designed to create attention and promote the subject of fire protection to occur. The campaign plan for fire protection;

- Designated person responsible for campaign management.
- Determine subject or topic will include campaign.
  - ➤ The element of fire.
  - storage of flammable materials
  - ➢ To reduce smoking
  - ➤ the effects of fire
  - ➢ cleaning

Monitoring plan

By the inspection on the waste material as fuel flammable. Heat source;

- Designated person responsible for patrolling the area and clearly. By the person who will act as well.
- Determine the specific needs of each area, the report prepared by the test results easy.

- The time the inspection and report.
- Persons monitoring report, the executive summary of the flaws in each revision as plant manager. Managers etc director reports to plan every month.
- Should be monitored every shift.

While fire, the plan will include the fire and losses include Plan 3 plan is different

The identified the individual responsible for fire suppression function of enterprises responsible for fire protection.

The plan includes the following key

1. Standing Committee composed of representatives of the Planning Department in various establishments.

2. Plans to assign individual responsibility and the responsibility clearly.

3. Tasks to be performed in the same period to separate the practice is not the same person.

4. Establishment work in a team must determine who is responsible for all shifts continuously.

5. Questions need to be clear while the fire is not ambiguous because it is a time to fast and accurate in practice, many people may be in shock. Which will result in unexpected behavior has been practicing frequently makes practitioners more confident and performs properly when the event occurred.



Figure 6.3 Sequential procedures when employees discovered the fire Basic fire suppression plans

## Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Section : Area : Set :			
		Leader operations series.	
	[		
	Machine Operator		Fireman.
	1		1
	2		2

Chart of the person and work to suppress the fire

Previous worker in various positions under the plan hold primary fire

Position	Responsibilities.		
Leader	1.Onto the scene and informed public. Safety Board (Hp.) and		
operations series	chief operating officer.		
	2. Ordered the firefighters tackle fire source as soon as possible.		
	3. Instructed the staff to run the equipment, or shut off the power		
	and then to help the fire department and / or those who do not		
	leave the area.		
	4. Inform the team leader for help from others if needed.		
Machine	1. Controlled machines next. And shutdown and power off on		
Operator	orders of the fire chief.		
	2. Rescue firefighter when, commanded by a chief minister.		
	3. Together those who are not on the outside area.		
Fireman	.1The fire as soon as possible.		
	Two., If not, immediately press the fire source extraction Fire. Or		
	get help immediately.		
	.3The head immediately.		

Manufacturing and Distribution of Various Types of Jellies

## Thai Faster Products & M.K Co., Ltd.

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Figure 6.4 Structure on fire prevention and extinguishing severe

Manufacturing and Distribution of Various Types of Jellies



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Figure 6.5 Location of Firefighting Equipment (Thai Faster Product and M.K Co., Ltd)

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Previous worker plans on extinguishing files, severe			
officer	Responsible.		
Director of Fire.	1.Director and mandates the use of fire control plan.		
	2. Bid and urged cooperation to the relevant person or staff to		
	assist in controlling the fire. Ororder the evacuation plan.		
	3. Dictates that all parties cease fire fighting operations or reduce		
	the severity of the fire.		
	4. Ordered the fire department to get help from outside the plant.		
	5. Director and other executable. As necessary and appropriate.		
	6. Cases the fire to the President without delay.		
Operations.	- The machine control.		
	Fire in any area. The engine control unit to control the machine		
	to run until it was ordered to stop the machine from chief		
	operating officer. If you can not walk or be ordered to stop the		
	machine. A machine to help control the fire or other action as		
	ordered. A person who is not related to other areas.		
	- Set the fire.		
	On fire in the area of responsibility. Whether large or small. The		
	separation of control equipment for firefighters immediately after		
	a fire. Without stopping the machine and operating under the		
	command of the chief of operations in the area of operations.		
	- Chief ordered to get help from others if needed.		
	- As soon as the fire in your own space. To telephone the news		
	to staff safety in the workplace, or the Director of Fire and Public		
	Relations telephone number.		
Department operation	- Facilitate fire department access to the water reserve.		
- Water reserve support	- In normal times, check the engine. Equipment used by		
units	checklists.		

Previous worker plans on extinguishing fires, severe

officer	Responsible		
Department operation	-To request help from the fire department.		
- Contact the fire outside	-Coordination of a firefighters to get the fire outside. Incoming		
	Fire assistance. To report to the Director of Fire. To help promote		
	the work is divided into sets.		
	-For the fire in the machinery. Set fire to set fire should come		
	from that place. Who should help in transporting equipment to		
	help firefighters.		
	-To keep the areas fire are ordered by the Director of Fire.		
	-In normal times should be checked and updated telephone		
	number to keep up		
Electricity Department	- To meet the director of the fire quickly. In order to power cuts.		
The evacuation.	- Check the fire assembly point and fire the director and staff to		
	evacuate together.		

Green Myanmar Environmental Services Co., Ltd.

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

	- Move to the staff meeting (rally point) evacuation plans.	
	- Check the results of the employee to notify the public and / or	
	the Director of Fire.	
Communications and	- As soon as the fire that occurred in any area. To public	
coordination.	inspection by the fire chief of the fire area, and pronounce on	
-PR agency.	what the audio line.	
	-Stay tuned to the news release from the fire.	
	* Head of the Laboratory.	
	* Safety in the workplace.	
	-After the fire burn, the notification sound lines.	
	- Set up the triage nurses to provide the necessary equipment and	
- Support units.	supplies to the specified point. And be prepared to provide first	
	aid.	
	- Coordinating the team preparing the vehicle to bring people to	
	the hospital.	
	- To coordinate search and rescue team ready for orders from the	
	Director of Fire. If you need to search and rescue.	

officer	Responsible.		
Communications and	- Traffic control within the company and to facilitate fire		
coordination.	department access. The Director of Fire orders to seek help from		
- Guard unit.	an outside agency.		
Defenders.	- Prevent third parties not involved into the area without prior		
	permission.		
	- Control the movable property to be stored.		
Moving the internal –	- Determine the safe storage of materials, equipment and assets of		
external	the company.		
	- Provide transportation vehicles and equipment.		
	- Facilitate the transportation of materials.		

## 6.7 Environmental Management Team

In preparation of an EMP, it is also necessary to have a permanent organization set up to ensure its effective implementation. Hence, Thai Faster Products & M.K Co., Ltd will organize a team consisting of officers from various departments to coordinate the activities concerned with management and implementation of the environmental control measures. The Environmental Management Team to implement EMP, to carry out Monitoring Plan and to tackle other safety, health and environmental issues of the factory is as follow.

No.	Roles	Responsibilities		
1	Managing Director	• Responsible for all environmental issues.		
		• To support for setting up an Environmental Management Team.		
		• To support the implementation of the environmental management plan and monitoring plan.		

Table 6.3 Environmental Management Team

		<ul> <li>To review the EMP annual report and to give feedback regarding with the performances of EMP and EMT.</li> <li>Responsible for providing of safety awareness training, firefighting training and emergency response training to the employees.</li> </ul>
2	HSE Manager (Factory Manager)	<ul> <li>To implement the environmental management plan.</li> <li>To set up firefighting team and emergency response team.</li> <li>To assure regulatory compliance with all relevant rules and regulations.</li> <li>To minimize environmental impacts of operations by strict adherence to the EMP.</li> <li>To review the scheduled monitoring test results and check whether the results are within the allowable limits. If there is any concern, plan and do corrective action.</li> <li>To support to conduct the necessary trainings for health, safety and environment.</li> </ul>
3	Executive HSE Manager (Production Manager)	<ul> <li>To plan the monitoring schedule for environmental parameters.</li> <li>To plan the maintenance schedule.</li> <li>To report the results and recommendations to top management.</li> <li>To coordinate with regulatory agencies.</li> <li>To plan and direct the team member to handle the local complaints about environmental and social issues.</li> <li>To appoint the in-charge person for monitoring plan of environmental parameters.</li> <li>To appoint the in-charge person for maintenance plan of generator and other machineries.</li> <li>To plan for safety and health awareness training, firefighting training and emergency response training.</li> </ul>
4	Health and Safety Coordinator (Maintenance Supervisor)	<ul> <li>To assist the management in implementing of OHS plan, Community Health and Safety Management Plan, Hazardous Chemical Management Plan and local policies on health and safety issues.</li> <li>To communicate or liaise with the local authorities on health and safety issues.</li> <li>To carry out the maintenance of the machineries, safety equipment and firefighting equipment as scheduled and report it to Executive HSE manager.</li> <li>To response the accident, incident and injuries.</li> <li>To participate in any health-care activities for both employees and communities.</li> <li>To maintain all records related to health and safety issues.</li> <li>To organize and assist in conducting the trainings for health and safety.</li> </ul>
5	Environmental Officer (Production Supervisor)	<ul> <li>To assist the management in implementing of EMP and local policies on environmental issues.</li> <li>To communicate or liaise with the local authorities on</li> </ul>

Thai Faster Products & M.K Co., Ltd.

		environmental issues.
		<ul> <li>To communicate and corporate with the environmental consultant service team for scheduled monitoring plan.</li> <li>To give suggestions for improving EMP.</li> <li>To participate in any environmental activities.</li> <li>To report the local complaints to the managing.</li> </ul>
		• To maintain environmental related records.
		• To organize and assist in conducting of environmental awareness trainings.
6	EMT members	<ul> <li>To carry out day-to-day management of environmental and safety issues at the Project site.</li> <li>To log any complaints from local people about environmental and social issues and to report to EMT coordinators and take actions as recommended by the EMT coordinators.</li> <li>To make regular checkup of the factory as part of the safe working procedures.</li> <li>To carry out scheduled fire drill and emergency response drill.</li> <li>To coordinate and assist to carry out in performing of environmental programs, drills and trainings.</li> <li>To do the jobs assigned by the EMT coordinators (according to the procedures and guidelines stated in the EMP).</li> </ul>



Figure 6.6 Environmental Management Team (Organzation)

# 6.8 Environmental Monitoring Plan

Monitoring is an essential and an integral part of the implementation of the proposed environmental mitigation measures. Environmental monitoring generates useful information and improves the quality of implementation of mitigation measures.

Monitoring involves the observation, review and assessment of onsite activities to ensure adherence to regulatory standards and the recommendations made to reduce negative impacts. The plan must be comprehensive and address relevant issues, with a reporting component that will be made available to the regulatory agencies based on a mutually agreed

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

frequency. It is recommended that a minimum monthly monitoring report be submitted to the authorities.

Table 6.4 Environmental M	Monitoring Plan
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Environmental Issue	Item	Location	Frequency	Respon- sibility
	PM <sub>10</sub> , PM <sub>2.5</sub> , O <sub>2</sub> , CO, CO <sub>2</sub> , NH <sub>3</sub> , NO <sub>2</sub> , SO <sub>2</sub> , O <sub>3</sub> , VOC	Ambient air within the factory premises	Annual	
	PM <sub>10</sub> , PM <sub>2.5</sub> , VOC, O <sub>2</sub> , CO, CO <sub>2</sub> , NO <sub>2</sub> , SO <sub>2</sub>	Boiler and diesel generator	Bi-annual	Designated
Air Quality	$PM_{10}$ , $PM_{2.5}$ , $SO_x$ , $NO_x$	Workplace (Mixing room)	Bi-annual	EMT member
	Establish a routine maintenance, inspect - ion program for burners	Boiler	Daily	
Non-hazardous Solid Waste	Set quantified waste reduction and disposal targets (in volume, weight or costs)	Workplace, Factory Premise	As necessary	EMT, Operation supervisor
Sond Waste	Separate bins for different kinds of waste	Workplace, Factory Premise	Daily	Operation supervisor, Workers
	Provide training to			[
Hazardous Solid Waste	employees on how to dispose of hazardous material	Workplace, Factory Premise	For each new staff	Manager
	Ensure MSDS for hazardous products are up-to-date and accessible at any time.	Workplace, Factory Premise	Monthly	Designated EMT member
		1		1
Weter Oreliter	Aluminum, Chloride, copper, cyanide, Manganese, pH, Sulfate,	Tube well		Designated
Water Quality	Total Alkalinity, TDS, Hardness, Total Iron, Turbidity	Drinking water	3 time/ yr	EMT member
Waste water	BOD <sub>5</sub> , COD, Oil & Grease, pH, Total	Processing wastewater	3 time/ yr	Operation supervisor,
Quality	Nitrogen, Total Phosphorous, TSS,	WWTP influent	3 time/ yr	Designated EMT
	Coliform, temperature	WWTP effluent	3 time/ yr	member

Green Myanmar Environmental Services Co., Ltd.

# Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Environmental Issue	Item	Location	Frequency	Respon- sibility
Noise Quality				
Ambient Noise	Noise level in decibel	Factory Premise	1 time/ yr	Designated EMT
Workplace	Noise level in decibel	Maintain all equipment so it's running efficiently.	Weekly/ necessary	Factory manager
Noise		Employees working in areas with high noise levels	Daily	Factory manager
Warkelaaa		Mixing room	Bi-annual	Designated
Workplace Noise	Noise level in decibel	generator and Boiler	Bi-annual	Designated EMT
	<ul> <li>Firefighting equipment (extinguisher, fire hydrants, firehose</li> </ul>	Factory Premise, Workplace, Generator Room, Fuel Storage Area	Daily	Fire brigade
_	<ul> <li>Fire-drill testing</li> </ul>	Factory Premise	Monthly	Fire brigade
Emergency Response	<ul> <li>Servicing firefighting equipment</li> </ul>	All equipment	Quarterly	Fire brigade
Equipment	<ul> <li>Reviewing records of accidents which is recorded on &amp; around the entire facility</li> </ul>	-	Quarterly	Fire brigade
	<ul> <li>OHS training</li> </ul>	Factory Premise	Biannual	OHS manager
	<ul> <li>the sanitary facilities that should be kept clean and well lit.</li> </ul>	Factory Premise	Weekly	General manager, nurses and OHS team
	<ul> <li>Ensure proper solid waste disposal and facilities.</li> </ul>	Factory Premise	Daily	OHS team
Occupational Health and Safety	<ul> <li>Provide First Aid kits on the site. Ensure nurse(s) is stand-by in clinic. Educate workers on environmental management.</li> </ul>	Factory Premise	Daily	General manager and OHS team
	<ul> <li>Provision of all necessary PPEs.</li> </ul>	Factory Premise	As necessary	General manager and

Green Myanmar Environmental Services Co., Ltd.

## Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Environmental Issue	Item	Location	Frequency	Respon- sibility
	<ul> <li>Workers should be trained on OSH and first-aid administration.</li> </ul>	Factory Premise	As necessary	OHS team
Energy	<ul> <li>Record diesels consumption</li> </ul>	Generator, and Compressors	Monthly	General manager and
Consumption	<ul> <li>Record Electricity usage</li> </ul>	Electric Meter	Monthly	OHS team
Resources	<ul> <li>The unused equipment must be switched-off</li> </ul>	Power Distribution Panel	Daily	In-charge in each section
Usage	<ul> <li>All water taps shut when not in used</li> </ul>	All Water Taps	Daily	For all employees

## 6.8.1 Monitoring and Reporting

Monitoring of the final effluent should be carried out at least once per month—more frequently, if the flows vary substantially.

Monitoring data should be analyzed and reviewed at regular intervals and compared with the operating standards so that any necessary corrective actions can be taken. The results should be reported to the responsible authorities and Environmental Conservation Department, as required.

The key production and control practices that will lead to compliance with emissions guidelines is implementing water conservation and recycling measures.

## 6.9 Green Belt Development

The company has a total land of 2.036 Acres. Thus the unit can provide a sufficient land area for green belt development. The trees will be grown within the plant boundary and at the periphery of the company premises. Thus, the proposed project will have significant positive impact on the floristic component.



Manufacturing and Distribution of Various Types of Jellies





Figure 6.7 Green Plan and Landscape layout

## 6.10 Budgetary Provisions for EMP

Adequate budgetary provisions have been made by proponent. The management for execution of environmental management plans should be framed. The detailed capital and recurring (per annum) budget should be earmarked for pollution control/monitoring equipment, operation and maintenance of pollution control facilities.

The project is going in operation phase when this EMP report was prepared. Thus, estimated EMP budget was more emphasized for operation phase. The Project will carry out impact monitoring during operation phase. The following table shows the estimated expenditures for the implementation of Environmental Management Plan for operation phase twice a year. It can change according to the situation. The project proponent will carry out impact monitoring during operation. The following table shows the costs estimated for Environmental Monitoring for the Thai Faster Products and M.K Company Limited.

Sr. No	Monitoring	Locations	(a) no. of location	(b) frequency	(c) Rate (Kyats)	(a x b x c) Total Amount (Kyats)
Ope	Operation Phase					
1.	Air Quality monitoring	Stack emission of boiler and Generator	2	2 times /year	300,000	1,200,000
		Workplace Air Quality	1	2 times /year	200,000	400,000
		Ambient Air Quality	1	1 time /year	1,000,000	1,000,000

Table 6.5	Estimated	Costs for	Environmental	Monitoring

## Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Sr. No.	Monitoring	Locations	(a) no. of location	(b) frequency	(c) Rate (Kyats)	(a x b x c) Total Amount (Kyats)
			•		Sub-total	2,600,000
2.	Water	Tube-well water	1		150,000	450,000
	Quality	Boiler Section Drainage	1	3 times /	150,000	450,000
		Process wastewater	1	year	150,000	450,000
		WWTP (influent)	1		150,000	450,000
		WWTP (effluent)	1		150,000	450,000
					Sub-total	2,250,000
3.	Noise Level	Work Place	3	2 times / year	50,000	300,000
		Ambient Noise	1	1 time / year	50,000	50,000
	Sub-total				350,000	
4.	Miscellaneous					
		Wastewater Manage			Lump sum	500,000
		Air Pollution Con			Lump sum	500,000
		Solid Waste Manage	ement		Lump sum	700,000
	Green Plan Lump sum				<u> </u>	200,000
	Sign board on safety Lump sum				÷	1,000,000
	Emergency safety measures Lump sum				-	100,000
	Fire safety measures         Lump sum				-	500,000
	Personal Protective Equipment Lump sum					500,000
Training Lump sum					500,000	
	Sub Total 4,500,0					4,500,000
	Total = Sub-total+ Sub-total+ Sub-total + Sub -total 97,00,000					

## 6.11 Record Keeping and Reporting

Record keeping and reporting is one of the requirements of any production system and essentially of a good management tool. Properly maintained records of construction, installation, training, equipment maintenance, operation, fault detection and remedy can help in reducing risks of accidents, legal costs and thereby overall cost of operation of a plant.

Records also help in identifying causes of any accident and elimination of the same accident in future. Records may be maintained for the proposed plant as follows.

## 6.11.1 Water Use

To estimate water usage in various production processes, the wastewaters from unit operations should be monitored for each product stream at a minimum, annually. Records of monitoring results should be kept in an acceptable format.

#### 6.11.2 Noise

Audiometric test records of employees should be kept during the employee's period of employment and longer as necessary, as they may provide a useful reference for workers' compensation. The records should be kept in a safe, secure place and held as confidential documents.

#### 6.11.3 Hazardous Substances

Assessment reports which indicate a need for monitoring and/or health surveillance together with the results of monitoring and/or health surveillance shall be kept as records in a suitable form for at least 30 years from the date of the last entry made. Retention for a period of at least 30 years is necessary because some health effects, such as cancers, may take a long time to become evident.

The information kept will be valuable in epidemiological studies and for developing effective control strategies.

All other records, including assessment reports not indicating a need for monitoring and/or health surveillance and records of induction and training, shall be maintained for at least five years in a suitable form.

#### 6.12 Accident Reporting

#### 6.12.1 Purpose of Accident reporting

An accident reporting and investigation plan prescribes methods and practices for reporting and investigating accidents that can be read and understood by all managers, supervisors, and employees. No matter how conscientious the safety efforts are, accidents are going to happen sometimes due to human or system error.

#### 6.12.2 Accident Reporting Procedures

Employees injured on the job are to report the injury to their supervisor as soon as possible after the incident/accident. Near miss accidents or incidents (when an employee nearly has an accident but is able to avoid it) should be reported as well. All accidents and incidents should be reported for prevention purposes.

The supervisor must immediately notify Human Resources Department and the Public Safety Department when an incident/accident occurs.

If they are not available a report should be forwarded for their review and the supervisor shall conduct an investigation and interview. All accident reports and police reports involving accidents with or without injury's are reviewed by the Safety office.

Any employee witnessing an accident at work is to call for emergency help or whatever assistance appears to be necessary. In addition, the employee is immediately to report the accident to his or her supervisor and take part in answering questions related to the Accident Report and Accident Investigation.

#### 6.12.3 Accident Investigation Procedures

Thorough investigation of all accidents will lead to identification of accident causes and help:

Manufacturing and Distribution of Various Types of Jellies

- reduce economic losses from injuries and lost productive time;
- determine why accidents occur, where they happen, and any trends that might be developing;
- employees develop an awareness of workplace problems and hazards;
- identify areas for process improvement to increase safety and productivity; and
- suggest a focus for safety program development.

For all accident investigations, the Safety Department will perform the following duties:

- Conduct the accident investigation at the scene of the injury as soon after the injury as safely possible.
- Ask the employee involved in the accident and any witnesses, in separate interviews, to tell in their own words exactly what happened.
- Repeat the employee's version of the event back to him/her and allow the employee to make any corrections or additions.
- After the employee has given his/her description of the event, ask appropriate questions that focus on causes.
- When finished, remind the employee the investigation was to determine the cause and possible corrective action that can eliminate the cause (s) of the accident.
- Complete an accident investigation report with the employee and review data with employee for accuracy. This will provide information to put into database format.

The accident investigation report is used to:

- track and report injuries on a monthly basis;
- group injuries by type, cause, body part affected, time of day, and process involved;
- determine if any trends in injury occurrence exist and graph those trends if possible;
- identify any equipment, materials, or environmental factors that seem to be commonly involved in injury incidents;
- discuss the possible solutions to the problems identified with the safety team and superiors; and
- Proceed with improvements to reduce the likelihood of future injuries.

# 7.0 CAPACITY DEVELOPMENT AND TRAINING

Capacity building of senior factory officers will enhance the awareness of the manufacturing case of cleaner production and possibly also of the need for ensuring compliance with local legislation. In various developing countries, companies tend to be hesitant to train their employees out of fear that they will shift to a new employer on the basis of these increased skills. This hesitation to training makes it difficult to provide professionals with new insights that help the industry move ahead. Capacity building and knowledge exchange within the sector is also likely to reduce the resistance to change. If successful implementation is seen in the local industry, others are more likely to follow.

## 7.1 Corporate Social Responsibility Plan

We, Thai Faster Products and M.K Co., Ltd will contribute 1 % net profit for social activities that will help society and country of Myanmar. Our social welfare activities shall include training of our employees such as on job training to be more qualified and providing necessary healthcare such as medical checkups and giving proper medical knowledge about deceases and its prevention. Part of our CSR activity such as donations will also contribute to public school around our factory.

Thank Faster Products and M.K Co., Ltd will undertake that 1 % of net profit earned from our business will be contributed towards CSR in the Republic of the Union of Myanmar.

The CSR fund will be used for;

- 50 % for environmental conservation activities
- 10 % for social activities of the nearby wards
- 15 % for education development
- 10 % for donation to welfare states and
- 15 % for in donation to orphanage and religious places

## 7.2 Employees' Welfare

The following facilities and services ware the company practices and based on the labor law of the Country. Thai Faster Products and M.K Company Limited will set up a plan of proper welfare commensurate with that of prestigious company for its employees as follows:

7.2.1 Staff Transportation

The project proponent arranges the transportation for all employees. There have two routes arranged for the ferry transport way.

- The route (1) Factory to No.(1) Bus Stop, Hlaing Tharyar Township
- The route (2) Factory to Alae village, Hlaing Tharyar Township.

Manufacturing and Distribution of Various Types of Jellies

#### 7.2.2 Accommodation

The project proponent arranges dormitory with full facilities for foreign technicians (4) at the project site.

#### 7.2.3 Other Benefits

<u>Uniform</u>

All employees are supplied with uniform free of charge twice a year.

#### Health Care

The Company provides medical check-ups (free of charge) and Covid-19 Vaccination for all employees, if any emergency cases arise due to the work related activities. In addition, purified water is provided for staff drinking water. Appropriate sanitation facilities are installed and regular disinfection work carried out. The project proponent provides to the following health programs.

- a) Medicine and first aid kits are available at the factory to address emergency cases.
- b) There have first aid kits and a resting room for staff who feel sick
- c) If the employees are sick will be sent to social welfare hospital for care
- d) The project proponent trains employee on basic health care every three months. It aims to teach staff how to provide first aids for injured person during emergency cases.
- e) The project proponent supply proponent supply medicine and/ or provide for the cost of medicine longtime employees as required.

#### <u>Bonus</u>

Based on the performance of the company, annual bonus will be declared and paid out to each employee before the Myanmar New Year (Water Festival). The amount of bonus will be in accordance with the amount of profit earned by the company.

All the above-mentioned employee benefits are the usual company practices and based on the labor law of the country, other benefits such as leave (sick leave, annual leave etc.) would be drawn up and included in the Employees' welfare plan accordingly.

#### 7.3 Employee Education

In addition to the maintenance and management of a safe and reliable operating system, there is a need to continuously strive to improve technical skills and deepen the skill base. To this end, the operational staff needs to refine their trained operating and technical maintenance skills. Regularly scheduled on-the-job training is vital to maintaining and improving technical skills.

- Ensure employees are trained whenever new equipment is installed or new procedures are implemented.
- They should be familiar with the hazards associated with the material they are using and be aware of potential sources of contamination.

Manufacturing and Distribution of Various Types of Jellies

- To make sure employees are aware of the spill response plan, provide regular employee training on spill cleanup procedures and washing practices and properly trained to carry it out.
- Maintain awareness of best available technology, as many companies now consider environmental issues when designing and manufacturing their products.
- Keep training records of all employee

## 7.4 Employee Involvement

Environmental conservation will usually require some engineering, scheduling, or operational changes; but unless employees are motivated with an enthusiastic effort, the goals may not be reached. Employee suggestions should be solicited. Their voice in planning and goal setting and their sincerity in executing a conservation program may well determine the success or failure of the project. Some firms have effectively utilized a committee of employees to develop and conduct a conservation program.

Prominently displaying a sizeable chart showing the amount of the various utilities used each month per unit of production helps maintain the interest and cooperation of everyone.

## 7.5 Training on Safety Production

1. Factory Manager shall train new employees about safety production and skills.

- First, let workers understand the fire alarm, firefighting equipment, emergency lights, emergency exits, evacuation maps, safe escape, fire and evacuation drills, personal protective equipment, electrical equipment, drinking water equipment, etc.;
- Second, let new employees understand the factory environment system, including factory sanitation, the control of electrical equipment, the handling of chemicals, the light source to meet production needs;
- Third, let workers know Environment Protection System, particularly:
  - a. When not on use, turn off power and water faucets. Violation operator must be treated according to the internal evaluation standard. If there are any updates, directors shall train employees about the updates.
  - b. Equipment controller shall be trained about the maintenance of the machine, periodic inspection and the cleaning of machine place.
- 2. Emergencies training shall be responsible by plant manager

For example, worker injuries occur in production, it is necessary for workers to learn how to use medicine in medicine cabinet or call emergency personnel. Director shall check the medicine cabinet periodically. Directors shall be called to send the wounded to hospital if serious.

If the unexpected disasters occur, such as earthquake, floods, fires etc., employees shall be trained about how to escape.

Fire safety evacuation shall be held by directors twice per year, meetings about safety production shall be initiated by deputy factory director. Middle managements and workshop directors shall be invited.

Thai Faster Products & M.K Co., Ltd.

- 3. Let employees know:
  - a. There are 11 days federal holidays per year.
  - b. Wages in sick leave will be paid in accordance with the minimum wage if hospital record is available.
  - c. marriage leave,
  - d. bereavement leave,
  - e. maternity leave,
  - f. annual leave and
  - g. Leave program.

Let employees understand:

- a. The recruitment process.
- b. The prohibition of child labor,
- c. youth workers policy,
- d. no forced labor,
- e. no discrimination,
- f. the payroll system,
- g. payroll calculation and
- h. Process of forgetting punching in / out.
- i. Wages can be increased if employees work more efficiently and let employees agree to pay social security and knowing the benefits.

## 7.6 Grievance Redress Mechanism (GRM)

The proponent has team for Grievance solution within the Factory. The suggestion box is also providing in the factory. The Worker Compliance Committee (WCC) team is described the following table 7.1.

No.	Name	Designation
1	Mr. Than Htwe	Production Leader
2	Naw Win Sandar	HR
3	Thin Su Hlaing	Supervisor
4	Thiri Aye	Production staff
5	Than Zaw Htwe	Production staff



Figure 7.1 Suggestion Box and WCC meeting record photo

# 8.0 PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

Thai Faster Products and M.K. Co., Ltd. will implement Manufacturing and Distribution of various types of Jellies Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Republic of the Union of Myanmar, on the area of (2.036) acres. Green Myanmar Environmental Services Co., Ltd has been responsible for the assessment of environmental and social impact for the project. As part of this procedure, public participation involved not only meetings with nearest local residents but also discussion with factory employees.

## 8.1 PURPOSE

Public consultations on environmental management programs are designed to provide a real understanding of industry issues and the aim is to make the public aware of the environmental impact of industrial operations and the increase in job opportunities caused by industry. By participating in the consultation process with anyone affected by the proposed project, the business community will be able to resolve any issues that may arise in advance.

# 8.2 METHODOLOGY AND APPROACH

Green Myanmar Environmental Services Co., Ltd. has taken the following two steps in gathering public opinion and information about the factory.

(a) Meeting with factory staff and obtaining workplace advice

(b) Meeting with the relevant government organizations and the vicinity of the factory

# **8.3 MEETING WITH THE FACTORY'S EMPLOYEES**

The manufacturing of various of Jellies of the Thai Faster Products and M.K Company Limited for reporting of the Environmental Management Plan (EMP), there were met with the factory staff about of the Drinking water system, cleaning system, sanitation system, Noise, Particles, Smell Smoke, Adequate lighting and Ventilation system, in the workplace and about the social situation in the workplace. A total number of (21) suggestions letters were collected from employees. We also received (21) signed employees at attendance lists that were shown in Appendix (19). Their comments and suggestions were attached as Appendix (20).

Method	- Meeting
Date	- 29.3.2018
Participants	- 21 Factory's staff
Venue	- Meeting room

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 8.1 Photos Record of Employees Discussion Program

Table (8.1) Excerpts from suggestion of the factory staff

No	Suggestions/ Comments			
• St	aggestion on occupational health and safety			
• Al	pout the personal protective equipment, all persons mentioned that they were provided.			
• At	bout the drinking water, all persons mentioned that they were provided with good drinking water.			
• Al	• About the sanitation system, all persons recommended it is good and enough.			
	• About the cleaning system, all staff members who attended the meeting stated that it was convenient to have soap / hand sanitizer for washing.			
• At	pout the light intensity of workplace, all persons recommend.			
• About the ventilation system in workplace, all persons recommend.				

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

Suggestion on	working	conditions i	n the	workplace
Duggeotion on	"OI KING	conditions i	in the	moniplace

• About the noise in workplace, all persons mentioned there was no noise at the workplace.

• About the odor, all persons mentioned there have no odor at the workplace.

• About the particles/dust in workplace, all persons mentioned the was no particle at the workplace. Suggestion on the social relation in workplace

• About the social relation in workplace, all persons mentioned it was convenient with upper level.

# 8.4 Meeting with the relevant government organizations and the vicinity of the factory

There are two ways of discussion, one way is participants can involve themselves in public consultation meeting and another way is by writing suggestions on distributed suggestion form.

Meeting attendees were encouraged to ask questions and give comments during and after the presentation. Comment forms were available at each meeting for attendees to write comments at the time of the meeting.

On August 5<sup>th</sup> 2018 at KaSin Village Tract Administrative Office, Hlaing Thar Yar Township, the public meeting for disseminating project information to general public including stakeholder and requesting their comments and (20) suggestions letter well collect from the (30) participants from local community attended the public meeting and participated in open discussion. Attendee lists were shown to Appendix (17). Their comments and suggestions were attached as Appendix (18).

Method	- Meeting
Date	- 5.8.2018
Participants	- local community, administrative organization, responsible person of project and Third party organization
Venue	- KaSin Village Tract Administrative Office, Hlaing Thar Yar Township.

The main points of discussion, questions and answers were mentioned in the following table.

No	Participants	Suggestions and Discussions
1	U Myo Thint	
2	U Than Zaw Oo	• Ensure to keep for Air, Water and Soil of the environment
3	Ma Aye Aye Htet	
4	Daw Thuzar Nyunt	• benefits and disadvantages of the impact to the
		Environment
		• supporting for allowance of the employees
5	Daw Khin Ohn	• Ensure to keep the environment not to effect due to the
	Myint	manufacturing of various types of Jellies
6	U Tate Sein	• Follow to National guideline, not to effect health and

Table 8.2 Comments of Public Consultation Meeting

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.

7U Sein Thaung8U Soe Myint9U Mya Thwin10Myo Thu11Ma Myint Myint Aye12U Kyi Soe13Daw Aye Thandar14Daw Wai Wai Khin15Daw Zar Zar Htet16Daw Aye Mi16Daw Aye Mi16Daw Aye Mi16Daw Aye Mi
8       U Soe Myint       • Ensure to keep for surrounding of the factory         9       U Mya Thwin       • Thank you so much for performing of a good practice         10       Myo Thu       • Thank you so much for performing of a good practice         11       Ma Myint Myint       • I want to mitigate food dye in the jellies for health of the children         12       U Kyi Soe       • To keep cleaning of the factory's environment         13       Daw Aye Thandar       • I got it, the benefits and disadvantages of the impact to the Environment due to dispose of wastewater from the factor         14       Daw Wai Wai Khin       • I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers         15       Daw Zar Zar Htet       • Ensure a safe and healthy workplace for employees         16       Daw Aye Mi       • Ensure to keep the production of jellies and not polluting
9U Mya Thwin10Myo Thu• Thank you so much for performing of a good practice11Ma Myint Myint Aye• I want to mitigate food dye in the jellies for health of the children12U Kyi Soe• To keep cleaning of the factory's environment13Daw Aye Thandar• I got it, the benefits and disadvantages of the impact to the Environment due to dispose of wastewater from the factor14Daw Wai Wai Khin• I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers15Daw Zar Zar Htet• Ensure a safe and healthy workplace for employees16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
10Myo Thu• Thank you so much for performing of a good practice11Ma Myint Myint Aye• I want to mitigate food dye in the jellies for health of the children12U Kyi Soe• To keep cleaning of the factory's environment13Daw Aye Thandar• I got it, the benefits and disadvantages of the impact to the Environment due to dispose of wastewater from the factor14Daw Wai Wai Khin• I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers15Daw Zar Zar Htet• Ensure a safe and healthy workplace for employees16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
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Ayechildren12U Kyi Soe• To keep cleaning of the factory's environment13Daw Aye Thandar• I got it, the benefits and disadvantages of the impact to the Environment due to dispose of wastewater from the factor14Daw Wai Wai Khin• I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers15Daw Zar Zar Htet• Ensure a safe and healthy workplace for employees16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
12U Kyi Soe• To keep cleaning of the factory's environment13Daw Aye Thandar• I got it, the benefits and disadvantages of the impact to the Environment due to dispose of wastewater from the factor14Daw Wai Wai Khin• I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers15Daw Zar Zar Htet• Ensure a safe and healthy workplace for employees16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
13Daw Aye ThandarI got it, the benefits and disadvantages of the impact to the Environment due to dispose of wastewater from the factor14Daw Wai Wai Khin• I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers15Daw Zar Zar Htet• Ensure a safe and healthy workplace for employees16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
Image:
14Daw Wai Wai Khin• I advise to discuss manufacturing of jellies for the health of the children because the most of the children are customers15Daw Zar Zar Htet• Ensure a safe and healthy workplace for employees16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
of the children because the most of the children are customers15Daw Zar Zar Htet• Ensure a safe and healthy workplace for employees16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
16Daw Aye Mi• Ensure to keep the production of jellies and not polluting
the environment
17 Ma Khin Win Maw • I want to mitigate food dye in the jellies for health of the children
Process of factory and area is very clean
• I want to manufacture of jellies, not to cause disease but t
get energy
18Ma Thida• To keep the environment clean
Not to cause for the health of the employees of the factory
• I advise to discuss manufacturing of jellies for the health
of the children because the most of the children are
customers
19   Daw Su Wai   • To keep the environment clean
Must be cleaned packaging of the jellies
• Don't be use chemical
• Not to pollute for Air, Water, Soil and Noise of the
environment
• I advise to manufacture of Jellies, not to effect on the
health of the children
Must be cleaned surrounding of the factory
20   Daw Swe Swe Oo   •   Don't be use chemical dye
Must be cleaned packaging of the jellies
• I advise to generate for Jellies, not to effect on the health
of the children but to get energy for them

Manufacturing and Distribution of Various Types of Jellies

Thai Faster Products & M.K Co., Ltd.



Figure 8.2 Recorded Photos taken from Public Disclosure Meeting

Green Myanmar Environmental Services Co., Ltd.

Thai Faster Products & M.K Co., Ltd.

# 8.5 **Response for Comments and Suggestions**

Green Myanmar Environmental Services (GMES) Co., Ltd requested client, Thai Faster Products & M.K Co., Ltd to commitments on the suggestions of public consultation meeting by email at 17.8.2018. The client replied at 24.8.2018 by email. The GMES requesting letter and the proponent's commitment letters are attached as Appendix (21) and (22) respectively.
## 9.0 CONCLUSION AND RECOMMENDATION

#### 9.1 Conclusion

This Initial Environment Examination (IEE) study was carried out based on the primary data, secondary data, information provided by the project proponent, existing studies and reports relevant to the project, baseline environmental monitoring and stakeholder engagement. Assessments of potential environmental impacts due to implementation of the project activities during operational phase is conducted qualitatively and quantitatively where possible. This IEE report provides a full picture of all potential environmental impacts associated with the proposed project, and made recommendations for prevention and mitigation measures for negative impacts and enhancement for positive impacts.

The positive impacts due to the proposed project will be as follows.

- Increasing local employment opportunities
- Enhancing the capabilities and work skills of the local employees
- Improving of socio-economic conditions
- Increasing of government's revenue
- Supporting the economic growth of country
- The negative impacts due to the proposed project will be as follows.
- Air Pollution
- Water Pollution
- Noise pollution
- Solid Waste generation

Based on the analysis values of the air quality, water quality and noise levels, these are the summary of findings.

### 9.2 Findings

### Air Pollution

Particulate Matter (PM10 & PM2.5) contents of ambient air are higher than National Environmental Quality (Emission) Guidelines. Sulfur Dioxide level of ambient air is also slightly higher than guidelines. Other parameters are within the permissible limits of the guidelines. The Particulate Matter (PM10 & PM2.5) contents of workplace air analysis are within the guideline values and there is no issue.

### Water Pollution

It has been noticed that turbidities of waste water and tube well water are slightly higher than the guideline values. The drinking water quality is within the WHO guideline limits. The other parameters of all water sources are within the guideline values and there are no issues.

### Noise Pollution

The ambient noise level is within the permissible level. Noise level monitoring in several workplaces are conducted and in most of the workplaces the noise levels are within

Environmental Management Plan (EMP)

Manufacturing and Distribution of Various Types of Jellies

the allowable limits. Based on the evaluation of the significance of impacts qualitatively, these are the summary of findings.

#### Solid Waste Generation

There is found dispose of the solid waste systematically accord to the guidelines and no critical issue of solid waste disposal.

For operational phase, air pollution, water pollution, soil pollution, socio-economic aspects and health and safety issues have moderate risks and fire hazard is major risk. But after implementation of mitigation measures, the residual impacts are low risks and it is acceptable. For decommissioning phase, air pollution, water pollution, socio-economic impacts, health and safety issues are moderate risks and noise pollution is major risk. But after implementing the mitigation measures, the residual impacts will likely to be low risks and it would be acceptable.

#### 9.3 Recommendations

Based on potential impacts figured out, an Environmental Management Plan (EMP) is prepared and presented in this report, as a solution for environmental, social, health and safety issues for operational phase and decommissioning phase. EMP is prepared in compliance with the existing environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar. Many of the impacts are localized. As the project, fire hazard is a critical concern. The other concerns are water resource depletion and electricity consumption. The recommendations are

- To reduce the risk of fire, Fire Prevention Plan (as in EMP) need to be implemented and adhered to it.
- To minimize the water consumption, it is recommended that to install water meter and water saving equipment.
- To reduce electricity consumption, it is recommended that to use natural light as much as possible in the daytime, energy saving lamps, auto pump, and variable speed drive motor and inverter type air conditioners.
- To minimize Sulfur Dioxide emission level, low Sulfur content diesel should be used for generators.
- To reduce PM2.5 and PM10 emission within premises, grow more plants. It is also advised that to maintain good housekeeping. Spray water to suppress the dust generation.
- To reduce turbidity of tube well water, let the particles settle first for sedimentation in the water storage tank before using.
- To reduce turbidity of waste water, put the sedimentation pond and discharge the waste water only after treating to the waste water treatment plant.
- To reduce the risks of incidents, preventive measures for health, safety and fire must be followed by all employees.
- The proponent should follow environmental policy, laws, rules and instructions of Union of Myanmar.
- Implement EMP once it is approved by relevant authorities.
- Keep all the records of EMP for environmental audit.

Environmental Management Plan (EMP)

Manufacturing and Distribution of Various Types of Jellies

- Review the annual environmental audit report and take necessary actions for any concerns raised.
- To boost the socio economic of the local environment and social welfares of the employees, the effective CSR should be developed and implemented.
- The effective implementation and adherence to EMP might assist for minimizing of the negative environmental and social impacts to acceptable levels.

# APPENDIX

# List of Appendix

APPENDIX (1): Certificate for Transitional Consultant Registration	II
APPENDIX (2): Certificate for Transitional Consultant (Person)	IV
APPENDIX (3): Calibration Certificate for Monitoring Instruments	XI
APPENDIX (4): Analysis Results of Raw Materials	XIV
APPENDIX (5): Quality Control Report of Products	XXI
APPENDIX (6): Company License	XXIII
APPENDIX (7): Private Industrial License	XXIV
APPENDIX (8): Approval Letter of Transformer Using	XXV
APPENDIX (9): Certificates of Electrical Inspection	XXVI
APPENDIX (10): Certificate of Boiler Using	XXIX
APPENDIX (11): Inspection for Boiler Using	XXX
APPENDIX (12): Air Quality Analysis Results	XXXI
APPENDIX (13): Noise Level Analysis Results	XXXIV
APPENDIX (14): Water Analysis Results	XXXV
APPENDIX (15): Wastewater Analysis Results	XLV
APPENDIX (16): Soil Quality Analysis Results	LI
APPENDIX (17): Attendance List of Public Consultation Meeting	LII
APPENDIX (18): Suggestions Letters of Public Consultation Meeting	LIV
APPENDIX (19): Attendance List of Employee Discussion Program	LIX
APPENDIX (20): Suggestion Letters of Employee Discussion Program	LXI
APPENDIX (21): Requesting Letter of GMES on the Suggestion of Public Cons Meeting	
APPENDIX (22): Proponent Commitment Letter on Suggestion of Public Consu Meeting	
APPENDIX (23): Recommendation for Health and safety	LXXI
APPENDIX (24): Recommendation for Food Manufacturing	LXXII
APPENDIX (25): Certified of HALAL MYANMAR	LXXIII
APPENDIX (26): Permitted of YCDC	LXXIV
APPENDIX (27): Contract of Land and Building leasing	LXXV
APPENDIX (28): Record of Covid-19 Vaccination for employees	LXXVII
APPENDIX (29): Material Safety Data Sheet (MSDS)	LXXVIII







### **APPENDIX (2): Certificate for Transitional Consultant (Person)**















# Thai Faster Products & M.K Co., Ltd.

### **APPENDIX (3): Calibration Certificate for Monitoring Instruments**

#### Haz –Scanner (EPAS)

1			3
	Certi	ficate of Calibra	lion
	· · · · · · · · · · · · · · · · · · ·	Number: EDCQP20	
Enviro	nmental Devices Corr calibrated to publis	poration certifies the Ha shed specifications and 1	az-Scanner model EPAS is NIST traceable.
ISO12103 -	ation Dust Specification -1 A2 Fine Test Dust a	ns are NIST traceable us ind is designed to agree	ing Coulter Mutisizer II e. with EPA Class I and Class III I EN 12341 and EN 14907
	ow Standard: LFE7743		Calibration Gas using NIST PA Instrumental Test Methods 0.
		ne requirements of ANS 562A, and customer's sp	I/ASQC standard Q9000-1994 pecification if required.
Atmospheri Measureme 17025 guide	umidity = 30% ic Pressure = 760 mm ent Uncertainty Estim elines.	ated @ 95% Confiden	ce Level (k=2) using ISO
Model EPAS	Serial Number 918/53	Calibration Date November 23,20	Next Calibration Due
		Sensor A Sensor $K = \frac{1}{2}\frac{9}{3}\frac{1}{K}$ $K = \frac{3}{2}$	
Technician		Supervisor	
Dan Okuniewi	20-	Mark Sullivan	res
4 Wilder Dr	ntal Devices Corporation rive Building #15 H 03865		

#### Sound level Meter

	A pigos strest, orly see you can find hereit
	International Co., Ltd.
Head Office -	SH- B5(4), Malikha Housing, Yadanar Road, 14/ Bawamyint Quarter (Frangangyun Township) Yangon, Myanmar.
Ph:01-856 6717, 8	56 0135, 856 9732, 09 - 502 5972, Hot Line : 09 - 730 87709, 09 - 492 25964, 09 - 281 88509, 04 982 423734, 09 982 423735, Fax : 01 - 856 6717
Branch Office -	No.(13/7), Mya Sandar Road, Between 26 x 27 & 62 x 63 Street, Mandalay. Ph. 19 201 09000, 08 250 678 505
Т	D.
G	reen Myanmar Environmental Service
Ca	alibration Date : 18/2/2019
	Service Certificate
w	e here by certified that Sound Level Meter, GM 1356, S/N- CX : 1294184 is servicing
by	Amigos Service and Technical Support Department( Amigos International Co.,Ltd ).
	$\sum \phi_{e}$
	Ywet Nu Nge
	Senior Engineer(Incharge)
	Amigos International Co., Ltd

#### Kane 900 Combustion Analyzer (Stack Emission Monitoring Instrument)

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### **APPENDIX (4): Analysis Results of Raw Materials**

### <u>Alginate</u>

			24/02/17 DANISCO
			First you add knowledg
Berli Jucker Specialties Limited 99 Sol Rubla, Sukhumvit 42 Ro		Certificate of A	nalysis
Kwang Prakanong, Khet Klongto	sev.	Date:	03 Aug 2016
BANGKOK 10110 THAILAND		Our ref. no.:	41951375 10
		Your ref.	4433001428
Material: 059378	1	CONCORE AL	100000 (000 - 1000 (0000))
Batch No.: 4502800 Quantity: 3,000 1	9218	Best before date Production date:	
Test	Result	Unit	
Loss on drying	14.5	5	Ed V
pH (1%)	6.2		
Particle Size (> 200pm)	3.0	*	
Viscosity 1 %, Breekfield LV, 20 °C Comments	470	mPa asc	
		the specifications stated i	
This certificate is generated eutor			
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This certificate is generated eutom Patricia Cotivy Quality Control Department Denisco Landerneau SAS Societe du Groupe DuPont La Grande Palud	natically		
This certificate is generated eutom Patricia Cotivy Dusiity Control Department Danisco Landerneau SAS Societe du Groupe DuPont	natically		

Green Myanmar Environmental Services Co., Ltd.

# Apple Flavor

tirmenich		Certificat	e of A	nalys
FIRMENICH (THAILAND) LTD 1126/2, Vanit II Building 12/F Makkasan, Rajthevi BANGKOK 10400 THAILAND				
Tel:66 2 022 4220 Fax:66 2 255	3554 Ban	gkok, 23-Mar-17		Page 1/1
Product 052691 C APPLE FLAVOUR	OM-N KRA1 99/99	ANAPORN MARKETING CO IOI 'UMBAN MOO 4 JTSAKHON 74130	, LTD	
Reference Batch: 100310704 Production Date: 20-Oct-16 Order Number: 60007446 PO Number: PO040155	10	Best-Before-Date: Delivery Number:	Indonesia 20-Oct-17 84583029 75.000 KG	-
Remarks	Card and	2		
	man pris	~		
Characteristic	Result	[Specification]	MU	Method
Appearance	CONFORMS T	0	NA	CQ-012
An all and a second sec		[ OILY AND LIMPID LIQU	JID ]	
Colour	CONFORMS T		NA	CQ-001
Odour		[COLOURLESS]		-
Oddur	CONFORMS T		NA	CQ-022
Specific Gravity (d20/20)	1.030	[FIRMENICH STANDAR [1.024 - 1.034]	NA	CQ-010
Specific Gravity (d25/25)	1.027	[1.021 - 1.031]	NA	CQ-010
Refractive Index (nD/20)	1,431	[1.428 - 1.434]	NA	CQ-015
Refractive Index (nD/25)	1.429	[1.426 - 1.432]	NA	CQ-015
		Contraint -		
Cost 1	Qua	Ling Lee lity Manager @firmenich.com		
This computer generated Certific	ate of Analysis is valid	without signature.		
Additional Product Information				
Flash Point : 65	°C / 149 *F			
Storage Condition D		ainers, optimum temp. 11-25	°C / 52-77 °F	
1.44				
		2		
This Certificate of Analysis does suitability of this product for its ap this product is incorporated. The	not relieve the purchas plication and to compl	er from undertaking their owr with all relevant legal require ns are valid for the time of an	tests in order t ements for any g	o assure the goods into whi

Citric Acid

₩ WN SUMA WN SUMA WN SUMA SUNSHINE	Tel:037278	TAMBOLTHATOOM, SRIMANAPHOTE PR w.thaisunshine.net 801 Fax: 037278801 tinexsb@ thaisunshine.net	ACHINBURI 25140 5	a:p: -6-
阳力	光国际生	物有限公司		
BEHSHINE BIO	I ECH IN	TERNATIONAL CO.	, LTD.	
CERT	IFICATE	OF ANALYSIS		
			DATE : 02/06/2017	,
COMMODITY: CITRIC ACID MONOHY				
BATCH NUMBER: AM-1705-511618-801 MANUFACTURING DATE: 27/05/2017 EXPIRY DATE: 26/05/2020	MESHQUANT	TY : 25KG / 600 BAGS/ 15,000 DATE OF LOADING :02/06/201		- 3
ITEM	UNIT	STANDARD DATA	ACTUAL DATA	1
DESCRIPTION	-	COLOURLESS CRYSTAL, WHITE	ASSTANDARD	
IDENTIFICATION & SOLUBBLITY	-	PASS TEST	PASS TEST	- 14
CLARITY & COLOR OF SOLUTION		PASS TEST	PASSTEST	5 1
READILY CARBONISABLE SUBSTANCES	T.	PASS TEST	PASS JEST	
EVALUATION OF INSOLUBLES	+	PASS TEST	PASS TEST	
CIDIER		PASS TEST	PASS TEST	
PARILM	-	PASS TEST	PASS TEST	
CONTENT	-9a	99.50-101.0	100.04	
WATER	5	7.5-9.0	8.57	
Construction and a state of the	PPM	53	1	
HEAVY METALS ( AS PB )				
OXALATE	PPM .	≤350°	30	
OXALATE ALUMINUM			30	
OXALATE ALUMINIEM DRON	PPM .	≤ 350*		
OXALATE ALUMINUM DRON ARSENIK	PPM _1	≤350° ≤0.2	0.15	
OXALATE ALUMINILM BRON ARSENIC MERCURY	PPM , PPM PPM	≤350° ≤0.2 ≤50	0.15	
OXALATE ALUMINIUM DRON ARSENIK MERCURY LEAD	PPM ,1 PPM PPM PPM	≤ 350° ≤ 0.2 ≤ 50 ≤ 50	0.15	
OXALATE ALUMINIUM BRON ARSENIC MERCURY LEAD BACTURIAL ENDOTOXINS	PPM , PPM PPM PPM PPM	≤350° ≤0.2 ≤50 ≤1.0 ≤1.0	0.15 1 0.1 0.24	
OXALATE ALUMINIEM BRON ARSENIC MERCURY LEAD RACTI RIAL ENDOTOXINS SULPHATED ASH	PPM , PPM PPM PPM PPM PPM	≤350° ≤0.2 ≤50 ≤50 ≤5.0 ≤5.0 ≤5.0	0.15 1 0.1 0.24 0.2	
OXALATE ALUMINIUM DRON ARSENIC MERCURY LEAD BACTURIAL ENDOTOXINS SULPHATED ASH THEORIN	PPM , PPM PPM PPM PPM PPM L LL-MG	≤350° ≤0.2 ≤50 ≤1.0 ≤1.0 ≤1.0 ≤1.0 ≤1.0 ≤1.0 ≤1.0 ≤1.	0.15 1 0.1 0.24 0.2 0.35	
OXALATE ALUMINIEM BRON ARSENIC MERCURY LEAD RACTI RIAL ENDOTOXINS SULPHATED ASH	PPM , PPM PPM PPM PPM PPM LU,MG %	≤ 350° ≤ 0.2 ≤ 50 ≤ 1.0 ≤ 1.0 ≤ 1.0 ≤ 0.3 ≤ 0.3 ≤ 0.1	0.15 1 0.1 0.24 0.2 0.35 0.01	

### Environmental Management Plan (EMP) Report for Manufacturing and Distribution of Various Types of Jellies

#### Thai Faster Products & M.K Co., Ltd.

# Grape Flavor

* MANE		CERTIFICATE OF ANALYSIS
	10.00	
	VM/GRV/A0	100249
Customer	SRINANAPORN MARKETING	CO., LTD.
Lot No	: 21708907	
Production Date		
Best Before	: 11 May 2017 : 11 May 2018	
	-	
Analysis Data	Result	Specification
Odor / Taste	Conform	Mane Standard
Appearance Color	Conform Conform	Mane Standard
Refractive Index (20°C)	1.4353	Coloriess-Yellow 1.420-1.450
Specific Gravity 20/20*C	1.0384	1.017-1.057
		wind .
	This document has been produced electro	

#### <u>Maltodextrin</u>

11:40 胜大商 貿 有限公司 岛 市 青 QINGDAO SHENGDA COMMERCIAL & TRADE CO., LTD. Fax: 86-532-85012073 Tel: 86-532-85010535 Email:info@nheagdatrade.com.co www.whengstatrusta.com.co CERTIFICATE OF ANALYSIS DATE: OCT .30, 2016 Maitodextrin DE10-12 Product Name Lot No: HJ20161010 / DATE OF PRODUCTION 10/10/2016 DATE OF EXPIRY 09/10/2018 Test Standard GB/T20884-2007 White powder and no fixed shape Appearance Has special smell of maltodaxtrin and no exceptional smell Smell Sweetless or slightly sweetness ,no other taste l'aste. Standards Results Tiems 10-12 11.6 130 DE%(m/m) Conform Starch Test Negative 5.6 Moisture%(m/m) ≤6.0 98.9 298 Solubility%(m/m) 4.5-6.5 5.3 PH <0.6 0.04 Ash%(m/m) NO blue reaction Conform Iodin Experiment HEAVY METAL ANAYSIS 0.03 ≤0.1 As mg/kg ≤0.5 0.03 Pb mg/kg 0.03 \$5.0 Cu mg/kg 0.01 ≤0.04 Sulfur Dioxide Residual g/kg MICROBIOLOGICAL ANALYSIS Total Plate Count CFU/g ≤3000 1.2×10<sup>4</sup> SECOND DURING 認認識者而約日的。(預 ≤30 cell group MPN/100g 银公 四 mg 10 mining Not detected Pathogenic Bacterium (Salmonella, Shigella, Staphylococcus Aureus)

#### Environmental Management Plan (EMP) Report for Manufacturing and Distribution of Various Types of Jellies

#### Thai Faster Products & M.K Co., Ltd.

### **Orange Flavor**

萬德國際香料有限公司 M-Tech Aroma International Ltd. CERTIFICATE OF ANALYSIS PRODUCT NAME : ORANGE CONCENTRATE PRODUCT NUMBER : MF-11183 LOT NUMBER : V323 / CLASSIFICATION / DESCRIPTION : NATURE IDENTICAL FLAVOR APPEARANCE : NON-VISCOUS YELLOW COLOR LIQUID REFRACTIVE INDEX AT 25 DEG C : 1.4746 SPECIFIC GRAVITY AT 20 DEG C : 0.9017 STORAGE CONDITION : KEEP IN WELL-FILLED AIR-TIGHT CONTAINER AND AWAY FROM DIRECT HEAT / LIGHT. APPLICATION : CANDY RECOMMENDED DOSAGE : 0.1% ORIGIN : HONG KONG SIGNATURE Kin ISSUED BY : EVA CHU DATE : APRIL 10, 2017 EXPIRY DATE 2 YEARS 1/F., Gioria Weaving & Knitting Fty. Bidg., No. 1 Tung Yuen Street, Yau Tong Bay, Kowloon, Hong Kong. Tel: (852) 2515 0563, 2595 9336 Fax: (852) 2348 1806 E-mail: info@mtecharbma.com Web Site: http://www.mtecharoma.com E-mail: info@mtecharoma.com 香港九龍油塘灣東源街一號太童織造廠大廈一樓 ISO Certify Company

# <u>Plastic Film</u>

TO THAI FASTER PRODUCTS CO	Certifica	te of Analysis		
ATTN FAX NO. DELIVERY DATE 20/03/2017		FROM FAX NO. TEL DATE	Quality Assura 034-403-081 034-403-000 £ 20/03/2017	
CUSTOMER NAME THAI FASTER PRODUCT PRODUCT NAME ROLL JELLY HERO BOY J JOB ORDER J1702614 PO NO.	S CO,LTD, 20 G. 40 LINES EDIT TEXT	SPEC PETIZ/INK/PEZQ/ESP3. QTV.	5	
TYPICAL PROPERTIES	UNIT			
Nimension Check	1	SPECIFICATION		RESULT
Tolerance Thickness	Micron	70 00 100 44		
Dimension of Reel		70.00 (66.00 - 74.00)		67.00-74.00
Slitting Size	mm			
Repeat Length	mm	940.00 (938.00 - 942.0		939.00
etention Solvent		105.00 (104.00 - 106.0)	))	105.00
Total amount of retained solvent				
onding Strength	mg/m2	=< 20.00		0.45
PET/PE	-			
PE/ESP	gt/25 mm	>= 250.00		760.00-1,288.00
	gt/25 mm			Can not separate
				•
nk : Backage Shell life : In ;				HERO TEOYS
10000 11	tions s	AL DA	AL	A CONTRACTOR OF A CONTRACTOR O

# **APPENDIX (5): Quality Control Report of Products**

### <u>Daiya Moto</u>

s	RINANAP	ORN MAR	KETING C	CO.,LTD. E	BRANCH NO		tional B-	out for 1	elly and B	evenee		ATORY	ANALY	*DEPAI	e i with					-	01-03	207 / R00 7-16
e Records De	andation	Plantie Con	Manufactur	red By :	Thai Faster		Kind of				no Light Ki	Mook	Flavour :	Stawber	-		UF	inishee	l Prod	uet	Shet	
	semption		Winnoracia		1	1								Chem			Final	Reput	~	-	æ	CC :
Report		Date		sample	Lot No.	MFG	-		l ve		roorganist			resu		Remark			Reported By	Verified By	Approved By	Plant Manage
Number	Received	Analysia	Reported	no.			TPC (inflorg)	Y/M Li,Deg)	coliform (olicy)	10.00(0)			S. aureus	%Brix	pH		Pass	NU	Rep	Vet	App	QC Manager
						060	-(10	-(10)	-10	y10	~			-		4เดียน	-			ale	(Ann	
F0907003	04/07/16	.04/07/16	09/07/16	FG04003		09/03/16	<10	~10	<10	<10		- 6	*		4.25	4 (801)	1		d	40mm	10pm	1
								-														
	-			1.12			-	1	-				-							-		
		271 117			111															-	_	
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						-		1200									-		-			
-					139		- 33														_	
			10	1.5										1					-			_
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#### Environmental Management Plan (EMP) Report for Manufacturing and Distribution of Various Types of Jellies

# <u>Hero Boys</u>

S	RINANAP	ORN MAR	KETING C	O.,LTD. B	RANCH NO	10000.	1				LABOR	ATORY /	NALY	DEPA	RTME	INT				F	M-LA -	207 / R00
1.	outra and a						ical Rep	ort for J	lelly and B	everage	Product				_						01-07	-16
Sample De	scription	Plastic Cup	Manufactur	ed By :	Thai Fuster()	(rinw	Kind of	Produ	CK :	Daiyami	to Light K	it Meeds	Flavour :	Snawbo	107		U F	inished	Prodi	ict	Shell	life
Report		Date		sample					Result	of Min	oorganisi	n .		Chem			Final	Result	dBy	1By	dBy	CC:
Number	Received	Analysis	Reported	no.	Lot No.	MFG	TPC	Y/M	coliform		Flat sour	B. cerews	S. mercua	nesi 96Brix	1	Remark	Pass	NC	Reported By	Verified By	Approved By	Plant Manager QC Manager
						Seit.	-(10	(4/14/2) >(10	(galla)	<10 <10	-				1.072	-			VARC.		-	
F0907003	04/07/16	04/07/16	09/07/16	EG04003		09/03/16	<10	<10	<10	<10					4.25	4 เดือน	1		ð	Aban	Pormune	
	-					-		-	-												- Mill	
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	-									-		-					12					
	1.7						-		-	-				1	-		1					



### **APPENDIX (6): Company License**

	Description of
	ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
	စက်မှုဝန်ကြီးဌာန
	စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန
	ပုဂ္ဂလီကစက်မှုလုပ်ငန်းမှတ်ပုံတင်လက်မှတ်
	ဖူမှတ်ပုံတင်အမှတ် <u>ရက/ကြီး/၄၄၉၇</u> ရက်စွဲ <u>ာင်</u> ၀၂-၂၀၁၆
လုစ်	ငန်းအရွယ်အစား အကြီးစား ပြည်ထောင်စုနယ်မြေ/တိုင်းဒေသကြီး/ပြည်နယ် ရန်ကုန်
	အောက်ပါလုဝ်ငန်းသည် ပုဂ္ဂလိကစက်မှုလုဝ်ငန်း ဥပဒေ ပုဒ်မ ၇ ပုဒ်မခွဲ ( ာ )အရ မှတ်ပုံတင်ဦ
ეზი	ပါသည်။ ၈၄၄ က ကားကားက ကားကားက ကားကို ကို ကို ကို ကျောက်ကြောင့် ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်ကြောက်က
08	လုဝ်ငန်းအစည် Thai Faster Products And M.K.Co.,Ltd. ကွယ်လီအမှိုးမှိုးထုတ်လုပ်ခြင်းလုပ်ငန်း
J	လုဝ်ငန်းအမှိုးအမည် စားသောက်ရေးဆိုင်ရာလုပ်ငန်း
<b>6</b>	အဓိကကုန်ဆွောပစ္စည်းအမှိုးအမည် HERO BOYS, DATYA MOTO KIT ကုန်အမှတ်တံဆိ
	······································
<b>9</b> *	တည်နေရာလိစ်စာ အမှတ်(၄၆၇-က) ကနောင်မင်းသားကြီးလမ်း မြေတိုင်းရပ်ကွက်အမှတ်(၂၅ ရွှေလင် ပန်းစက်မှုဇုန်၊ လှိုင်သာယာမြို့နယ်၊ မြောက်ပိုင်းခရိုင်
<b>)</b> *	ဝိုင်ဆိုင်မှုအမျိုးအစား <u>ကုမ္ပ</u> ကီပိုင် နှင့်နှင့် နှင့်နှင့်ပြားသည်
Se .	လုဝ်ငန်းရှင်အမည် ဦးမြင့်ဦး(Director)
2 <b>•</b>	ကိုင်ဆောင်သည့်မှတ်ပုံတင်အမှတ် ၉/မမနေနိုင်ဝဲ၈၈၇၅၇
	carro, car o Sum S a a a - F
878	ရင်းနှီးမြှုပ်နှံမှုတန်ဖိုး(ကျပ်)၄. ၈၁၉၁သန်း+USD ၁. ၅၀၂၄သန်တည်ထောင်သည့်ခုနှစ် ၂၀၁၆
	ရင်းနှီးမြှုပ်နှံမှုတန်ဖိုး(ကျပ်)၇- ၈၁၉၁သန်း+USD ၁. ၅၀၂၄သန်းတည်ထောင်သည့်ခုနှစ် ၂၀၁၆ အသုံးပြုသည့်အားအမျိုးအစား ထရန်စဖော်မာ/လျှပ်ထုတ်စက် မြင်းကောင်ရေ ၇၃၈ HP/
61 61 61	

# **APPENDIX (7): Private Industrial License**

10 W (J (4 ပြည်ထောင်စုမြန်မာနိုင်ငံတော်အစိုးရ အမှတ်(၁)စက်မှုဝန်ကြီးဌာန စက်မှုကြီးကြပ်ရေး နှင့် စစ်ဆေးရေးဦးစီးဌာန തെഴുക് - ട്വാട്ട(ട്ര)ഡം/നയ- 1/ 1000 ( ട്രെറ്റ്റ്റ്റ) ရက်စွဲ - ၂၀၁၁ ခုနစ်၊ မတ်လ (၂၅) ရက် လိုင်သာယာမြို့နယ်ခွေလင်ပန်းစက်မှုဇုန်းမြေကွက်အမှတ်(၄၆၇-က)ရှိ ဦးပြည့်ဖြီး အကြောင်းအရာ။ ၏ အထွေထွေသိုလှောင်ရုံတွင်တည်ဆောက်ဖြစ်သော ၁၀/၀. ၄ ကေဒီ(၃၁၅) ကေစိုအေ ဓာတ်အားခွဲရုံဓာတ်အားဖြန်ဖြူးခွင့် ပြခြင်းကိစ္စ ာ၊ ဓာတ်အားဖြန်ပြီးရေးဌာန၊ရန်ကုန်မြို့တော်လျှပ်စစ်ဓာတ်အားပေးရေးအဖွဲ့ ရည် ညွှန်း ချက်။ ၏၁၇. ၃. ၂၀၁၁ရက်ဖွဲ့ပါစာအမှတ်၉၈၀/အ မ၆က(ဦးပြည့်ပြီး)/၂၀၁၁။ ၂။လျှပ်စစ်စစ်ဆေးရေး ရန်ကုန်တိုင်း၏ ၂၂ . ၃. ၂၀၀၁ရက်စွဲပါ စာအဖတ်၊ 2929(07)9m-0009/ 1000( 2007 )1 အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍လိုင်သာယာမြို့နယ်၊ရွှေလင်ပန်းစက်မှုဇုန်၊ မြေကွက်အမှတ်(၄၆၇-က)ရှိ ဦးပြည့်ဖြီး ၏ အထွေထွေသို့လှောင်ရုံတွင်တည်ဆောက်ပြီးဖြစ်သော ၁၁/၀. ၄ ကေဗွီ(၃၁၅) ကေဗွီအေ ဓာတ်အားခွဲရုံအားစစ်ဆေးရာလျှပ်စစ်ဥပဒေဆိုင်ရာလုပ်ထုံး လုပ်နည်းများ နှင့်ကိုက်ညီကြောင်းစစ်ဆေးတွေ့ ရှိရသဖြင့်အဆိုပါဓာတ်အားခွဲရုံအား ၂၀၁၁ ခုနှစ်မတ်လ ၂၄ )ရက်နေ့မှစတင်၍ ဓာတ်အားဖြန့်ဖြူးခွင့်ပြုကြောင်း ခွင့်ဖြမိန့်တစ်စောင်ကိုပေးပို့ပါသည်။ စန်းဝင်း - ညွှန်ကြားရေးမျှ 2229 ရန်ကုန်မြို့တော်လျှပ်စစ်ဓာတ်အားပေးခေအဖွဲ့ မိတ္တကို-. - အင်ဂျင်နီယာချပ်ရန်ကုန်မြို့ကော်လျှပ်စစ်ဓာက်အားစေးရေးအဖွဲ့။ -ခုတိယညွှန်ကြားရေမျှာလျှဝ်စစ်စစ်ဆေးရောရန်ကုန်တိုင်း၊ -ခရိုင်အုပ်ချုပ်ရေးမှုး၊မြောက်ပိုင်းခရိုင်၊ရန်ကုန်မြို့တော်လျှပ်စစ်ဓာတ်အားပေးရေးအဖွဲ့။ -မြို့နယ်အုပ်ချွပ်နေများလိုင်သာယာမြို့နယ်ရန်ကုန်မြို့တော်လျှပ်စစ်ဓာတ်အားဖေးနေအဖွဲ့။ -ရဲလက်။

### **APPENDIX (8):** Approval Letter of Transformer Using

(		ຄູ່ເຫຼົາເປັນເວລາ	စက်မှုဝန်ကြီးဌာန ကြီး စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန						
C	and discussion	-Huldeleneory	လျှပ်စစ် – စစ်ဆေးရေးဌာန						
	-		သျှပ်စစ် စစ်စစ်စစ်ခုမှုချွှ်ရ ဘမ္ဘာအေးဘုရားလမ်း၊ ဗဟန်းမြို့နယ်း ရန်ကုန်မြို့						
			မြှခြင်းဆိုင်ရာ အန္တရာယ်ကင်းရှင်းကြောင်းလက်မှတ်						
		12 12 12 12 13	/YD- 066 / 4-2022						
6393	ဆးရာဝ ာက်ဖော်	ဒွင် လျှပ်စစ်ဥပဒေ ဆိုင်ရ	ည္(ဃ) တွင် ပြဋ္ဌာန်းချက်အရ လျှပ်စစ်ဓာတ်အား အသုံးပြုခြင်းလုပ်ငန်းက ၁ လုပ်ထုံးလုပ်နည်းများနှင့် ကိုက်ညီကြောင်း စစ်ဆေးတွေ့ရှိရသဖြ ကတ်အားအသုံးပြုခြင်း လုပ်ငန်းကို အန္တရာယ်ကင်းရှင်းကြောင်း လက်မှတ						
10	လျှပ်စစ်ဓာတ်အားအသုံးပြုခြင်း								
	(က)	သတ်မှတ်ဗို့အား	၄၀၀/၂၃၀ ဗို့						
	(0)	လုပ်ငန်းအမျိုးအမည်	ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ငန်း						
			Thai Faster Products And M.K Co., Ltd						
	(n)	ခွင့်ပြုဝန်အား	338 HP + ( 500 kVA + 75 kVA ) (Generator)						
յո	နေရာဒေသ		<u>ફ</u> ૈ:બြર્ટ્ટ્ટ:						
			အမှတ်(၄၆၇–က)၊ ကနောင်မင်းသားကြီးလမ်း၊						
			ရွှေလင်ပန်းစက်မှုဖုန်၊ လှိုင်သာယာမြို့နယ်။						
(၃)	လက်ရ	မှတ်ထုတ်ပေးသည့်ရက်	لل فل ، ۶ - لل						
(5)	လက်ရ	မတ်ကုန်ဆုံးသည့်ရက်	جزمز. ۶ ـ در						
	(ကျောဘက်တွင် ဖော်ပြထားသော စည်းကမ်းချက်များကို လိုက်နာရပါမည်။)								
	မှတ်ချ	က်။							
			colo -						
			atu						

1			သမ္မတမြန်မာနိုင်ငံတော်
° C	۱.	00 200 1907	ဂ်မှုဝန်ကြီးဌာန မကြီးကြင်ကောင်ခင်ကောက်နီးစီးက စ
6	and the	ရနကုနတိုင်းဒေသကြီး စက် လက်	မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန စစ်စစ်ဆေးရေး
		10.00	ဘုရားလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်မြို့
ශදේ	ກຼົງວင်းအ	ရာ။ ဒီဇယံအင်ဂျင်လျှပ်ထုတ်ရ	ာက် နှစ်ပတ်လည်စစ်ဆေးခြင်း
	J-JoJS)		ဗ္ဗဉ်း၍ အောက်ဖော်ပြပါ ဒီဇယ်အင်ဂျင်လျှပ်ထုတ်စက်ကို င်းလျှပ်စစ်စစ်ဆေးရေးဌာနမှ ( ၂၀ . ၄ .၂၀၂၂ ) ရက်နေ့တွင်
ية (27		စုတ်စက် စစ်ဆေးခအတွက် ပေး ဒုလည်း လက်ခံရရှိပြီးကြောင်း ပြန်	းသွင်းလာသော ( ၂၂. ၄ .၂၀၂၂ ) ရက်စွဲပါ ချလန်အမှတ် ကြားအပ်ပါသည်။
	(က)	လျှပ်ထုတ်စက်ကေဗွီအေ	75 kVA
	(ລ)	သတ်မှတ်ဇို့အား	200/ 400 V
	(n)	လျှပ်ထုတ်စက်အမျိုးအစား	DH85A-M (Denyo)
	(ဃ)	လျှပ်ထုတ်စက်နံပါတ်	3303815
	(c)	လျှပ်ထုတ်စက်တည်နေရာ	အမှတ်(၄၆၇–က)၊ ကနောင်မင်းသားကြီးလမ်း၊
			ရွှေလင်ပန်းစက်မှုစုန်၊ လှိုင်သာယာမြို့နယ်။
			တိုင်းလျှပ်စစ်စစ်ဆေးရေးမှူး (ရန်ကုန်တိုင်းဒေသကြီး)
\$:6	:53		0 9
പ്പപ	රිංගීකාද්	ုးမျိုးထုတ်လုပ်ငန်း (Thai Faster	Products And M.K Co., Ltd)
		၂–က)၊ ကနောင်မင်းသားကြီးလမ်း	
		စက်မှုစုန်၊ လှိုင်သာယာမြို့နယ်။	

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် စက်မှုဝန်ကြီးဌာန ခိုင်းဒေသကြီး စက်မှုကြီးကြပ်ရေးနှင့်စစ်ဆေးရေးဦးစီးဌာန လျှပ်စစ်စစ်ဆေးရေး အမှတ်-၁၉၂၊ ကမ္ဘာအေးဘုရားလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်မြို့ ဒီစယ်အင်ဂျင်လျှပ်ထုတ်စက် နှစ်ပတ်လည်စစ်ဆေးခြင်း အကြောင်းအရာ။ အထက်အကြောင်းအရာပါကိစ္စနှင့်စပ်လျဉ်း၍ အောက်ဖော်ပြပါ ဒီဧယ်အင်ဂျင်လျှပ်ထုတ်စက်ကို CH (၂၀၂၂-၂၀၂၃) ခု ဘဏ္ဍာရေးနှစ်အတွက် ဤတိုင်းလျှပ်စစ်စစ်ဆေးရေးဌာနမှ ( ၂၀ . ၄ .၂၀၂၂ ) ရက်နေ့တွင် စစ်ဆေးခဲ့ပြီး ဖြစ်ပါသည်။ လျှပ်ထုတ်စက် စစ်ဆေးခအတွက် ပေးသွင်းလာသော ( ၂၂. ၄ .၂၀၂၂ ) ရက်စွဲပါ ချလန်အမှတ် р ( ၇၂/ ၃၄ ) ကိုလည်း လက်ခံရရှိပြီးကြောင်း ပြန်ကြားအပ်ပါသည်။ (က) လျှပ်ထုတ်စက်ကေဗ္ဗီအေ 500 kVA (ခ) သတ်မှတ်ဗိုအား 230/ 400 V (ဂ) လျှပ်ထုတ်စက်အမျိုးအစား LSA47.2M7J6/4 (Partner) (ဃ) လျှပ်ထုတ်စက်နံပါတ် 048592003 (c) လျှပ်ထုတ်စက်တည်နေရာ အမှတ်(၄၆၇–က)၊ ကနောင်မင်းသားကြီးလမ်း၊ ရွှေလင်ပန်းစက်မှုစုန်၊ လွှင်သာယာမြို့နယ်။ တိုင်းလျှပ်စစ်စစ်ဆေးရေးမူး (ရန်ကုန်တိုင်းဒေသကြီး 3:4623: ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ငန်း (Thai Faster Products And M.K Co., Ltd) အမှတ်(၄၆၇–က)၊ ကနောင်မင်းသားကြီးလမ်း၊ ရွှေလင်ပန်းစက်မှုစုန်၊ လှိုင်သာယာမြို့နယ်။

ဘွိုင်လာယာယီအသုံးပြုစွင့်လက်မှတ် ( လုပ်ထုံးလုပ်နည်း အပိုဒ် ၆ အပိုဒ်ခွဲ (စာ) ) Carl General wear - and Folkin. Mr. Wishing Chains Thapan, That Finter Products and Mr. could grow and reaction and reaction and provident of a principal of a pr La Berner Bar Para Manuel Carrow Contract Contract of the State ထုတ်လုပ်သည့်တို့ခ်လာအခုတိ......ပါသော သို့မဟုတ်တွိုင်လာမှတ်ပုံတင်အမှတ် မ.စ 📶 🏹 ဖြစ်သော 😁 ကျောက်မှုမှာ ကြွန်လာကို ခွင့်ပြုစ်အား .....ကြောက်ကို .........မြင့်လက်မှတ်ထုတ်ပေးသည့်နေမှ (၆)လအသုံးပြုခွင့်ရှိသည်။ ယင်းကာလအဝိုင်းအခြားကျော်လွန်သည့်အခါ ထုတ်ပေးထားသည့် ဤယာယီအသုံးပြုခွင့်လက်မှတ် ပျက်ပြယ်စေရမည်။ and the second al manage (035co)08cm stonio Secondi na ple Larah ...... မှတ်ချက်။ ။ ဘွိုင်လာဥပဒေပုဒ်မှ ၁၅ ပါပြီဌာန်းထားသည့် သက်ဆိုင်ရာအစိုးရဌာန အဖွဲ့ အစည်းက လိုအပ်၍တောင်းဆိုသည့်အခါ ဤလက်မှတ်ကို တင်ပြရမည်။

### **APPENDIX (10): Certificate of Boiler Using**



### **APPENDIX** (11): Inspection for Boiler Using

### **APPENDIX (12): Air Quality Analysis Results**

### Ambient Air Quality Results

Pr	oject Address: Plot No. Industrial Myanmar onitoring Date:	467/A, K Zone, 1	a Naung M		Jellies et, Shwe Lin Pan Yangon Region,	
	Industrial Myanmar onitoring Date	Zone, 1				
	Location-1 (		and the second se	ocation	1	
	LTCCHICKET [	Commae of F	actory Building	1.		
No.	Parameters	Unit	Measured Data		ronmental Quality aidelines (2015)	
				Avg. Period	Guideline Value (µg/m <sup>3</sup> )	
1	Oxygen	mol %	21.20	÷.	-	
2	Carbon Monoxide	ppm	0.14	*2		
3	Carbon Dioxide	ppus	278.88		-	
4	Ammonia	ppm	24.78		-	
5	Nitrogen Dioxide	µg/m <sup>3</sup>	79.656	1-hour	200	
6	Sulphur Dioxide	µg/m <sup>3</sup>	0.131	24-hour	20	
7	Particulate Matter PM10	µg/m <sup>3</sup>	218.93	24-hour	50	
8	Particulate Matter PM2.5	$\mu g/m^3$	126.57	24-hour	25	
9	Ozone	µg/m <sup>3</sup>	42.61	8-hour	100	
10	Total Volatile Organic Compound (TVOC)	ppm	0.38345	24-hour		
	Analyzed By	G	ecked By	App	roved By	
Zu		Sec.		33	12	
	Analyzed By		ecked By	Approved By		
Analyzed By Fyw U Aung Kyaw Than Technician 2		Checked By Jg - U Myo Min Heun Technician I		Approved By U Myo Thet Naung Monitoring Supervisor		

# Workplace Air Quality Results

inufacturi M No. 4 Iustrial 2	ing and D 67/A, Ka	istribution Naung 1	of Vario												
st No. 4 Iustrial 2	67/A, Ka	Naung 1		as system		Thai Faster Products and M.K. Company Limited Manufacturing and Distribution of Various Types of Jellies									
	opiect Address: Plot No. 467/A, Ka Naung Min Thar Gyi Street, Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon Region, Myanmar														
terror includes to be been been	23	Location Raw Material Storage Area													
on-4 ( SP on-5 ( SP on-6 ( SP	4) (5) (6)	Adjust Substance Room Adjust Flavor & Color Room Mixing Room Packing Area Boiler Section													
Verage						n ID									
period	Unit	2	3	4	5	6	7								
1hr	ppm	0.317	0.208	0.517	0.933	0.667	0.075								
Shr	µg/m <sup>3</sup>	2.792	1.844	3.875	0.117	0.083	0.009								
	$\mu g/m^3$	2.24	1.719	1.719	2.094	2.271	1.969								
Analyzed By				Approved By											
	on-3 ( SP on-4 ( SP on-5 ( SP on-6 ( SP on-7 ( SP verage veriod	on-2 ( SP-2 ) on-3 ( SP-3 ) on-4 ( SP-4 ) on-5 ( SP-5) on-6 ( SP-6) on-7 ( SP-7) verage veriod Unit 1hr ppm Shr µg/m <sup>3</sup>	on-2 (SP-2) Raw Mate Adjust Su Adjust Su Adjust Fla Mixing Ro Packing A Boiler Ses Verage veriod Unit 2 1hr ppm 0.317 8hr µg/m <sup>3</sup> 2.792	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								
# **Boiler Stack Emission Gas Results**

Project Name: Project Address:	Plot No. 4	167/A, Ka Nau	ation of Various ng Min Thar G Thar Yar Toy	yi Street, Shwe	
	Myanmar	- 41 E - 23	arameters and		negosi,
Location -7	Oxygen (O2), mol %	Carbon moncoiide (CO), mg/m <sup>3</sup>	Carbon dioxide (COs), mol %	Nitrogen oxide (NO)	Sulfur dioxid (SO2)
Boiler Stack	20.5	965	20	0	0
NEQG (Small combustion facilities Emission)	2	а.	÷	650 mg/Nm <sup>1</sup>	2,000 mg/Nm <sup>3</sup>
Analyzed Hafe- U Aung Kyz Technici	w Than	Checked J.S. <sup>-</sup> U Myo Min Technicia	Htun	Approved I VN U Myo Thet N Monitoring Sup	aung

Company Name	Thai Faser Produc	mandM.F.C.	and the last	
Project Name:	Manufacturing and		1993년 1월 28일 - S	Iellies
Project Address:		Ka Naung Min	Thar Gyi Stree	t, Shwe Lin Pan
Monitoring Date	8			
	Site Location-2 (SP-2) Location-3 (SP-3) Location-4 (SP-4) Location-5 (SP-5) Location-6 (SP-6) Location-6 (SP-7)	Raw Msterial Adjust Substa	& Color Room	
ID	Average Noise Level, Lace, dB(A)	Period	Industr	uideline for ial Zone Night)
Sampling Point	76.345 56.59	Day Night	151.013	1BA
Location-5	70.95 (working hour)	1 hr		ideline for 1
Location-7	71.2 (working hour)	1 hr		dBA
Analyzed	i By C	becked By	Арр	proved By
Jan		A.	9	A
0	w Than U M	lye Min Htun	U Myo Monitori	Thet Naung

## **APPENDIX (13): Noise Level Analysis Results**

## **APPENDIX (14): Water Analysis Results**

## <u>Direct from Tube Well</u>

	E	nvir	onmental	Servi	ces Co	. Ltd
	No.115	Kanaung	Min Thar Gyi Road, In	histrial Zone (1 m, Myanmar	), Hlaing Thar Y	ar Industrial City,
	- Name of Client : Thai Fast	ter Produ	ets and M.K.Co., I	td. Date o	of Arrival at L	ab : 31.3.2018
	Date of Collection : 30.3.20					nits : 26.4.2018
	La	borator	y Analysis Resul	ts of Grou	nd Water	
			Analysis Value		inking Water	Standards
Sr. No.	Parameters .	Unit	Type of Water	WHO	EPA	Indian
¥0.	1.0000000000000000000000000000000000000		Tube well	(2011)	(Spring 2012)	Specification(IS :10500,2012)
I,	Aluminum	ppm	0.03	0.2	0.2	0.03
2.	Chloride	ppm	158	250	250	250
3,	Copper	ppm	ND	2	1	0.05
4.	Cyanide	ppm	ND	0.07	0.2	0.05
5.	Mangapese	ppm	ND	0.4	0.05	0.1
б.	pH		6.54	6.5-8.5	6.5-8.5	6.5-8.5
7,	Sulfate	ppm	2.5	250	250	200
8.	Total Alkalinity as CaCO3	ppm	112	- 14	-	200
9,	Total Dissolved Solids	ppm	420	600	500	500
10,	Total Hardness as CaCO <sub>3</sub>	ppm	9	500		200
H.	Total Iron	ppm	<0.1	0,3	0.3	0.3
12.	Turbidity	NTU	1.92	5	1.22	1

Daw Aye Thuzar Hein Technician (Laboratory)

De

Daw Wint Phyu Htway Incharge (Laboratory)

Daw Cherry Thwin Manager (Laboratory)



# Purified Drinking Water from Tap





Green Myanmar Environmental Services Co., Ltd.

## **Cooling Water**

N	ame of Client : Thai Faster Products and	1, 09-508145		g Thar Yar Industrial City, gmescompany@gmail.com al at Lab : 31.3.2018
D	ate of Collection : 30.3.2018	0.12	1.1.1.0.0.0.0000000	of Results : 26.4,2018
Sr.			ults of Waste Wa Analysis Value	ter National Environmental Quality Emission Guidelines (2015)
No.	Parameters	Unit	Type of Waste Water	General
			Cooling Water	Applications
I,	5-day Biochemical Oxygen Demand	ppm	137	50
2.	Ammonia	ppm	ND	10
3,	Chemical Oxygen Demand	ppm	495	250
4.	Chromium (VI)	ppm	ND	0.1
5.	Chromium (total)	ppm	0.03	0.5
6.	Copper	ppm	ND	0.5
7,	Cyanide (total)	ppm	ND	1
8.	Iron (total)	ppm	<0.1	3,5
9.	Nickel	ppm	ND	0.5
10.	Oil and Grease	ppm	ND	10
11.	pН		6,35	6-9
12.	Phenols	ppm	ND	0.5
13.	Sulfide	ppm	ND	1
14.	Total Suspended Solids	ppm	140	50
15.	Zinc	ppm	ND	2
1	ND-Not Detected			
	Analyzed By C	hecked By	Ар	proved By



Green Myanmar Environmental Services Co., Ltd.

## **Boiler Blow-down Water**

~	No.115, Kanaung Min That Tel: 01-3685572, 01-368557 ame of Client : Thai Faster Products and	r Gyi Road, Ya 1, 09-50814	ngon, Myanmar 51, 09-5122448 E-mail: g	That Yat Industrial City,
D	ate of Collection : 30.3.2018			of Results : 26.4.2018
Sr.			sults of Waste Wat Analysis Value	National Environmental Quality Emission
No.	Parameters	Unit	Type of Waste Water	Guidelines (2015) General
			Boiler Blow-down	Applications
1.	5-day Biochemical Oxygen Demand	ppm	ND	50
2	Ammonia	ppm	ND	10
3.	Chemical Oxygen Demand	ppm	25	250
4	Chromium (VI)	ppm	ND	0.1
5.	Chromium (total)	ppm	ND	0.5
б.	Copper	ppm	ND	0.5
7.	Cyanide (total)	ppm	ND	1
8.	Iron (total)	ppm	0.5	3.5
9.	Nickel	ppm	ND	0.5
10.	Oil and Grease	ppm	ND	10
11.	pH	+	12,78	6-9
12,	Phenois	ppm	ND	0.5
13,	Sulfide	ppm	ND	1
14.	Total Suspended Solids	ppm	610	50
15.	Zinc	ppm	0.03	2
٨	ID-Not Detected			
	Analyzed By Cl	hecked By	App	proved By
		of.		X



# Factory Inside drain channel

N	Tel: 01-3685572, 01-368557	Yan 1, 09-508145	gon, Myanmar 1, 09-5122448 E-mail:	
	ate of Collection : 30.3.2018			of Results : 26.3.2018
	Laboratory An	alysis Res	ults of Waste Wa	iter
Sr.	Parameters	Unit	Analysis Value	National Environmental Quality Emission Guidelines (2015)
No.	a di ameter s	Cint	Type of Waste Water	Food and Beverage
			ရွန့်ပစ်ရည်	Processing
1.	5-day Biochemical Oxygen Demand	ppm	2170	50
2.	Chemical Oxygen Demand	ppm	5190	250
3.	Oil and Grease	ppm	6	10
4.	pH	•	4.36	6~9
5	Total Suspended Solids	ppm	320	50
	لمح Daw Aye Thuzar Hein Daw W	hecked By	ltway Daw	Cherry Thwin er (Laboratory)



# **APPENDIX (15): Wastewater Analysis Results**

#### **Processing wastewater**

	Tel-00 807 978 296.00	Thar Gyi Ro	Yangon, Myanina	w (1), Hlwing Thar Yu ar	Industrial City,
	WASTEWATER	QUALI	TY TEST R	ESULT FORM	A
100	ame of Customer: Thai Faster Produ IK Co., Ltd.	cts and	Date of Sam	ple Collection: 14.6	2022
Na	ame of Person:		Date of Sam	ple Arrival to Lab:	14.6.2022
Co	ontact		Date of Issue	d of Result: 1.7.20	22
	WASTEWATE	R QUAL	ITY ANAL	YSIS RESULT	NEQG (Food and
Sr. No.	Parameters	Unit	Analysis Values	Measurement Range of Methods	REQG (Food and Beverage Processing)
Jelly	Product Processing 30000				
1.	5-day Biochemical Oxygen Demand	mg/l	2060	30	50
2	Chemical Oxygen Demand	mg/l	5070	30	250
3.	Oil and Grease	mg/l	5	5	10
4.	pH		4.08	0.1	6~9
5.	Total Nitrogen	mg/l	8	5	-
б.	Total Phosphorous	mg/l	2.8	0.02	2
7.	Total Suspended Solids	mg/l	38	1	50
	Analyzed By	Che	ecked by	Appro	wed By
	nya		P.	C	5
	U Myo Min Ko	UThe	Min Paing	Daw Ave 1	huzar Hein



#### **Influent of Wastewater Treatment Plant**

	WASTEWATER	QUALI	TY TEST R	ESULT FORM	h
	ame of Customer: Thai Faster Product IK Co., Ltd.	s and	Date of Sam	ple Collection: 14.6	2022
N	ame of Person:		Date of Sam	ple Arrival to Lab:	14.6.2022
C	entact:		Date of Issue	ed of Result: 1.7.20	22
	WASTEWATER	OUAL	TY ANAL	VSIS RESULT	
Sr. No.	Parameters	Unit	Analysis Values	Minimum Measurement Range of Methods	NEQG (Food and Beverage Processing)
Influ	ent of Wastewater	v	2 2	a	9 9
1.	5-day Biochemical Oxygen Demand	mg/l	380	30	50
2	Chemical Oxygen Demand	mg/l	1260	30	250
3.	Oil and Grease	mg/l	<5	5	10
4.	pH	52.0	4.32	0.1	6~9
5.	Total Nitrogen	mg/l	0	5	-
6.	Total Phosphorous	mg/l	0.15	0.02	2
7.	Total Suspended Solids	mg/l	24	1	50
	Analyzed By		ecked by		wed By

Thai Faster Products & M.K Co., Ltd.

တာအမှတ်/Reference Number: EL (M)-R / 67 နေ့စွဲ/Date: 21 <sup>st</sup> June , 20 <b>ောက်ခွဲစစ်ဆေးမှုအစီအရင်ခံတ/Laboratory Analysis Report</b> နမူနာတာတွင် /Sample Profile <u>နမူနာတာတွင် /Sample Name</u> Influent of Waste Water နမူနာတာမှတ် / Sample ID 66 နေ့ရာ (ရှိနေ့ထိ) Yangon ငတ္တနီတွင် Location (Township) Yangon Lattude နေ့ရာ (တိုင်းရြည်နှစ်) Yangon Location (Region/State) 14.6.2022 အဖွဲ့တာတွင် /Sender Name Thai Faster Product, and M.K Co.Ltd., နမူနာတတောင်မူမိန့် (စန္န ရာရီ) 14.6.2022 အဖွဲ့တာတွင် /Sender Name Thai Faster Product, and M.K Co.Ltd., နမူနာတတောင်မူမိန့် (စန္န ရာရီ) 14.6.2022 အဖွဲ့တာတွင် /Organisation Thai Faster Product, and M.K Co.Ltd., နမူနာတတောင်မူမိန့် (စန္န ရာရီ) 20.6.2022 (This laboratory analysis report is based solely on the sample submitted by the customer) (ဤတက်ခွဲစစ်ဆေးမှုဆမီရှင်စကသည့် တေးရှိသူမှုနှိုတောင်ခဲ့သည့်နေ့မှုနေကိုသာအခြောင်တာပါသည်။) Analysis Results/ဝစ်သေပ်ရွက်အခရာဖြ
နမ္စနာအမှတ် /Sample Name         Influent of Waste Water         နမ္စနာအမှတ် / Sample ID         65           စနှစ္ (ရှိနှမ်)         Yangon         လေရွိတွေ၆         Location (Township)         Lattude         6           စနှစ္ (ရှိနှိန်)         Yangon         Lattude         Cooglog6         1         6           စနှစ္ (ရှိနိုန်)         Yangon         Lattude         6         6         6         6           စနှစ္ (ရှိနိုန်)         Yangon         Lattude         6         6         6         6           Location (Region/State)         Yangon         Longitude         6         6         6         6           ocaligoseogb /Sender Name         Thai Faster Product, and M.K Co.Ltd.,         နမ္စနစ္စစ္ေတာလ်ပ္ရရန္နန် (စန္နန္ စရီ)         14.6.2022         14.6.2022           sageosogb /Organisation         Thai Faster Product, and M.K Co.Ltd.,         Sampling Time (Date, Time)         20.6.2022           conforgula / Contact         09-976543060,         နမ္နနစ္စစစတောက်ရွိရန်န် (စန္န စရီ)         20.6.2022           (This laboratory analysis report is based solely on the sample submitted by the customer)         (ဤစာတီခွိစစစစေတာပ်ရာမှနစ္စစစ်စတောက်ရာမှနစ္နနစ္စစစ်တာပရာမှနစ္နနစ္စစစ်တာပရာမောက္ခရီစတာပရာမောက်ရာမောက္ခရောက်ရာမောက္ခရနစ္စစစ်တာပါရည်မှနစ္န         6
နေရာ (ဖြို့နယ်) Location (Township)         Yangon         လာမ္တီတွင် Lattude           နေရာ (တိုင်းရြည်နယ်) Location (Region/State)         Yangon         Lattude           နေရာ (တိုင်းရြည်နယ်) Location (Region/State)         Yangon         Source (Good Location (Region/State)           လေးခိုသူအမည် /Sender Name         Thai Faster Product, and M.K Co.Ltd., အခွဲအတွည် /Sender Name         Thai Faster Product, and M.K Co.Ltd., အခွဲအတွည် /Sender Name         Sampling Time (Date, Time)           လက်တွယ်ရန် /Contact         09-976543060, Laboratory.gmesigmail.com         Antving Time (Date, Time)         20.6.2022           (This laboratory analysis report is based solely on the sample submitted by the customer) (ကြမ္မာကိုခွဲစစ်တော့မှုအစိုနှင့်စစ်ဘာသို့ စပ္ပင်္သိသူမှုနှိုစတောင်ခဲ့သည့်ခုမှုနောကိုသာအစရြစ်ထားပါသည်e)         20.6.2022
နေရာ (တိုင်း(ပြည်နှင်)) Location (Region/State)         Yangon         လောင်ထိုတွင် Longitude           စမေမိုသူအမည် /Sender Name         Thai Faster Product, and M.K.Co.Ltd., အခွဲအတွင် /Organisation         Faster Product, and M.K.Co.Ltd., Thiai Faster Product, and M.K.Co.Ltd., Sampling Time (Date, Time)         14.6.2022           စတ်လွယ်ရန် /Contact         09-9716543060, Iaboratory.gmest)gmail.com         နမူနာတောက်ရှိရန် (ရေး နာရီ) Arriving Time (Date, Time)         20.6.2022           (This laboratory analysis report is based solely on the sample submitted by the customer) (ကျွှ်ဓာတ်ရှိစစ်စပေးမှုအမိရှင်စ်စာသည် စပေးရှိသူမှင့်စတောင်ခဲ့သည့်နှစ္စနာကိုသာအစေဖြစ်တာပါသည်*)         20.6.2022
စပအမ္မီသူအစပ္နည် /Sender Name         Thai Faster Product, and M.K.Co.Ltd., အဖွဲ့အစပ္နည် /Organisation         နမ္မာ့စစကာက်လူရှိန် (ဝန္မ နာရီ) (Organisation         14.6.2022           အဖွဲ့အစပ္နည် /Organisation         Thai Faster Product, and M.K.Co.Ltd., OP-976543060, laboratory.gmestigmail.com         Sampling Time (Date, Time)         14.6.2022           (This laboratory analysis report is based solely on the sample submitted by the customer) (ကျွံတက်ရွိစစ်စအေမှုအစီရစ်စကာသည် စပရိုသူမှုပို့စတောင်ခဲ့သည့်မှုမှုနာကိုသာအစေဖြစ်တာမါသည်)         20.6.2022
အခွဲအစည်း /Organisation         Thai Faster Product, and M.K.Co.Ltd.,         Sampling Time (Date, Time)           လက်တွယ်ရန် /Contact         09-976543060,         နမူနာဓရာက်ရှိရှိန် (ရေး နာရီ)         20.6.2022           iaboratory.gmesi@gmail.com         Annving Time (Date, Time)         20.6.2022           (This laboratory analysis report is based solely on the sample submitted by the customer)         (ကျွန်တတ်ခွဲစစ်ရေအမှုအစီရှင်စတာသည် ပေးရှိသူမှင့်ရတောင်ခဲ့သည့်နမူနာကိုသဘာအရြှော်တာပါသည်•)
laboratory.gmesiligmail.com Aniving Time (Date, Time) 20.6.2022 (This laboratory analysis report is based solely on the sample submitted by the customer) (ဤစာတ်ခွဲစစ်ဆေးမှုအစီရှင်စံစာသည် ဖေးစိုသူမှုမှုစတောင်ခဲ့သည့်မှုမှုနာကိုသာအခြေခံထားပါသည်။)
(This laboratory analysis report is based solely on the sample submitted by the customer) (ဤဘော်ခြံစစ်စဆေမှုအစီရခ်စံစာသည် ဖေးရှိသူမှင့်စဆောင်ခဲ့သည့်မှုမှုဘော်သာအခြေစံသားပါသည်။)
1 Total plate count (CFU/ml) Total plate count 0
1 method 0 Total coliform count (MPN/100 m0 Most Pmbable
2 (Presumption test) 150 Number method 0
3 Total faecal collform count (MPN/100ml) Most Probable 0 (Presumption test) Number method
4 Total coliform count (CFU/ml) Eosin Methyl blue (Confirm test) agar plate test 0
5 Complete test for coliform bacteria Gram staining test -
6 Total coliform count (CFU/ml) 3M Pate count 0
Total E.col court (CPU/m) 3M Pate count

## **Effluent of Wastewater Treatment Plant**

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	WASTEWATER	QUALI	TY TEST R	ESULT FORM	4
	ume of Customer: Thai Faster Produ .K Co., Ltd.	cts and	Date of Samp	le Collection: 21.7	7.2022
Na	ume of Person:		Date of Samp	le Arrival to Lab:	21.7.2022
Ce	entact:		Date of Issued	d of Result: 3.8.20	22
	WASTEWATE	POLA	FTV ANALY	SIS DESULT	
Sr. No.	Parameters	Unit	Analysis Values	Minimum Measurement Range of Methods	National Environmental Quality (Emission) Guidelines Food and Beverage Processing
Efflu	ent of Wastewater				
1.	5-day Biochemical Oxygen Demand	mg/l	170	30	50
2,	Chemical Oxygen Demand	mg/l	580	30	250
3.	Oil and Grease	mg/l	<\$	5	10
4.	рН	аў. 1	6.95	0.1	6~9
5.	Total Nitrogen	mg/l	<5	5	10
6.	Total Phosphorous	mg/l	0.02	0.02	2
7,	Total Suspended Solids	mg/l	22	1	50
8.	Temperature	°C	26	1	< 3 <sup>b</sup>
	Analyzed By	Ch	ecked by	Аррг	oved By
	Mye	9	<u>}</u>		5
	U Myo Min Ko Lab Technician (Laboratory)		t Min Paing isor (Laboratory		Thuzar Hein (Laboratory)

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Ť	අංකෘත් /Sample Name	A	nal Outlet		နမူနာအမှတ် /			70	5
	ဓနုရာ (မြို့နလ်) Location (Township)	Hai	ng Thar Yar		හලු Latit				
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	Location (Region/State)				Longi				-
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2	စဖွဲ့အစည်း /Organisation စာက်သွယ်ရန် /Contact	Thai faster Pro	ducts and M.R Co.	,Lm.	Sampling Time			102250	2
	according to start	09-	976543060		Arriving Time		27.7	2022	2:0
Sr.	Quality Param		Results		Method	Drinking Stan	dard	Rema	inks
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÷		(1999) - 19			method st Probable	. 364) 	-	<u> </u>	- 0
2	Total coliform count (MPI (Presumption test)	4/100 mi)	>1100	100	nber method	0		2	0
3	Total faecal coliform cour	it (MPN/100ml)		1.5	est Probable	0		1	Ĩ
-	(Presumption test) Total coliform count (CFU	limit			nber method n Methyl blue	C.	-	-	- 0
۰,	(Confirm test)	(		195	ar plate test	0			
5	Complete test for coliform	bacteria		Gran	n staining test	- 20			
6	Total coliform count (CFU)	/mil}		38	f Pate count method	٥		1	Ĵ
	Total Ecol count (CFU/m	0		314	Pate count method	Û			
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oố Te Ma Re	#၁၀၀၆ဠီ# sted by <i>Ubgy</i> y Myat Nyein	Chedo ) May Za	ed by Joy w ch Assistant		Approve Ni Tar N	ed by			

# **APPENDIX (16): Soil Quality Analysis Results**



	<u>En</u> No.115, KJ Tel: 01-368: مۇلخەردۇرۇ)000000	Freen         Myan           vironmental Services           anaung Min Thar Gyi Rosd, Industrial Zone (1), Hlaing Yangon, Myanmar           5372, 01-3685571, 09-5081451, 09-5122448           E-mail: p           p\$φφφφφφφφφφ           p\$φφφφφφφφφ           war og wowshand of the second of th	Co., Ltd g Thar Yar Industrial C gmescompany@gmail
			<b>သူများစာရင်း</b> ခုနှစ်၊ ဩဂုတ်လ ( 🗲
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20	ပတ်ဝန်းကျင်စီမံ	အကောင်အယည်ဖော်ဆောင်ရွက်နေသည့် ဖျယ်လီမှိုဗုံထုတ်လုပ်မြန် ဖြူးရေးလုပ်ငန်း စန့်ခွဲမှုအစီအစဉ်အစီရင်စံတဆွေးနွေးပွဲသို့ တက်ရောက် ရက်ခွဲ ။ ျ၂၀၁၈	<b>သူများစာရင်း</b> စုနှစ်၊ ဩဂုတ်လ ( ၄
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## **APPENDIX (18): Suggestions Letters of Public Consultation Meeting**

ထိုင်ဆက်လာကုန်သည်လုပ်နန်းနှင့်M.K. ကုမ္ပ၏လိန်သက် ၏ ခြေကွက်အမှတ် ငှမ်ရ/က ထိုင်အဘီလောကုန်ထုတ်လုပ်နေနှင့်MK ကုန္ဒ၏လိန်တတ် ဆံ ခြေတွက်အနတ် ငှမ်ရ/တ ကနောင်ခင်းသားကြီးလန်း စရွှလင်ခန်းစက်ရှာနန်း လိုင်သာလာမြို့နယ် ရန်ကုန်တိုင်းသောကြီးတွင် ဘီးကိုကားသို့လိုကုန်နာ ထိန မြိုးသားသို့ဂ နိုက္ခကားနောဘီတူမွာ အဲဘက်ကားသိမင်းဆာ အကောင်အသည်ကောဆောင်ရွက်နေသည့် အကောင်အထည်စော်ဆောင်စွက်နေသည့် အမ်ကြဆ ဖြက်လက်လန်မှန်သိပ္ပာတွေရှိ မြေးမှက်ထားရှိစီကိုသူ လည်းရာ ဦကံလက်လန်းနိုဘဲကုရအခြံ နံခြပ်ကုစ်ထုရစ်တိုယ်ရာ ခုခံနှင့်ကိုက်နောက်နှင့်မြစ်ဆားနိုင်ခံကြောင့်နှင့်ကူကြီးလ်းရှိ၏ အကြံမြွတ်မှုကို ဖြစ်နိုင ခန်ဆိုနှင့်လည်း အကြံများသားနိုင်ငံခြက်နှင့်လူကြည်နှင့်ကျက်မှ အကြံမြက်များကို စီလံနိုင် တာဝန်ရှိသူများနှင့် တစ်ပြားရွေးခန္ဓာအသွားမည် ဖြစ်ပါသည်။ တာဝန်ရိသူများနှင့် တစ်ပြားဆူးနေးလေသူအလိ ဖြစ်ပါသည်။ eβ တွေးနေအကြံမြခုက် eδ ရောနာက်မြစုက် an antigrasient grup ages in making googings may and good music was able T. Select 301:30 800: UNI 1 mil no 100 100 100 aple in appression + of a buy was a provide the same of a construction of the provided of the pro NENGER PERSON DIE A. Balanscontor roofuerb ranger အမည် 69000023 အမည် φαδάσιδαιφαί an(\$2) Oderad ອຸດຈິມຸ່ດາຣິສອຸດຈິ 9000 I 95 7788086 ရာထူး 09 စုန်းနံပါတ် bass il. (1) with applied 09-40049852 75-1305 ဆက်သွယ်ရန်လိမ်တ ສາກົວຈູເວັຊໂດຈິໂອາ ထိုင်ခတ်တောကွန်ထုတ်လုပ်ငန်းနှင့်M.K. ကုန္တကီလိမ်တတ် အံ ခြေတွက်အမှတ် ၄၆၇/က ထိုင်အတ်စတာကုန်ထုတ်လုပ်ငန်းနှင့်M.K. ကုမ္ပကီလိစ်တက် အံ စမြကွက်အမှတ် ငှမ်ဂု/က၊ ကနောင်ခင်သားကြီးလဲနေ စစ္စလင်နောက်မှုနှန် လိုင်သားယာမြို့နယ် နှေ်တုန်ကိုင်အသောကြီးတွင် အတောင်အသည်စက်ဆောင်ရွက်နေသည့် ကနောင်မင်းသားကြီးလင်း ရွှေလင်ဝန်းစက်မှုရုန်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် အကောင်အသည်စော်ဆောင်ရွက်နေသည့် အည်းကိုဆုံးထဲတဲ့အချိန် ဖြားခေးကိုင်နီးနှင့်တက်သက်၌ အကြီးများ ကွယ်လီနိုးစုံထုတ်လုပ်ခြန် ဖြားနေလုပ်ငန်းနှင့်ဖတ်သက်၍ အကြံပြတ ခင်းနီလွန်လင်ရာ အကြံမြာခဲ့သားနိုင်ပါးကြင်းနှင့်လူကြီးပင်းကို၏ အကြံမြဲရက်နားကို စီပံကိန်း ရင်းနီးပွင့်လင်းစွာ အကြံပြားသေားနိုင်ပါတြောင်းနှင့်လူကြီးမင်းဝဉ်၏ အကြံပြုချက်များကို စီမဲကိန်း တာဝန်ရှိသူများနှင့် တင်ပြင်ဆွာနေးပေသူအနည် ဖြစ်ပါသည်။ တာဝန်ရှိသူများနှင့် တဝ်ပြဆွေးနွေးပေးသွားပည် ဖြစ်ပါသည်။ ဆို လေးနအကြံပြလ် စဉ် လွေးနေးအကြံပြုချက် Margan & Balow & Ball and Ball and Ball and Ball · 60m 80 9- 1 01 5: 78 [ 4]: 65 4 5 Bary Benghr of to proto Semech 630256, 1 out i gloratouit mus el: 1 al al el: 1832 al. 836015. 2 m Veronteolt Spor Sm ලාර්ගෙන 15 လက်မှတ် 1.60 6 1 GER කපැරි အမည် မှတ်ပွဲတင်အမှတ် မှတ်ပုံတင်အမှတ် ရာထူး 600g: al-files ဖုန်းနံပါတ် 25 GEWIF 26/240 whywyshitten and E ဆက်သွယ်ရန်လိပ်စာ margoria 375 ROS \$ 17205

ထိုင်ခတ်တောကုန်ထုတ်လုပ်နေနှင့်MK. ကုမ္ပကီလိမ်တက် ၏ ခြေတွက်အမှတ် ငှမ်ဒူ/က ထိုင်ခတ်တောကုန်ထွတ်လုပ်ငန်းနှင့်M.K. ကုန္ဒကီလိုင်တက် က ခြေကွက်အမှတ် ၄၆ရု/တ ဘနောင်မင်းဆည်ရှိသို့ ရန်ကိုန်လိုက်နောက်ချင်း ကိုက်သားသည်။ သူ့ကျင်းဆည်ဆက်သည် အလက်သားသို့သည်ဆက်သောင်ရွက်နေသည့် ကနောင်ဆီသားကြီးလန်း ရွှေလင်ခန်းကိုမှုန်း လိုင်သာယာမြို့နယ် နန်ကုန်တိုင်းဒေသကြီးတွင် ອຈາກຮ້ອຍກຸໂອກະອາຣິຊາກ໌ຊາກູກູ້ ကွယ်လိုနှစ်ထုတ်လုန်ခြန် ခြံစာနေလုပ်ငန်းနှင့်တက်သက်၌ အကြံမြတ ကွယ်လို့နှစ်ထွတ်လုန်ခြင်မှုနေသူကုန်ရော်နိုင်ပြီဟုလ်ထုန်ရှိတယ်ရာ ခင်ခံရှင်လမ်းမှာ အကြိမ်ခရသာနိုင်ပဲခကြာင်ဖုင့်လူကြီမင်တို့၏ အကြိမ်ရက်မှားကို စီလံနိုး ရင်နီနှင့်လင်ရာ အကြံမြဲခဲ့သေးနိုင်ငံကြောင်နှင့်လူကြီးင်းကို၏ အကြံမြင့်လုံးကို စီးကိန်း တာဝန်ရှိသူများနှင့် တစ်ပြားဆွာနေအဘွေးရည် ဖြစ်ပါသည်။ တာဝန်ရှိသူများနှင့် တင်ပြဲရေးနေးကွေအနည် ဖြစ်ပါသည်။ ą eδ ခွေးနေးအကြံပြုခုက် စစ္စားနေးအကြံပြခုတ် Prome annay Ward States on p Jorog: mit sectional contractions 505.75.627 g Email anol in resorren 6065072000 EHLA იირიირ contracts. 9. 2. 5 220 mups ssuph ly april 20 ບຸດກິບຸ່າກຣ໌ແລະດີ မှတ်ပုံတင်အမှတ် 12 ans along 10003 \$5000 19 420001113 b 3 6 3 Handa pisidos 95:2005 7810 met 601:40 2015 ລາຍ ເພື່ອງ ເພື່ອງ ເພື່ອງ ເພື່ອງ ဆက်သွယ်ရန်လိပ်စာ march ထိုင်းတစ်တာကုန်ထုတ်လုပ်ငန်းနှင့်MK. ကုမ္ပကီလိစ်ဘက် ၏ မြေကွက်အမှတ် ၎၆၇/က ကနောင်မင်းသားကြီးလမ်း၊ ရွှေလင်ငန်းစက်ဖွဲ့ရန်၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် ထိုင်အတ်တောကုန်ထုတ်လုပ်ငန်းနှင့်M.K. ကွမ္မကီလိန်ထက် အံ မြေကွက်အမှတ် ၄၆၇/တ တနားလိုက်နောက်နဲ့ကုန်နာ ကိုနောက်သောကို နော့နက်စမန်တဲ့တူခဲ့ အိပ်ကွန်ကိုးတွင် အကောင်အထည်ဖော်ဆောင်ရွက်နေသည့် ອຈາກຮ້ອດກຸໂອກໍອອກຮູ້ອຸກໍຣະວາກູໂ ကျယ်လီမျိုးပုံထုတ်လုပ်မြန် ဖြားရေလုပ်ငန်းနှင့်မတ်သက်၍ အကြံပြုစာ ရယ်လို့စုန်ထုတ်လုပ်ခြန် ဖြစ်စုနာပြင်နီးနှင့်တက်သက်၌ အကြံမြတ ခုင်းနီးပွင့်လင်းမွာ အကြံပြခရာသားနိုင်ပါကြောင်းနှင့်လူကြီးပင်းတို့၏ အကြံပြချက်များကို စီမံကိန်း နင်ခန့်ချင်ကို အကြားရောက်ခန်းခြင်းနှင့်လူကြီးခန့်ကိုကြီး အကြားရန် နိုင်ငံနှင့် တာဝန်ရှိသူများနှင့် တင်ပြသွေးနွေးပေးသွားမည် ဖြစ်ပါသည်။ တာဝန်ရှိသူများနှင့် တစ်ပြားဆွာနေအားသွားည် ဖြစ်ပါသည်။ oß αş ထွေးနွေးအကြံပြုချက် ရော့စနားကြေရတ် 308 ~ 306 00 00 00 00 22 (yng Dor), major 500; 30098; MEN. EDG offin anoni in an an agree a te ×8982 เมื่อ 32 อโม เป้อาเภร Bran 1800 no solo and and a solo and subge ; on Gon worder mys 30 02 2 2 20 Colored the 1 2 20 00 2 2 2007 00 G. O 2 3 8 10 5 cp Cash sug she she all she gue for garage Nones more and now in with the same : Burnesson to Exart agrit & B m rochych လက်မှတ် MESQC SYN 8:60 25 8: 33425 కాలన్ 29100025202209 ყინტიენდიცის W.K.B. Jezbao မှတ်ပုံတင်အမှတ် 1000 ရာထူး Bolo 4:40 08-423121530 09.444174780 ဖုန်းနံပါတ် antryalyholon adject proceed from it ဆက်သွယ်ရန်လိပ်စာ -





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# **APPENDIX (20): Suggestion Letters of Employee Discussion Program**

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Thai Faster Products And M.K.Co., Ltd. ລູໂດງຊົດຖີວິຂອວວເກີຍ ເຖິດົວການກໍຊີ, ຣຸດລົ ອຽດວັດຊົອດກິຊຸດຣ໌ ເ	Thui Faster Products And M.K.Co., Ltd. ອຸລິດງລໍດັ່ງວິເອວເລເຫຼີສ ດຈິດົວການກຍິງ, ລຸດວ່າ ອອກວ່າວລົມອາກິດູອຸລົ :
ကနောင်မင်းသားကြီးလန်း အမှတ်(၄၆၃/က) တွင် အကောင်အထည်း၏ ဆောင်ရွက်လွက်ရှိသော	ကနောင်မင်းသားစိုးကြီးလန်း အမှတ်(၄၆၄/က) တွင် အကောင်အထည်စော် ဆောင်ရွက်လွက်ရှိသော
ဖွယ်လီစာအသာက်ကုန် အချီးချီးထုတ်လုပ်ခြင်းနှင့်စပ်လူဦး၍ အကြံပြတ	ကွယ်ကီစာသောက်တုန် အချိန်ဖို့ထုတ်လုပ်ခြင်နှင့်စင်ဖွင့်၍ အကြံခြား
A SCOLOGY AND A SAME AND A SA	
ာ၊ လုပ်ငန်းခွင်ကျန်ဆာရေးနှင့်သေးအန္တရာယ်ကာကွယ်ရေးမျှည်ဆွားနှင့်ပေံလည်း၌အကြံပြဲခုက်	ာ၊ လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဆားစန္တရာယ်တာကွယ်ရေးဖရည်းမှားနှင့်စပ်လည်း၌အကြံပြုခုတ်
(က) လုပ်ငန်းနှင်ဆက်ဆော့ရပ်မှား	(က) လုပ်ငန်းနှင်အကာအတွယ်ပန္သည်များ
(စ) သောက်ဆုံးရေ	(a) consider - 67 227 - 0
(n) miletaling om Broker	(o) သန်စစ်နေးနား
(ဃ) ဆေးကြောသန့်ရှင်အဖုနေစ်	(ဃ) စောကြောသန့်ရှင်းရောနစ်
၂။ လုပ်ငန်းခွင်အလုပ်လုပ်ကိုဝ်မှုအခြေအနေအစဒီအကြံမြရက်	ကုန်းနှိုင်အလုတ်လုတ်ကိုန်အခြေအနေအအခါကို ကိုလိုက်တိုက်ဆိုနေသိတ်။ ။
(m) ဆူညီထံမှာအခြောနေ (-)	(m) matrix amotions No 7
	but Windows
(a) အနီအဘယ္(အနီးအငွေ မူတ )	(e) အန္ဒံအသတ်/အနီးအ၀ဋ္ဌ များ
(a) လိုင်နီးနှင့်အလင်းဆင်	(n) လုန်ငန်းနှင့်အလန်းရောင်
(m) anhandrangaet	(m) anteanteander Card
(c) လေလီလေထွက် တိုက်ကို (c)	(c) erosõerongoo
and the second se	(c) a occarded
ခု ကုပ်ငန်းစွင် ကူမှုဆက်ဆံရေအခြေအနေအခေါ်အကြံမြစွက်	ခု၊ လုပ်ငန်ရင် လူမှုဆက်ဆံနေအခြေအနေအသံ အကြံခြရက်
	C. C
(က) လုပ်ငန်းနှင်ကြီးကြပ်သူ (ခိန်အထက်) တို့ကာလိုး	(က) လုပ်ငန်းနှစ်ကြီးကြပ်သူ (ခိစ်အသက်) 👘 🖉 🖉 🖄
(e) လုစ်ဆက်နိုင်တွင် (အဆင့်တူ)	(a) whether the month in the month is a second seco
(e) လက်အောက်ဝန်ထမ်း (မိမိလက်အောက်)	(၈) ကမ်းဆက်နေဆန် (ဆိုလက်ဆာက်) 👘 🔍 🕞 က 🧲
	(n) crosses (red order)
ဗဲ အမြားအကြံခြနက်များ	မှ အမြားမကြော်မှုက်များ
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a past of the second	
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Level 1 Level 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Strateformer C/ 010 10 Car state
now	αρίωση <u>6 12</u> ωτησοφορίου <u>6 3 μοθε στη</u>
	and a second a second a second a second a second a second a
(m) ကုမ်ငန်းနှင်အကာအတွယ်ပဋ္ဌင်းမှား	(က) လုပ်ငန်းခွင်အကာအကွယ်ဖည်းမှာ (က) သောက်သုံးရေ စိန်သည် (လ) သောက်သုံးရေ စိန်သည် (လ) သောက်သုံးရေ စိန်သည် (လ) သည့်သများအကြောင်း (လ) သည့်သများကိုသည် (လ) သည့်သများကိုသည် (လ) သည့်သများကိုသများကိုသများကို (လ) (လ) (လ) သများကိုသများကိုသများကိုသများကိုသများကို (လ) (လ) သများကိုသများက
	(c) 00006000gr5
ခု ကွမ်ငန်နှင့် ကျမားကိစ်စနေအခြေအနေအခေါ်အကြီးမြက်	(c) လောင်လော့က်
ာ လုပ်ငန်းခွင်ကျားတတ်ဆံမောာာခြောနေအာက်အကြာမျက် (m) လုပ်ငန်းခွင်ကြီးကြားသူ (ဆိတာတင်)	(c) လောစ်လေဆွက် ခု လုစ်ငန်ခွစ် လူမှဆက်ဆံခော့ခြေအနေအာပါအကြံမြဲရက် (m) လုစ်ငန်ခွစ်ကြီးကြစ်ရ (စီစီအာဏာ်) 57 ခုလိုင်ပြာပြသည်
ခု ကု <b>ပ်ငန်းခွင် ကူမှာတိတ်ခေ့ဆာခြဲအနေအာပ် အကြံပြရ</b> က် (တ) ကုပ်ငန်းခွင်ကြီးကြပ်သူ (စီဖီအထက်) <u>ကောက်</u> း (ခ) လုပ်ခော်ကိုင်ခက် (အဆင့်သူ)————————————————————————————————————	(c) ဆလာစီလာဆွက် ခု လူစီငန်းနှင့် လူနားတိဆံရေးအခြေအနေအမေါ် အကြံမှုရက် (m) လုပ်ငန်းနှင့်ကြီးကြားမှ (ဆိအာလက်) ဘာချင် နေပြာ ပါ သည် (m) သန်းတိုက်ရက် (အာက်က)
ာ လုပ်ငန်းခွင်ကျားတတ်ဆံမောာာခြောနေအာက်အကြာမျက် (m) လုပ်ငန်းခွင်ကြီးကြားသူ (ဆိတာတင်)	(c) ဆောလ်လာဆုတ် ခု လုပ်ငန်းစွင် လူနားတစ်ဆံရေးအခြေနာအနေ အခြေနာ့်ချက် (က) လုပ်ငန်းစွင်ကြီးရာပ်သူ (ဒီ(ဘာတက်)
ခု ကုပ်ငန်းခွင် ကူဆာက်ဆံရောအခြဲအနေအပေါ် အကြံပြုခွက် (က) ကုပ်ငန်းခွင်ကြီးကြပ်သူ (စိဖိအထက်)————————————————————————————————————	(c) လေစစ်လေထွက် မြို့ ခု၊ လုစ်ငန်းနှစ် လူမှာတင်ဆံရေးအခြေအနေအခေါ် အကြံမြမှတ် (m) လုစ်ငန်းနှစ်ကြီးကြစ်ရာ (စိန်းအထက်) ဘေး ခတ်ငြေပွဲ ပါ သူသည် (ခ) လုစ်တော်ကိုစ်စက် (အဆင့်တူ) အေး ကျော်ကြောက် ကြီး အကြံကြန်း
సా గురుకేళ్లర్ గ్రామానికుండావింద్రోవికి ఇంటి ఇంట్రోపైట్లాన్ (m) గురుకళ్లరిప్రోట్రార్లు (జిలియాన్)	(c) လောမ်လောရာက် မြန်မာနေအမေါ် အကြံမြနက် ခုာ လုပ်ငန်းနှင်ကြိုကြင်းရ (ဆိုအလက်) အကြံမြနက် (m) လုပ်ငန်းနှင်ကြိုကြင်းရ (ဆီအလက်) အကြောင်းနှင့် ပြီလက် (m) လုပ်ဆောက်နိုင်စက် (အဆင့်တူ) အကြောင်းနှင့် ပြီလက်အောက်) ကြောင့် ကြီး
సా గురుక్తుర గ్రామానికుండావింద్రోవిండావించి ఇర్రోప్రోత్రాన (m) గురుక్తురోవోయైర్లు (జెలియి)	(c) လောမ်လောရာက် မြန်မာနေအမေါ် အကြံမြနက် ခုာ လုပ်ငန်းနှင်ကြိုကြင်းရ (ဆိုအလက်) အကြံမြနက် (m) လုပ်ငန်းနှင်ကြိုကြင်းရ (ဆီအလက်) အကြောင်းနှင့် ပြီလက် (m) လုပ်ဆောက်နိုင်စက် (အဆင့်တူ) အကြောင်းနှင့် ပြီလက်အောက်) ကြောင့် ကြီး
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ခု ကုပ်ငန်ခွင် ကူမှာတိဆံနောာမြားနေသာပါအကြာများ (m) ကုပ်ငန်ခွင်ကိုကြပဲသူ (စိမ်းလတင်) ကောင်း (e) လုပ်တောကိုင်စက် (အဆင့်သူ) စကောင်း (o) လက်အောက်ငန်တန် (စိမ်းလက်အောက်) စကောင်း မှ အီကြာအကြံနြောက်နာ မှ အီကြာအကြံနောက်နာ ကက်နတ် စကား ရာကုန္ <u>အကိုလိုင်း</u> ကည်	(c) 2000 2000 3 20 000 2000 2000 2000 2000 2000 2000 2
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ခု ကိုင်န်ခွင် ကူမတာစီဆဲဆောင်ကြာနေသတ် အကြံမြက် (၈) လုပ်ငန်ခွင်ကြီးလူ (ဒီအလာက်) ကောင်း (၈) လုပ်ငန်ခွင်ကြီးလူ (ဒီအလာက်) ကောင်း (၈) လက်ဆောက်ခဲ့ဆန် (ဒီအိလက်ဆောက်) ကောင်း (၈) လက်ဆောက်ခဲ့ဆန် (ဒီအိလက်ဆောက်) ကောင်း ကက်နတ် ကြောင်း ကက်နတ် ကြောင်း ကက်နတ် ကြောင်း ကက်နတ် ကြောင်း ကက်နတ် ကြောင်း ကက်နတ် ကြောင်း ကက်နတ် ကြောင်း ကျောက်	(c) συσδουσμος     Π       τρομολογος     Π       τρομολογος     Π       τρομολογος     Π       τρομολογος     Π       τρομολογος     Π       τρομολογος     Γ       τρομολογος     Γ<

Thai Faster Products And M.K.Cu., Lid. မှန်ကုန်လိုင်အသည့် လိုင်ဘာသမြို့နှယ် ရောလ်နားကန်ရန် ၊         market And M.K.Cu., Lid. မှန်ကုန်လိုင်အသည့် ဆင်ဆာလနားကို အနှစ်နောက်လန်းရန်းရှားကနားနှင့် အားလိုးခဲ့သည့် ဆင်ဆာလနားကနားကို အနှစ်နောက်လုန်နှင့် ရှောက်လနားကနားကို အနှစ်နောက်လုန်နှင့် နှင့်သည် ရှောက်လနားကနားကို အနောန်နာက ကို ရန်းနားက Products And M.K.Cu., Lid. မှန်ကုန်လိုင်အသည့် ဆင်ဆာလနားကနားကို အနှစ်နောက်လုန်နှင့် နှင့်သည် ရန်းနားကို Product Scanding New Society (Science)         cite of the second	
ကနောင်နံအကိုက်မှန် ဆန်းရှိသည့်နားနေသည့်နားနေသို့သည့်သည့်သည့်သည့်သည့်သည့်သည့်သည့်သည့်သည့	
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in γύζεξεχδηξενομερισμου του του του του του του του του του τ	
(m) လုပ်ငန်းနှင့်ကြက္ကြည့် (kilomonia and and and and and and and and and an	
(a) యుగుభుత్వంత్త, 272 - 272       (b) యుగుభుత్వంత్త, 272 - 272         (b) యుగుభుత్వంత్త, 272 - 272       (c) సంగుభుత్వంత్తంత్రంత్రంత్రంత్రంత్రంత్రంత్రంత్రంత్ర	
(a) యుగుభుత్వంత్త, 272 - 272       (b) యుగుభుత్వంత్త, 272 - 272         (b) యుగుభుత్వంత్త, 272 - 272       (c) సంగుభుత్వంత్తంత్రంత్రంత్రంత్రంత్రంత్రంత్రంత్రంత్ర	
(a) သန်းဆိုးရန်းလို ကိုလင်းနှင့် ကိုဆက်ဆံရောန်နှင့်ကိုဆားရှိသားလို (a)         (b) ဆားချားကို ကိုလ်နှင့် ကိုဆက်ဆံရောန်းရန်းရန်းကို (b)         (c) ဆန်းဆိုးရန်းရန်းရန်းရန်းရန်းရန်းရန်းရန်းရန်းရန်	
(m) လိုင်နံနှင်ကြိုက်ပွဲ (လိုက်လိုန်နှင့်ကြိုက်ပွဲ (လိုက်လိုက်နှင့်ကြိုက်ပွဲ (လိုက်လိုက်နှင့် လိုက်လိုက်နှင့် (လိုက်လိုက်နှင့် လိုက်လိုက်နှင့် (လိုက်လိုက်နှင့် (လိုက်နှင့် (လိုက်လိုက်နှင့် (လိုက်လိုက်နှင်)))))))))))))))))))))))))))))))))))	
(m) လိုင်နံနှင်ကြိုက်ပွဲ (လိုက်လိုန်နှင့်ကြိုက်ပွဲ (လိုက်လိုက်နှင့်ကြိုက်ပွဲ (လိုက်လိုက်နှင့် လိုက်လိုက်နှင့် (လိုက်လိုက်နှင့် လိုက်လိုက်နှင့် (လိုက်လိုက်နှင့် (လိုက်နှင့် (လိုက်လိုက်နှင့် (လိုက်လိုက်နှင်)))))))))))))))))))))))))))))))))))	
Image: Status in the state	
(m) ဆွန်သွားရားဆန်ဆန်းကိုးအနေအနေအနိုင်းရှိ (m)         (m) ဆွန်ဆွန်ကိုးရန်းနှားရန်ဆန်းကိုးအနေအနေအနိုင်းရှိ (m)         (m) ဆွန်ဆွန်ကိုးရန်းနှားနှားနှားနှားနှားနေးနေးနောင်းခုန်းနှားရန်းနှားနေးနောင်းနှားနောင်းနှားနောင်းနောင်းနှားနောင်းနှားနောင်းနောင်းနှားနောင်းနှားနောင်နောင်းနောင်နောင်နောင်နောင်းနောင်းနောင်းနောင်နောင်နောင်းနောင်နောင်းနောင်နောင်နောင်နောင်နောင်နောင်နောင်နောင်	
(m) ကိုင်နိုန်ရှိဆိုကို (m)             (m) ကိုင်နိုန်ရှိဆိုကို (m)             (m) ကိုင်နိုန်ရီဆိုကို (m)	
(a) ဆန်ဆည်းရားဆန်ဆန်းခဲ့ခဲ့သည်။       (b) ဆန်ဆည်းရားဆန်ဆန်းခဲ့သည်။         (b) ဆန်ဆည်းရားဆန်ဆန်းခဲ့သည်။       (c) ဆန်ဆည်းရားဆန်ဆန်းခဲ့သည်။         (c) ကျန်ဆန်းရားရားဆန်ဆန်းခဲ့သည်။       (c) ကျန်ဆန်ဆန်းရားဆန်ဆန်းခဲ့သည်။         (c) ကျန်ဆန်းရားကိုးဆန်းဆန်းရားဆန်ဆန်းခဲ့သည်။       (c) ကျန်ဆန်ဆန်းရားဆန်ဆန်းခဲ့သည်။         (c) ကျန်ဆန်းရားကိုးဆန်းဆန်းခဲ့သည်။       (c) ကျန်ဆန်းရားကိုးဆန်းဆန်းခဲ့သည်။         (c) ကျန်ဆန်းရားကိုးဆန်းဆန်းခဲ့သည်။       (c) ကျန်ဆန်းရားကိုးဆန်းဆန်းခဲ့သည်။         (m) ကုန်နော်ဆိုးကိုးရန်အန်းရားကို အန်ဆန်းခဲ့သည်။       (c) ကျန်ဆန်းရားကိုးဆန်းခဲ့သည်။         (m) ကိုင်နန်းနိုင်ကြားသူ (ဆိုးဆန်းခဲ့သည်။       (c) ကျန်ဆန်းခဲ့သည်။         (m) ကိုင်နန်းနိုင်ကြားသူ (ဆိုးခံနှင့် ကျန်ဆန်းခဲ့သည်။       (c) ကျန်ဆန်းခဲ့ကြားခဲ့သည်။	
(a)       (b)       (c)       (	-
(w) အနန်အမှုကျော်ဆန်နှားကြီးရေးအနော်အနော်နေအခါ အကြီးရန်         (w) အနန်အမှုကျော်ဆန်နောက် ()           (w) အနန်အမှုကျော်ဆန်နောက် ()         (w) အနန်အမှုကျော်ဆန်နောက် ()           (w) အနန်အမှုကျော်ဆန်နောက် ()         (w) အနန်အမှုကျော်ဆန်နောက် ()           (w) အနန်အမှုကျော်ဆန်နောက် ()         (w) အနန်အမှုကျော်ဆန်နောက် ()           (w) အနန်အမှုကျော်ဆန်နှစ်ကြီးရှာ ()         (w) အနန်အမှုကျော်ဆန်နောက် ()           (m) ကျင်နော်နောက်ကြားရှာ ()         (m) ကျင်နောက် ()	-
ာ ကိုးနားရှိသို့နေသို့က (၃) သားသား (၁) ကို ကိုးနားရှိသို့နေသို့က (၃) ကို ကိုးနားရှိသေးသားသားသားသားသားသားသားသားသားသားသားသားသား	
ကိုမြန်ခြားအနေအခြေအနေအခြေအနေအခြေအနေအခြေအနေအခြေအနေအခြေအနေအခြေအနေအခြေအနေအခြေအနေအခြေအနေအခြေကို ၁၉နိုင်ငံပု ၁၄ 	-
(m) လုပ်ငန်းခွင်ကြီးကျွန်သူ (စိန်အသက်)	
(m) လုပ်ငန်းခွင်ကြီးကျွန်သူ (စိန်အသက်)	
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(n) romesmotoliale (Servetermot) 6002	
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ား လုပ်ငန်ခွင်ကျွန်သာတွေနှင့်သောအန္တရာယ်ကာကွယ်ရောက္ကည်ရာနှင့်စစ်လွှင့်ခြင်ကြန်ရာကြန်ရာ (m) လုပ်ငန်ခွင်ကျွန်သာတွေနှင့်သောအကွယ်ရွှောင်များ ။ (m) လုပ်ငန်ခွင်ကျွန်သာကျွန်သာကျွန်သာကျွန်သာကျွန်သည်။ (m) လုပ်ငန်ခွင်ကျွန်သာကျွန်သည်။ (m) လုပ်ငန်ခွင်ကျွန်သည်။ (m) လုပ်ငန်ခွင်ကျွန်သာကျွန်သည်။ (m) လုပ်ငန်ခွင်ကျွန်သည်။ (m) လုပ်ငန်ခွင်ကျွန်သည်။ (m) လုပ်ငန်ခွင်ကျွန်သည်။ (m) လုပ်ငန်ခွင်ကျွန်သည်။ (m) လုပ်ငန်ချင်ကျွန်သည်။ (m) လုပ်ငန်ချင်ကျွန်သည်။ (m) လုပ်ငန်ချင်ကျွန်သည်။ (m) လုပ်ငန်ချင်ကျွန်သားသည့်ကျွန်သည်။ (m) လုပ်ငန်ချင်ကျွန်သည်။ (m) လုပ်ငန်ချင်ကျွန်သည်။ (m) လုပ်ငန်ချင်ကျွန်သည်။ (m) လုပ်ငန်ဆွင်ကျွန်သည်။ (m) လုပ်ငန်ဆင်ကျားသည်။ (m) လုပ်ငန်ဆွင်ကျားသည်။ (m) ကျားသည်။ (m) ကျာသည်။ (m) ကျာသာကျာသားသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသာကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသည်။ (m) ကျာသာကျာသားသည်။ (m) ကျာသည်။ (m) ကျာသည်။	
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(m)	
(m)	
<ul> <li>(၈) လိုင်နေပြားကိုလာန်ရာသိန်လာနေ၊ (၈)</li> <li>(၈) လိုင်နန်ပြားကိုလာန်ရာသိန်လာနေ၊ (၈)</li> <li>(၈) လိုင်နန်ပြားကိုလာနေ၊ (၈)</li> <li>(၈) လိုင်နန်ပြားကို (၈)</li> <li>(၈) လိုင်နန်ပျား (၈)</li> <li>(၈) လိုင်နန်ပန်ပည်(၈)</li> <li>(၈) လိုင်နန်ပန်ပန်ပန်၊ (၈)</li> <li>(၈) လိုင်နန်ပန်၊ (၈)</li> <li>(၈) လိ</li></ul>	
(ii) γψείτζι στου σχώτοζουμα       (iii) γψείτζι στου σχώτοζουμα         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γμείτζι στου σχώτος (iii) </td <td></td>	
(a) approximation of the second secon	
(ii) γψείτζι στου σχώτοζουμα       (iii) γψείτζι στου σχώτοζουμα         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γψείτζι στου σχώτος (iii)       (iii) γψείτζι στου σχώτος (iii)         (iii) γμείτζι στου σχώτος (iii) </td <td></td>	
φιθηθηθηθη       φιθηθηθηθη         φιθηθηθη       φιθηθηθη         φιθηθηθη       φιθηθηθη         φιθηθηθη       φιθηθηθη         φιθηθηθη       φιθηθηθη         φιθηθηθη       φιθηθηθη         φιθηθηθηθη       φιθηθηθη         φιθηθηθηθη       φιθηθηθη         φιθηθηθηθη       φιθηθηθη         φιθηθηθηθη       φιθηθηθη         φιθηθηθηθη       φιθηθηθη         φιθηθηθηθη       φιθηθηθη         φιθηθηθηθηθη       φιθηθηθηθη         φιθηθηθηθηθη       φιθηθηθηθη	
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φιθυθζηφιζητης       φιφ       Φιθυθζηφιζη         φιθυθζηφιζη       φιφ       Φιθυθζηφιζη         φιθυθζηφιζη       φιφ       Φιθυθζηφιζη         φιθυθζηφιζη       φιφ       Φιθυθζηφιζη         φιθυθζηφιζη       Φιθυθζηφιζη       Φιθυθζηφιζη         φιθυθζηφιζηψη       Φιθυβζηφιζη       Φιθυβζηφιζη         φιθυθζηφιζη       Φιθυβζηφιζη       Φιθυβζηφιζη         φιθυβζηφιζη       Φιθυβζηφιζη <td></td>	
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(iii) γινής μαριστρομου τη	

Thai Faster Products And M.K.Co., Ltd. ရန်ကုန်တိုင်အသက်ဖြာ လိုင်သာယာမြီ နယ် ရွှေးလိပန်ဆက်မှုရန် ၊	Thai Faster Products And M.K.Co., Lat. ອຸລິດາຊົດບໍ່ຊົດຮ້ອວລາຍີກ ເຊັ່ວລາແມ່ນີ້, ລຸດລົ ອຽດວ່ວຊົວຄວາດຈຸດຊົ ເ
ကနောင်မင်းသားကြီးလမ်း အမှတ်(၄၆၇(ဘ) ထွင် အကောင်အထည်စော် ဆောင်ရွက်လွက်ရှိသော	ကနောင်မင်းသားကြီးလမ်း အမှတ်(၄၆၇/က) တွင် အကောင်အတည်စော် ဆောင်ရွက်လွက်ရှိသော
ရယ်လီအသောက်ကုန် အချိမ်နာ့လုတ်လုပ်ခြင်နှင့်ဝင်ကျည်၌ အကြံမြား	ရယ်လီအသောက်ကုန် အခိုးခိုးထုတ်လုပ်ခြင်းနှင့်စစ်လွှင်၍ အကြံခြား
ား လုပ်ငန်းစွင်ကျန်းသားမှေနှင့်သေးနွေရာယ်ကာကွယ်ရေးမရွယ်မှားနှင့်စစ်ကျွင်၍အကြံပြနာကိ	အကိုင်နီးစွင်ကျန်းအချေးနိုင်သားချွှေရာယ်ကားကွယ်ရောဖွည်းနားနှင့်စပ်လျွှင်း၌အကြည်ချက်
(m) aptokylanmangelugetyn MWH = 3706/2725+	(m) လုပ်ငန်းရှင်အတာအကွယ်ဝ <u>နှင့်မှ</u> ော
(e) ann hang	(a) သောက်သုံးရေ <u>#0.869</u>
(a) at the start of the second groups and the second secon	(n) သန်စစ်ရန်ကူး
(လ) အောက်ကြားနိုင်ခဲ့အနေနှစ်	(ဃ) ဆေးကြာသန့်ရှင်အရာနေစ်
က်ရာမြိုကြင်းဆေးခဲ့အခြေသေးကို ကိုက်ကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုက	က်စ်ကိုစ်သက်လက်လက်ချောအခြေအနေအသက်ချက်ခြင်ကို မက်ချက်ချက် မ
(m) ဆွည်သံရာအခြေအနေ	(m) ဆူညံသံမွာအခြေအနေ
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(n) ကွင်ရောက်ဆက်ဆက် 🧃	(၈) ကွမ်ငန်းရှင်သားဆိုရာမ်က (၈)
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ခု လုပ်ငန်းစွင် လူမှုဆက်ဆံရေအခြေအနေအခေါ် အကြံ၌ရွက်	ခု၊ လုပ်ငန်းရှင် လူနားကိဆံရေအခြေအနေအပေါ်အကြံမြရက်
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(ආ) ආර්ථික්රිත්තුරිකු (වර්ගයන්)	(m) လုပ်ငန်းရှစ်ကြိုက်သူ (စိမ်ဆာက်) 👘 🗍 (ခ) လုန်ဆောက်စက် (အဆင်က) 👘 အားရာ ၁၇ ၃၇ ၆ ခြင
(e) လုပ်ခော်တိုင်ခက် (အဆင့်သူ)	and the first section in the section of the section
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couper the couper couper	အမည် <u>စိုးစာကျစ်</u> ၄၃န <u>နိုင်မ</u>
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Thei Faster Products And M.K.Co., Let. ຊຊີດາຊົດຖີ່ດີລະວນທີ່ມີແຕ່ຄູ່ດີລະກວກຫຼື, ລະມີ ເຊດນດົບຊີສແກ່ຊຸດຊົ ເ	Thai Faster Products And M.K.Co., Lot. ຊຣ໌ຕາຣ໌ດທີ່ດີສອດນອີໂສ ເຊີຣ໌ດານນາຊີ ເຣຣ໌ ຂອງດຣ໌ດຣ໌ສອດກິນຸດຸຣ໌ :
ကနောင်မင်းသားမြိုးလမ်း အမှတ်(၄၆၇(ဘ) တွင် အကောင်အတည်မော် ဆောင်မွှက်လွက်ခွဲသော ကူသီလီစာသောက်ကုန် အမ္တိုးမို့ထွယ်လုပ်ခြင်းနှင့်လဲလွည်၌ အကြံမြှာာ	ကနောင်မင်းသားကြီးလမ်း အမှတ်(ငှင်ရှ(က) တွင် အကောင်အထည်ဖော် ဆောင်ရွက်လွက်ရှိသော အုယ်ကီစာသောက်ကုန် အဖို့ခရီဆုတ်လုပ်ခြင်နှင့်ဝင်တွည်၌ အကြံဉ်စာ
ာက္ကိုက်ရာကျနားဆေးသိုးသားသားသိုးသားသိုးသားသိုးသားသိုးသိုးသိုးသိုးသိုးသိုးသိုးသိုးသိုးသို	ာ။ လုပ်ငန်းခွင်ကျန်းကရေးနှင့်ထေးအန္တရားယ်ကာကျယ်နောက္ကည်းနားနှင့်စစ်ကျည်းရုံအကြီးခြားကိ
2	·
	(m) လုပ်ငန်းစွင်အကာအကွယ်ပစ္စည်းများ 👷 🖓 🕺
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(ဃ)အောက္ကြက္ရန္အစိုးစစ္စနစ္ ကောင်ပါသည္ န	(w) amatima kataga k
က်နှင့်နီးတွင်တွင်ကိုင်မှုအခြေအနေအဆမ်အကြီးချင် က	၂။ လုစ် <del>ငန်ခွင်သလုပ်လုပ်လိုပ်နှာမြေအနေအမ</del> ေါ်အကြိုမှုက်
(m) ဆူတိုက်မှုအားခြံအနေ မရှိပါ	(က) ဆူညံသံမှာအခြေအနေ မြ
(a) alfer an person of the	(e) အနံ့အသက်/ဆန်းအရွေ့မျာ <del>ာ 'မု<i>က်'</i>'</del>
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(၈) လုပ်ငန်းစိတ်ကြားမှာ (စီအားက်) 👘 ကောင်ပါသည်.	(m) white and the control of the con
(a) ကုန်ရာကိုစ်စက် (အဆင့်တူ)	(၈) လုပ်နောက်သာ (အဆိုသာ) (၈) လုပ်နောက်သာ (အဆိုသူ) <sup>8</sup> ဲ 206 ရပ
(a) Nortesandrafacte (Stochesand) - 87 J.	(၁) လူယ်မာကိုသင်္ဘာ (အဆင့်ကူ) (၈) လက်အောက်ဝန်ထမ်း (စီမီလက်အောက်) (၈) လက်အောက်ဝန်ထမ်း (စီမီလက်အောက်)
မ သူ့အနောက်ဖြစ်နာ	မ သူမြားကြော်ရသူမ်ာ
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Thui Faster Products And M.K.Ca., Ltd. ရန်ကုန်တိုင်အသကြီး လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ပန်စက်မှုရန် ၊	Thai Faster Products And M.K.Co., Ltd. ຜູ້ລົກສໍດີກິ່ວສວນເປີ້ມ ເຊີ່ດ້ວນແປນຊື່ ແລ້ ຍອດບໍລິສົກກົງຄຸລ໌ ເ
ကနောင်မင်းသားတြီးလမ်း အမှတ်(၄၆၄)က) တွင် အကောင်အထည်စော် ဆောင်ခွက်လွက်ရှိသော	ကနောင်မင်းသားကြီးလမ်း အမှတ်(၄၆၇)က) တွင် အကောင်အသည်တေ် ဆောင်ရွက်လွက်ရှိသော
ကွယ်ကစာသောက်ကုန် အမြာခွဲရာကိုလုပ်ခြင်ခုန်လုပ်လူဦး၌ အကြံများ	ရယ်လီစာသောက်တုန် အမြီးခိုးတုတ်လုပ်ခြင်းနှင့်လဲလည်း၌ အကြံပြုစာ
အ လုပ်ငန်းနှစ်ကျန်းမားများငိုအေအနွှဲရားထံတာကွယ်ရောဖူည်ရောနှင့်စစ်လွန်းရှိအကြံမြရက်	က်မှုမြိုက်ဆွင်ကွန်တွေက ကိုလူမှုဆိုလူမှုဆိုလူမှုဆိုလူမှုဆိုလူမှ ကိုလူမှုဆိုလိုက်လူမှုဆိုလိုက်လို့မှ ကိုလူမှုဆိုလိုက် က
(က) လုပ်ငန်းနှင်အကာအတွယ်ပစ္စည်များ	(က) လုပ်ငန်းရှင်အကာအကွယ်တွည်းနား
(e) သောက်သုံးရေ <u>က စာ စီ</u>	(a) any particular (a) any particular (b) any parti
(n) ແມ່ນເຮັດໃນ ເພື່ອງ ເພື່ອ	(a) 22606 544x . 25 19 19 19 19 19 19 19 19 19 19 19 19 19
(လ) အေးကြောသန့်ရှင်းရေးနစ်	(10) ဆေးကြောသန့်ရှင်းရေးနှင် }
ာ ကုန်လွန်ဆွင်သက္စပိတ်လိုက်လိုအခြေအနေအဆော်အဆွေကို	ျားကိုက်ခြင်အကိုကိုကိုကိုအခြင်အနေအဆေးခြင်ကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုကိုက
(m) ရည်သံမှာအခြေားန မီ	(m) ရည်းသံများအခြေအနေ (b)
(a) အနံအဘပ္ပဲအခိုအခင် ကိုး (b) ကိုက်ကန်းအရောက် (b) ကိုက်ကန်းအရောက်	(ခ) အန်အသက်/အနီအာတ္တေမှာမြို
	(၈) လုပ်ငန်းနှင့်အာင်းစည်း
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(w) saying saying 800 - 83	(c) exotenant amot 2265.
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ခု၊ လုပ်ငန်းရှင် လူမှုဆက်ဆံနေအခြေအနေအခေါ် အကြံပြခုက်	ခုံး လုပ်ငန်းခွင် ကူမှုဆက်ဆံရေအခြေအနေအခေါ် အကြံခြရက်
(m) လုပ်ငန်းနွင်ကြီးကြပ်သူ (ဆီအဆက်) <u>၂၁ ၁၇၄ မြေ</u>	(m) လုပ်ငန်းမှုစ်ကြီးကြားသူ (စိဖ်အထက်) စာက်အပ်မှုကောင်းသည် -
(m) လုပ်ငန်းမှုကျေးကြင်ရဲ့ (ဆာသော) (e) လုပ်စော်ကိုစ်စက် (အဆင့်ကူ)	(e) ထုပ်စော်ကိုင်စက် (အဆင့်တူ) 58 80 ၆ ရက် ( 33.2 5 -
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ခဲ <del>သူမ်းအပြောက်မ</del> ်း	မှ <del>သိန်းအကြိန်ရ</del> မ်း
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လုပ်ထက် <u>၂၂ N</u> ဆက်သွယ်နော်တို့စာ <u>၁၁ မှမင် မျှ</u>	
	asungly
လာပြားနှင့်သည်လိုလ်လိုက်လာသာလိုက်လာသားသို့သောကို သို့သို့သောကို သို့သို့သောကို သို့သို့သောကို သို့သို့သို့သို့သို့သို့သို့သို့သို့သို့	မားကိုလားသားကိုက်နောင်းနှင့်သည့်ဆွန်းနောက်ကားခွင့်နောက်ကားသားသားသားကို အခြားခြားက ကားကိုလ်နောက်မှားကို ကားကို ကားကို (၈) (၈) (၈) (၈) (၈) (၈) (၈) (၈) (၈) (၈)
(m) ရာညံသိမ္စာအားခြဲအားန	- (n) လုန်းနောက်အနေ (a) အနံအသက်အစိုးအနေ (a) လုန်းနောက်ဆောက် (b) လုန်းနောက်ဆောက် (c) လုန်းနောက်ဆောက် (c) လုန်းနောက်ဆောက် (c) လုန်းနောက်ဆောက် (c) လုန်းနောက် (c) လုန်း) (c) လုန်းနောက် (c) လုန်းနောက် (c) လုန်း) (c) လန်း) (c) လုန်း) (c) လုန်း) (c) လုန်း) (c) လုန်း) (c) လုန်း) (c) လုန်း) (c) လ (c) လုန်း) (c) လ (c) လ (c) လ) (c) လ)
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(a) Alizvatarika 1	(a) කද්ශකාරුකදිංකය හිති
(၈) အနံအသက်/အခိုအမင္မေအနေအခြေအနေအခါ အကြီးရွက် (၈) ကွမ်းနီးစွားရားအားခြားနေ ။ (၈) ဆနန်အက္ဆားနားအားခြားနေ ။ (၈) ဆနန်အက္ဆားနားအားခြားနေအားခြားနေအားခြားနေအားခြားနေတာ့ အကြီးရွက် (၈) ရက်ငန်းနှင့် လူမှုဆက်တော့အားခြားနေအ ကြီးခြားခြားနေအာက်ခြားနေအားခြားနေအားခြားနေအားခြားနေအားခြားနေအားခြားနေအားခြားနေအားခြားနေအားခြားနေအားခြားနေအားခြ	(a) အနီအသပ်အခြားနေ (b) လုပ်ငန်းရားတွေအနေ (c) လုပ်ငန်းရားအခြားနေ (c) ကိုင်ငန်းရားကို (c)
(a) အန်အသက်အခိုအတွေ ရာ (b) အန်အသက်အခိုအတွေ ရာ (c) ဆုန်သွားမှာအားခြားနေ (c) စားလိုကေရွက် (c) စားလိုက်ရှိတွေ () စားကို ရှိ () စားကို ရရှိသည် - (c) စားလိုက်ရှိတွေ () စားကို ရရှိသည် - (c) စားလိုက်ရောက်ရှိအနေအားခြားနေအားခြားရန်သားခြားခြားခြားခြားခြားခြားခြားခြားခြားခြ	ခ် ဟိုင္ရမိနိုင္ ဟိုဆယ္ရက္ကေနအကြားနဲ႔ အကြားရိုက္လဲ (၁) (၁) အကိုအနီးဆက္ရာအနီးအတို (၁) (၁) ကိုင္ရမိနိုင္ရာက္ရားဆိုက္ရား (၁) (၁) ကိုင္ရမိနိုင္ရာက္ရားဆိုက္ရား (၁) (၁) ကိုင္ရမိနိုင္ရာက္ရားကိုက္ရားကို (၁) (၁) ကိုင္ရမိနိုင္ရာကို (၁) ကိုင္ရမိနာကို (၁) ကိုင္ရာကို (၁) ကိုင္ရမိနဲ႔ (၁) ကိုင
(၈) အန်အသက်/အခိုအတွေ့ရေး ၈ရိ (၈) ကုပ်ငန်းနှင်အကင်ရောင် မှ (ဃ) အရန်အမှုကျာအရှေးနေး ကို ကောင်ကိုသည်။ (၀) ကောင်ကေထွက် မို ၊ ကောင်ကိုသည်။ ၃၈ ကုပ်ငန်းနှင် ကူမှာကို <del>င်းရေးအရှိကြနေးအပါ အကြံပြဲရက်</del> (က) ကုင်နန်းနှင့်ကြက်ကူ (စစ်အထက်) ကြံးကြိုင် ပါတည်	(iii) ယိုင်နံးနိုင်ကြည်ထု (နိုင်ဆောဒီ အကြံးခဲ့တ် (iii) ယိုင်နံးနိုင်အက်အတွေအနေ အကြီးခဲ့တ် (iii) သိုင်နံးနိုင်ကြည်ထု (နိုင်ဆက်အဖြားနေအာဒီ အကြီးခဲ့တ် (iii) သိုင်နံးနိုင်ကြည်ထု (နိုင်ဆက်) (iii) သိုင်နံးနိုင်ကြည်ရှိသို့ (နိုင်ဆက်) (iii) သိုင်နံးနိုင်ဆက်ခံရက် (နိုင်ဆက်) (iii) သိုင်နံးနိုင်ဆက်ခံကို (နိုင်ဆက်ခံခြားနေသောဒီ အကြီးခဲ့တဲ့ (iii) သိုင်နံးနိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်)) (iii) သိုင်နန်းနိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်)) (iii) သိုင်နန်းနိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်)) (iii) သိုင်နန်းနိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်))) (iii) သိုင်နန်းနိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်)) (iii) သိုင်နန်းနိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်)) (iii) သိုင်နန်းနိုင်ဆက်ခံကို (နိုင်ဆက်ခံကို (နိုင်ဆက်))) (iii) (iii)
(a) သန့်ဆားကို အခိုးဆင့္ကေနာ (b) ဆန်ဆားကို အခိုးဆင့္ကေနာ (c) ကုပ်ငန်းနှင် အကုန်းဆင့်အေန (c) ကေဝင်ကေထွက်	(e) အနံအသက်/အနီအေး၄ မျာ         မှိ           (n) လုပ်ငန်းစွင်အလင်အရာဝ         (i)           (a) သူန်းထွေအတွေက         (ii)           (b) အနန်အသက်/အနီအေး၄ မျာ         (iii)           (c) ဆောဝင်ကော့က်         (iiii)           (c) လုပ်ငန်းစွင်ကြီးကြားရာ (kissaan)         (iiiiii)           (m) လုပ်ငန်းစွင်ကြီးကြားရာ (kissaan)         (iiiiiii)           (a) လုပ်ငန်းစွင်ကြီးကြားရာ (kissaan)         (iiiiiiiii)           (a) လုပ်ငန်းစွင်ကြီးကြားရာ (kissaan)         (iiiiiii)
(a) သန့်ဆာက်ကိုအစေးရှိသနေးဆာ ကြို့ (b) ဆန့်ဆာက်ကိုအစေးရှိသနေး (c) စာဝင်လေထွက် ရှိ ၊ စကင်၍သည်- ဘု လိုင်နောင် လူရာကိုဆံရေးအခြာအနေးဆာ အကြို့ရာဘို (c) စာဝင်နောင် လူရာကိုဆံရေးအခြာအနေးဆာ အကြို့ရာဘို (c) စာဝင်နောင် လူရာကိုဆံရေးအခြာအနေအာ အကြို့ရာဘို (c) စာဝင်နောင် လူရာကိုဆံရေးအခြာအနေအာ အကြို့ရာဘို (c) စာဝင်နောင် ကြိုက်ကို (စစ်အထက်) ကြို့ရေးကိုကြည်	(a) အန်ဆာက်(အနိအား၄, မှာ (b) အန်ဆာက်(အနိအား၄, မှာ (c) ဆာတ်ဆေထွက် (c) ဆာတ်ဆေထွက် (c) ဆာတ်ဆေထွက် (c) ဆာတ်ဆေထွက် (c) ဆာတ်ဆေထွက် (c) ဆာတ်ဆေထွက် (c) ဆာတ်ဆိုက်ခံသုံ (ဆဆင်က) (c) သာတ်ဆက်ကိုခံဆုံ (အဆင်က) (c) သာတ်ဆက်ကိုခံဆုံ (အဆင်က) (c) သာတ်ဆက်ကိုခံသုံ (သဆင်က) (c) သာတ်ဆက်ကိုခံသုံး(သည်က) (c) သာတ်ဆက်ကိုခံသုံး(သည်က) (c) သာတ်ဆက်ကိုခံသုံး(သည်က) (c) သာတ်ဆက်ကို (C)
(a) wiewniaetaataataa (b) wiewniaetaataa (c) water wie weetaataa (c) water weetaataataa (c) water weetaataataa (c) water weetaataataataataataataataataataataataata	(e) အနံအသက်(အနီအောင္ခ မျာ       (a) လုင်ရန်စွင်အလင်းရာလိ       (b) လုင်ရန်စွင်အလင်းရာလိ       (c) သည်ဆောင်စုံသနေ       (c) သောင်းလတ္တက်       (c) သက်အာက်လံလေ့သခြေသနေအာက် အကြားခဲ့တဲ့       (a) လုပ်နော့စိုက်ကြာသို့ရာ (စိစ်သောက်)       (b) လုပ်ဆောက်စိုးတစ် (အဆင့်လူ)       (c) လက်အာက်လိုးတစ်၊ (စိမ်လက်ဆောက်)       (c) လက်အာက်လိုးတစ်၊ (စိမ်လက်ဆာက်)
(a) အန်အာက်ကိုအစိုးတွေ ရား (b) အန်အာက်ကိုအစိုးတွေ ရား (c) ဆန်အာက်ကိုအစိုးတွေ ရား (d) ကုန်းနိုင်ကိုကြားရ (c) လေင်လေထွက် (c) လေင်နေရင်ကိုကြားရ (c) လေင်နေရင်ကိုကြားရ (c) လုန်းနောင်ကိုကြားရ (c) လုန်းနောင်ကိုကြားရ (c) လုန်းနောင်ကိုကြားရ (c) လုန်းနောင်ကိုကြားရ (c) လက်အာက်ခန့်တန်း (ဆီလက်အားကို) (c) လက်အာက်ခန့်တန်း (ဆီလက်အားကို) (c) လက်အာက်ခန့်တန်း (ဆီလက်အားကို)	(a) အန်အသက်/အနီအေဝၚ မှာ     (b) အန်အသက်/အနီအေဝၚ မှာ       (b) လုင်ရန်စွင်အတင်အရာင်     (c) လာင်အတွက်       (c) ဆာပင်အထွက်     (c) ကောင်းတွက်       (c) ကုပ်ငန်းနှင့်ကြီးကြားရာ (စိစ်ထောက်)     (c) ကုပ်ငန်းနှင့်ကြီးကြားရာ (စစ်ထောက်)       (a) ကုပ်ငန်းနှင့်ကြီးကြားရာ (စစ်ထောက်)     (c) ကက်အားက်ဝန်ထန်း (စိစ်လက်တာက်)
(a) missonhingtener, and a set of a set	(a) ဆန်ဆာကိုအနီအားငွ မျာ သိန်းဆာကိုအနီအားငွ မျာ သိန်းနိုင်သက်ဆန် (b) လုန်းနိုင်သက်ဆန်သော သိန်းဆိုက်သိုးသည်ဆန်း (c) သာသိန်းတွင် ကျားသိုးသည် သိန်းနိုင်သည် (c) သာသိန်းတွင် ကျားသိုးသည် (c) သာသိန်းတွင် ကျားသိုးသိုးသိုင်သည် (c) သာသိသာသိသာသိသာသိ (c) သာသိသာသိသာသိသာသိ (c) သာသိသာသိသာသိသာသိသာသိ (c) သာသိသာသိသာသိသာသိသာသိ (c) သာသိသာသိသာသိသာသိသာသိသာသိသာသိသာသိသာသိသာသ
(a) γιζωνη και μανή     1       (b) γιζωνη και μανή     1       (c) γιζωνη μανή     1 </th <td>(a) ဆန်ဆာကိုအနီးဆာပွဲ မူး (b) ဆန်ဆာကိုအနီးဆာပွဲ မူး (c) သာသီဆာတွက် (d) သုန်ဆန်ဘာအကြာသုံး (d) သည်ဆာကိုအနီးဆာပါ အကြားချ (e) သာသီဆာတွက် (c) သာသာတွက် (c) သာသီဆာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာတွက် (c) သာသာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာသာသာသာတွက်</td>	(a) ဆန်ဆာကိုအနီးဆာပွဲ မူး (b) ဆန်ဆာကိုအနီးဆာပွဲ မူး (c) သာသီဆာတွက် (d) သုန်ဆန်ဘာအကြာသုံး (d) သည်ဆာကိုအနီးဆာပါ အကြားချ (e) သာသီဆာတွက် (c) သာသာတွက် (c) သာသီဆာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာတွက် (c) သာသာတွက် (c) သာသာသာသာတွက် (c) သာသာသာတွက် (c) သာသာသာသာသာသာတွက်
(a) 2010	
(a) γρωτη στορουτη     (b) γρωτη στορουτη       (a) γρωτη στορουτη     (c)       (a) γρωτη στορουτη     (c)       (c) ανοτό ενοφορί     (c)       (c) ανό ενοφορί     (c)       (c) ανό ενογό ενοφορί     (c)       (c) ανό ενογό ενοφορί     (c)       (c) ανό ενοφ	

This Faster Products And M.K.Co., Ltd. ດຊ້າວງຊົດຖືດີສວດກອີສະດັ່ງດີແວນມາຊີ ຊຸດວິເ ອອດດົບຊົອກດັ່ດຸຈຸຊົ (	Thai Faster Products And M.K.Co., Lat. ຈຸຊິດາຸຊົດທີ່ຄອວນທີ່ສະດຸດີດ້ວຍວາມທີ່ສະດຸດີ ແລະ ແລະ ແລະ ແລະ ແລະ ແລະ ແລະ ແ
ကနောင်မင်းသားကြီးလမ်း အမှတ်(၄၆၇)က) တွင် အကောင်အတည်စတ် ဆောင်ရွက်လွက်ဖို့သော	ကနောင်ခင်သားကြီးလန်း အမှတ်(၇၆၇)က) တွင် အကောင်အတည်တော် ဆောင်ခွက်လူက်ဖို့သော
	ကွယ်လီကသောက်ကုန် အမျိုးခဲ့ထုတ်လုပ်ခြင်းနှင့်လုပ်သည်၍ အကြံမြစာ
ကွယ်ကိစာသောက်ကုန် အမျိုးဖို့ထုတ်လုပ်ခြင်းနှင့်လင်လွှင်၍ အကြံပြစာ	အများများသားသားနာ အများသားသားသားသားသားသားသားသားသားသားသားသားသာ
ာ။ လုပ်ငန်းခွင်တွန်းတရေးနှင့်တေးအန္တရာယ်ကာတွယ်ရေးပရွည်များနှင့်စပ်ကျင်း၌အကြံမြရတ်	
(m) လုပ်ငန်းရှင်အကာအကွယ်ရှင်းများ 🕴 အခြင်	က်) က်က်ကိုက်ကို ကိုက်ကက်ကို ကျက်ကို အကျက်ကို အမိနာကို အမိနာကိုက်ကိုက်ကိုက်ကိုက်ကိုက်ကိုက်ကိုက်ကိုက
(e) constation (e)	(e) constance by the
(a) safet get get get get get get get get get g	(0) apoliter dansiner angrige inner y fill init of dags.
(w) ဆေးကြောသန့်ရှင်အဖူစနစ်	(ဆ) စဆာကြောသန့်ရှင်ရေနေစီ - စဘာင်း ပါသည့်
	ကုန်းမြန်ဆင်အလုန်လုန်လုန်အနေအာအခြက်ချင်ကို ကိုလုန်လုအခြန်းခဲ့တဲ့။
၂။ လုပ်ငန်းခွင်အလုပ်လုပ်ကိုင်မှုအခြေအနေအပေါ်အကြံခြဲရက်	the second se
(က) ရည်သံမှာအခြေအနေ မောင်	(m) ဆူညံသံများအခြေအနေ - <sup>(A)</sup>
(a) အန်အသည်(အန်အရှေ့မှာ	(e) အန်အာက်အခိုးအငွေ မွာ- <sup>(g)</sup>
(၀) ကိုမ်တန်းရာတီတန်းရာတီကို (၀)	(၈) လုပ်ငန်းရှင်ဆလင်တွေကို ကောင်းပါးသည်း
(m) adjeated met	(ယ) <del>သည်သွားမှာအခြားမှ အခြ</del>
(c) and a state of the state of	(c) evoterraget ermt illes zin
A CARLER AND A C	ခု၊ လုပ်ငန်းခွင် လူမှုဆက်ဆံရေအနေအပေါ်အကြံခြားကိ
ခု။ လုပ်ငန်းမှုခ် လူမှုဆက်ဆံရေအခြေအနေအခေါ် အကြံခြံခွက်	(m) ආර්ථිකුණිලිකින්න (කිකකත්) මා කර්දි වේදුන් දෙදුව
(m) လုပ်နော့စ်ကြီးကြပ်သူ (စီအထက်)	(စ) လှုစ်ဆိုကိုင်းကို (အဆင်က)
(e) လုပ်စော်ကိုင်စက် (အဆင့်တူ) <u>econ င</u> ်း ၂ ရက်	(0) wheenhokale (low heanh) - 10 and Elevel 10 2
(၈) လက်အောက်ခန်ထမ်း (မိမိလက်အောက်)	
	မှ အမြားအကြံခြင်္ကရား
နာ သိန်းအကြေခြနက်နာ	
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ຊະດີພາກ ແລະ ເພື່ອກາງ ແລະ ເພື່ອກາງ ແລະ ເພື່ອກາງ ເພື່ອກາງ ເພື່ອກາງ ເພື່ອກາງ ເພື່ອກາງ ເພື່ອກາງ ເພື່ອກາງ ເພື່ອກາງ ເ	G. 25. Par
ດາຍູ້ເຄັ່ງຂໍາມູ້ແມ່ງຊາຍເຊັ່ງແມ່ງຕໍ່ມູງເພື່ອມູ່ມູ່ມູດເຊັ່ງເຊັ່ງເຊັ່ງເຊັ່ງເຊັ່ງເຊັ່ງເຊັ່ງເຊັ່ງ	မားကြားနှင့်သွန်းဆွန်ဆွန်ဆွန်သွန်းမှာသိသွန်းခဲ့သို့သွန်းခဲ့သို့သူ ကိုးမြိုင်ခြင်းနွန်သည်ဆွနာသိတ္တကာလိတ်နေ့ဆာလန်းမားနေနဲ့ကို (m) ကိုးမြိုင်ခြင်းနှင့်သားသားသားသားသားသားသားသားသို့ ကိုးမြိုင်ခြင်းသို့ ကြေးခြင်းသို့ ကြေးခြင်းသို့ ကြေးခြင်းသားသို့ ကိုးမြိုင်ခြင်းသို့ ကြေးခြင်းသို့ ကြေးခြင်းသို့ ကြေးခြင်းသားသို့သောကြားသား ကိုးမြိုင်ခြင်းသို့ ကြေးခြင်းသို့ ကြေးခြင်းသို့ ကြေးချင်းသို့ ကြေးချင်းသို့ ကြေးချင်းသားသားသားသားသားသားသို့သောကြားသို့သို့ကို (m) ကြေးချင်းသားသို့သောကို ကြေးချင်းသို့ ကြေးချင်းသို့ ကြေးချင်းသို့သို့ ကျင်းသို့ ကြေးချင်းသားသို့သောကို ကြေးချင်းသို့ ကြေးချင်းသားသို့သောကို ကျင်းသားသို့သောကို ကျင်းသို့သို့သို့သို့သို့သို့သို့သို့သို့သို့
(w) with many sources and sources and sources and sources (w)	(m) when have been to be a construction of the
(c) moteringiti 620022-32010	(c) സോസോറ്റൽ
အ ကိုင်နီမိုင် ကူမှုဆက်ဆံရေအခြေအနေအခေါ်အကြိမ်တွက်	ကုန်းမြားစားစားစားစားစားစားစားစားစားစားစားစားစာ
<u> ကြားလမ်း ဒိုကာသေ</u> (ကာအဆို) ထိုကြက်ဖွန်တဲ့မှာ (က)	(က) လုပ်ငန်းနှစ်ကြီးကြယ်မှ (စီစီအထက်) — ၆ သားကြီး
(a) when the same and the sam	(a) လုပ်စော်ကိုမ်ားက် (အဆင့်သူ)
(n) ເບດ້ອຍກາກິດຊົ່ໝໍຍ໌ (ຊີວິເນດ້ອຍກາກິ)	(n) Notesanto ( 20 Notesant) 6 000 E :
March 1 March 10 Constant	
မှ သမ္မာအဆွန်ချက်မှာ	ဗဲ အူရိုအဖြစ်ဖြစ်နှစ်
ener The Maria and the Maria	ဗ အူရိုးအဖြစ်ဖြစ်နှစ်
ener The Maria and the Maria	9 ფ <u>წიფწ</u> ეფად

Thai Faster Products And M.K Co., Ltd. ရန်ကုန်တိုင်အဒသကြီး ကနောင်မင်းသားကြီးလမ်း အမှတ်(၄၆၇/က) တွင် အကောင်ဒ	
ရှယ်လီစားသောက်ကုန် အမျိုးမှုံးထုတ်လုပ်ခြင်းမှ	
၁။ လုပ်ငန်းစွင်ကျွန်းမာရေးနှင့်ဘေးအန္တရာယ်ကာကွယ်ရေးပစ္စည်းများနှင့်	စပ်လျှဉ်း၌အကြံပြုရက်
(က) လုပ်ငန်းနှင်အကာအကွယ်ပစ္စည်းများ ၆ ရှိ ( )	m- con zalipin
(ခ) သောက်သုံးရေ လို့ လေသည်မှု ရှိ ရှိသည်။	- 0 1
(n) 25663	
(ဃ) ဆေးစကြာသန့်ရှင်းရေးစနစ်	
၂။ လုဝ်ငန်းစွင်အလုပ်လုဝ်ကိုင်မှုအစရြအနေအပေါ် အကြံပြုချက်	
(က) ဆူညံသံများအခြေအနေ မေနပြ ပါ	
(ခ) အနံ့အသက်/အစိုးအဝွေ့များ	
(ဂ) လုဝ်ငန်းခွင်အလင်းရောင်	
(ဃ) အမှန်အမွှားမွားအခြေအနေ မြ ပြ ပါ	
(c) လေဝင်လေထွက်	
၃။ လုဝ်ငန်းစွင် လူမှုဆက်ဆံရေးအခြေအနေအဝပါအကြံပြုချက်	
(က) လုပ်ငန်းစွင်ကြီးကြပ်သူ (စိန်အထက်)	
(ခ) လုပ်ဖော်ကိုင်ဖက် (အဆင့်တူ)	
(ဂ) လတ်အောက်ဝန်ထမ်း (မိမိလက်အောက်)	*****
ငှ၊ သီမြားအကြံပြုရက်များ	
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	Anna B L TH

# APPENDIX (21): Requesting Letter of GMES on the Suggestion of Public Consultation Meeting

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wind Committee	Green Myanmar Environmental Services Co., Ltd
Mart	No.115. Kanaung Min Thar Gyi Road, Industrial Zore (1), Hlaing Thar Yar Industrial City. Yangon, Myanmar
	Vangon, Myanmar Felz 07/3685572, 01-3685571, 09-5081451, 09-5122448 E-mail: gmescompany@gmail.com
ag 💽 .	S
တာဝန်ခံ	
Thai Faste	r Products and M.K. Co., Ltd.
မြေကွက်အ	မှတ်(၄၆၇/က)၊ ကနောင်မင်းသားကြီးလမ်း၊
	စက်မှုစုန်၊ လိုင်သာယာမြို့နယ်၊
ရန်ကုန်တိုင်	အေသကြီး။
	ရက်စွဲ - ၂၀၁၈ ခုနှစ် ဩဂုတ်လ ( 🤉 ူ ) ရက်
အကြောင်းအရာ။	၊ Thai Faster Products and M.K. Co., Ltd. of ဂျယ်လီမိမှုတို
	ထုတ်လုပ်ဖြန့်ဖြူးရေးလုပ်ငန်းအတွက် ပတ်ငန်းကျင်ရပ်မိရပ်အဒေသစံများ၏
	အကြံပြုချက်များ ညှိနိုင်းပြန်ကြား ပေးပါရန်ကိစ္စ၊
ရည်ညွှန်းချက် ။	၊ ၂၀၁၈ ခုနစ် မတ်လ (၂၀) ရက် နေ့တွင် GMES Co., Ltd. နှင့် Thai Faster
	Products and M.K. Co., Ltd. တို့၏ နှစ်ဦးသဘောတူစာချစ်။
အထက်အစ	ကြာင်းအရာပါကိစ္စနှင့်စဉ်လူဦး၍ GMES Co., Ltd. နှင့် Thai Faster Products
	td. တို့သည် ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်၊ ရွှေလင်ပန်းစက်မှုစုန်၊
	လေမ်း မြေကွက်အမှတ်(၄၆၇/က) ရှိ ဂျယ်လီမျိုးစုံထုတ်လုပ်ဖြန့်ဖြူးရေးလုပ်ငန်း
စက်ရုံ အတွက် ပတ်	ဝန်းကျင်စီမံစန် ခွဲမှုအစီအစဉ် (EMP) ရေးဆွဲပေးရန် ရည်ညွှန်းပါသဘောတုစာချပ်
ချပ်ဆိုခဲ့ကြပါသည်။	EMP အစီရင်ခံတတွင် အမှာပြည်သူသဘောထားရသူမြင်းနှင့် သတင်းအချက်
	ခြင်း ခေါင်းစဉ်အတွက် ရေးသားဗော်ပြရန် ၂၀၁၈ ခုနှစ် ဩဂုတ်လ (၅) ရက်နေ့
တွင် ရပ်ကွက်နေရပ်	ခ်မိရပ်စများနှင့် ညှိနိုင်းအကြံပြုချက်များ ရယူခဲ့ပါသည်။ ယင်းအကြံပြုချက်များကို
ဖတ်ရှုခလုလာခဲ့ရာဝ	ငွင် ဖော်ပြပါအရက်များကို Thai Faster Products and M.K. Co., Ltd. မှ
ပြန်လည်ရှင်းလင်းခ	အစာလိုပါသဖြင့် ဖြေရှင်းပေးရမည့် မေးခွန်းများကို အောက်တွင်ဖော်ပြ
ထားပါသည်။	
(၁) ရပ်ကွက်	နေရာ်မိရပ်ဖပြည်သူများ၏အကြံပြလွှာ
(က) က	လေးများကျန်းမာရေးအတွက် ဆိုးဆေး ရောင်းဆိုးပစ္စည်းလျော့ချပြီး ကျန်းမာရေး
	ဦညွှတ်စွာ ထုတ်လုပ်စေရမင်ပါသည်။

(၈) ကျွန်းမာရေးနှင့်ဆီညွက်သော အစားအစာထဲတွင်ရောဂါမဖြစ်စေပဲ အားရှိစေရန် ကောင်းမွန်စွာ ထုတ်လုပ်စေရင်ပါသည်။ (ဂ) ဓာတုဆိုးဆေးများသုံးစွဲခြင်းမပြရန် (ဃ) ပစ္စည်းထုတ်ပိုးမှုသန့်ရှင်းမှုရှိစေရန် (c) လေ၊ ရေ၊ မြေ၊ အသံနှင့်ပတ်သက်၍ ပတ်ဝန်းကျင်ကို ထိခိုက်မှုမရှိစေရန် (စ) စက်ရုံလုပ်သားများထိနိုက်မှုမရှိစေရန်၊ စက်ရုံပတ်ဝန်းကျင်သန့်ရှင်းစေရန် (ဆ) နိဝိငံတော်အစိုးရလမ်းညွှန်မှုဖြင့် လုပ်ဆောင်ပြီး စက်ရုံပတ်ဝန်းကျင် ကျန်းမာရေး လူမှုရေး ထိခိုက်မှုစစရန် လုပ်ဆောင်စေချင်ပါသည်။ ÷, လေးစားစွာဖြစ် 1081 Kyaw Son Win Managing Director reen Mynnessat Environmental Services Co., Ltd. မိတ္တူကို -ရံလောစ်
# APPENDIX (22): Proponent Commitment Letter on Suggestion of Public Consultation Meeting



အကြံပြုချက်ဆန္ဒသဘောထားများ	ဆောင်ရွက်ပေးမည့်အစီအစဉ်
ရာ်ကွက်နေရာ်စိရာ်ဗပြည်သူများ၏ဆန္ဒသဘောထားများ	
(က) ကလေးများကျန်းမာရေးအတွက် ဆိုးဆေး စရာင်းဆိုး ပစ္စည်းလျော့ရှမြီး ကျန်းမာရေး နှင့်ညီညွှတ်စွာ ထုတ်လုစ်စေချင်ပါသည်။	(က) တာမြစ်ဆိုးသေးများသုံးရှိခြင်း မရှိပါ။
(စ) ကျန်းမာရေးနှင့်ညီညွှတ်သော အစားအစာထဲတွင်ရောဂါမဖြစ်စေပဲ အားရှိစေရန် ကောင်းမွန်စွာ ထုတ်လုပ်စေရင်ပါသည်။	(စ) ကျန်းမာရေးနှင့်ညီညွှတ်သော အစားအစာများ ကိုသာ ထုတ်လုပ်ဖဲသည်။ ,
(ဂ) ဓာတုဆိုးဆေးများသုံးရွဲခြင်းမပြရန်	(ဂ) တားဖြစ်ဆိုးဆေးများသုံးစွဲဖြင်း မရှိမါ**
(ဃ) ပစ္စည်းထုတ်ပိုးမှုသန့်ရှင်းမှုရှိစေရန်	(ယ) စနစ်တကျကြပ်မတ်ပြီး သန့်ရှင်းသင်ရပ်သည့် ထုတ်ပိုးမှုစနစ် ရှိပါသည်။
(င) လေ၊ ရေ၊ မြေ၊ အသံနှင့်ပတ်သက်၍ ပတ်ဝန်းကျင်ကို ထိစိုက်မှုမရှိစေရန်	(င) ပတ်ဝန်းကျင်စီမံခန့် ခွဲမှုအစီအစဉ်ပါ လမ်းညွှန် ရက်နှင့်အညီ လိုက်နာတောင်ရွက်ပါမည်။
(စ) စက်ရုံလုပ်သားများထိခိုက်မှုမရှိစေရန်၊ စက်ရုံပတ်ဝန်းကျင်သန့်ရှင်းစေရန်	(စ) လုပ်ငန်းရွင်ဘေးအန္တရာယ်ကင်ရင်းရေး ပတ်ဝန်းကျင်သန့်ရှင်းရေးတို့အတွက် စက်ပစ္စည်း များစနစ်တကျလည်ပတ်ခြင်း၊ တကိုယ်ရည်ထုံး အကာအကွယ်ပစ္စည်းများ သုံးစွဲစေခြင်းတို့ကို ကြင်မတ်ဆောင်ရွက်လျက်ရှိပါသည်။
(ဆ) နိုင်ငံတော်အစိုးရလမ်းညွှန်မှုဖြင့် လုဝ်ဆောင်ပြီး စက်ရွံပတ်ဝန်းကျင် ကျန်းမာရေး၊ လူမှုရေး ယီမိုက်မှုစေရန် လုပ်ဆောင်စေရှင်ပါသည်။	(ဆ) ပတ်ဝန်းကျင်စီမံစန့်ခွဲမှုအစီအစဉ် လမ်းညွှန် ချက်နှင့်အညီ လိုက်နာဆောင်ရွက်ဖါမည်။

# Thai Faster Products and M.K. Co., Ltd. မှ ပတ်ဝန်းကျစ်ရစ်မိရစ်စဒေသစံများ၏ ဆန္ဒသဘောထားများအပေါ် စက်ရုံမှုဆောစ်ရွက်ပေးမည့် အစီအစဉ်၊

ကျန်းမာရေးဘေးအန္တရာယ်ကင်းရှင်းကြောင်း ထောက်ခံချက်လက်မှတ် ျပၥစခုနှစ်၊ ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးဥပဒေပုဒ်မ- ၁၇၃၊ ၁၇၆၊ ၁၈၁ တို့အရ အများပြည်သူတို့အား ကျွန်းမာရေးဘေးအန္တရာယ်ဖြစ်စေတတ်သော လုပ်ငန်းကို စစ်ဆေးရာတွင် ဥပဒေပါစည်းကမ်းချက်များနှင့် ကိုက်ညီကြောင်း စစ်ဆေးတွေ့ရှိရသဖြင့် အောက်ဖော်ပြပါလုပ်ငန်းအား အများပြည်သူအတွက် ကျန်းမာရေးဘေးအန္တရာယ်ကင်းရှင်းကြောင်း ထောက်ခံချက်လက်မှတ်ကို ထုတ်ပေးလိုက်သည်-ASSANDS (MEGALE ) W. HW ထောက်ခံချက်လက်မှတ်သက်တမ်း းဘဏ္ဍာရေးနှစ်(၁) အတွက်သာ(၀၄, စ(၂)) (၀၃, စ(၉)) ထီ 0200050050050000 (m) 300 200 (w) 200000 2000 100000 (a) source france (a) approved to france (a) Sotor) : (app) (n) sound 2000000 ပြည်သူ့ကျန်းမာရေး ပြည်သူ့ကျန်းမာရေးနှင့်ဈေးများလုပ်ငန်းတာဝန်ခံအဖွဲ့ NQ311243 ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ

### **APPENDIX (23): Recommendation for Health and safety**

### **APPENDIX (24): Recommendation for Food Manufacturing**

ကျန်းမာရေးနှင့်အားကစားဝန်ကြီးဌာန Ministry of Health and Sports အစားအသောက်နှင့်ဆေးဝါးကွပ်ကဲရေးဦးစီးဌာန Department of Food and Drug Administration အစားအသောက်ထုတ်လုပ်ခြင်းထောက်ခံချက်လက်မှတ် RECOMMENDATION FOR FOOD MANUFACTURING ကျွန်းမာရေးနှင့်အားကစားဝန်ကြီးဌာန၊ အစားအသောက်နှင့်ဆေးဝါးကွပ်ကဲရေးဦးစီးဌာနသည် အမျိုးသား အစားအသောက်ဥပဒေ ပုဒ်မ(၉)အရ အောက်ပါလုပ်ငန်းအား ဤထောက်ခံချက်ကို ထုတ်ပေးလိုက်သည်။ Ministry of Health and Sports, Department of Food and Drug Administration issued this certificate for the under-mentioned food manufacturing facility according to the Section (9) of the National Food Law. လုပ်ငန်းအမည် Thai Faster Products and M.K Co., Ltd Name of Business Thai Faster Products and M.K Co., Ltd လုပ်ငန်းလိပ်စာ အမှတ်(၄၆၇-က)၊ မြေတိုင်းရပ်ကွက်၊ အမှတ်( ၅)၊ ကနောင်မင်းသားကြီးလမ်း၊ ရွှေလင်ပန်းစက်မှုခုန်၊ လိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။ No. (467-Ka), Myaytine Block, No. 25, Kanaung Minthargyi Street, Address Shwelinpan Industrial Zone, Hlaingtharyar Township, Yangon Region, Myanmar. ထောက်ခံချက်ထုတ်ပေးသည့် ဂျယ်လီ အစားအသောက်အမျိုးအစား Product range : Jelly သည့်န်းချက် ဗဟိုအစားအသောက်နှင့်ဆေးဝါးကြီးကြပ်ကွပ်ကဲရေးကော်မတီ (၀၁/၂၀၁၇) အစည်းအဝေး Reference : Central Food and Drug Supervisory Committee (01/2017) Meeting ထောက်ခံချက်အမှတ် o 1/20050/000 Sa 2/17047/Hta La Registration No : ထုတ်ပေးသည့်ရက်စွဲ ၂၀၂၀ ခုနှစ်၊ မတ်လ (၁၉)ရက် 19<sup>th</sup> March, 2020 Date of Issue : ၂၀၂၂ ခုနှစ်၊ မတ်လ (၁၈)ရက် ကွန်ဆုံးရက်စွဲ 18<sup>th</sup> March, 2022 Expiry Date : ညွှန်ကွားရေးမူးချုပ်) (Director General) pp)/mmentene (လိုက်နာရမည့် ညေးကမ်းချက်များ ကျောဘက်တွင်)

Green Myanmar Environmental Services Co., Ltd.

THE REPUBLIC OF THE UNION OF MYANMAR, ISLAMIC RELIGIOUS AFFAIRS COUNCIL, (H.Q) ගඟාගම්ම HCC 05184 အောက်တိုဘာလ၊ ၂၀ရက်၊ ၂၀၂၁ ထုတ်ပေးသည် ရက်စွဲ Thai Faster Products and M.K Co.,Ltd Daiya Moto myoholdo (Grape, Strawberry, Orange) အနံ့အရသာ Jelly အမျိုးမျိုး ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် အစူလာမ်သာသနာရေးရာကောင်စီဌာနချစ်၊ တလာလ် အသိအမှတ်ပြံလွှာထုတ်ပေးရေးကော်တေီသည် အထက်ဖော်ပြပါ ကုန်ပစ္စည်း ထွတ်လုပ်မှု အဆင့်ဆင့်ကို စီစစ်ရာတွင် အစ္စလာမ့်တရားတော်အရ စားသုံးပိုင်စွင့်ရှိကြောင်း တွေ့ရှိပါသဖြင့် ကြီးဟုလာလီးအသိအမတ်ပြီလွှာကို ထွတ်ပေးလိုက်ပါသည်။ (၁) အထက်ဖော်ပြီးပါ တလာလီ တံဆိပ်ကို ကုန်ပစ္စည်းပေါ်တွင် ရိုက်နိုင်ဖော်ပြရမည်။ (၂) ကိုအသိအမှတ်ပြုလွှာ၏ ကျောဘက်ပါ ထွားတမ်းရက်များကို လိုက်နာရပါ (၃) ဤအသိအမှတ်ပြုလွှာ၏ သက်တမ်းသည် စော်စစ်စာ ၁၅က် ၂၀၂၀ (၃) အထိသာဖြစ်သည် (အလ်ဟာဂ်မောင်လာနာ ရိုက်စ်အိုမရိ ခေါက်တာ စာနည်မင်းသိန်း) M.B., B.S Ygn မဒနီ - ရင်းတော်၊ အလ်အစ်ဟရ် - ကိုင်ရှိ ဆေးဘက်ဆိုင်ရာအတိုင်ပင်ခံ ອມວນດຳສັ່ວິຄາໝາດີເປັນປໍລໍ ILST HET (အလ်ဟာဂ်ူမင်းသိန် ်ကလာလ် အသိအမဂ ဘတ်ပေးရေးကော်မင No. 183, Bo Sun Pat Street, Pabedan Township, Yangon, Myanmar. Ph : +951 252608 E-mail : irac@myanmarmic.com

# **APPENDIX (25): Certified of HALAL MYANMAR**

Green Myanmar Environmental Services Co., Ltd.

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် ရန်ကုန်တိုင်းဒေသကြီးအစိုးရ ရန်ကုန်ဖြို့တော်စည်ပင်သာယာရေးကော်မတီ စိမ်ရေးရာဌာန 29,10,100,00 ( lo 1 / lo b) 200046 လစ်ငန်းလိစ်စစ် ( စက်ရုံ၊ အလုပ်ရုံ၊ သိုလှောင်ရုံသုံးစွဲရန် အထောက်အကူပစ္စည်းထုတ်လုပ်ခြင်း၊ ရောင်းခူခြင်း၊ တည်စင်းခြင်း၊ ဖြန့်ဖြူးခြင်း၊ ဝန်ဆောင်မှုလုပ်ငန်း၊ အခြားလုပ်ငန်း) ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ၊ စီမံခန့်ခွဲရေးဆိုင်ရာ နည်းဥပဒေ၊ အခန်း (၂) နည်းဥပဒေ ၃(၅)အရ အောက်အမည်ပါသူတို့အား လိုင်စင်နန်း ၁၀၀၀၀၀၀/- တွစ် ( စာဖြင့်၊ ကျပ် တစ်ဆယ်သိန်းတိတ် ) ပေးသွင်းစေပြီး လှိုင်သာယာ(အရှေ့ဝိုင်း) မြို့နယ်၊ ရွှေလင်ပန်းစက်မှုဇုန် ရှင်ကွက် ၊ ကမ္ဘာဝီမင်းသားကြီး လမ်း ၊ အမှတ် ၄၆၇/တ၊ အခန်းအမှတ် - တွင် Thai Faster Products and MK Co.,Ltd အမည်ပါ ဂျယ်လီအမျိုးမျိုးထုတ်လုပ်ခြန်ခြားရောင်းချမြင်း ဆိုင်/လုပ်ငန်းအား လုပ်ကိုင်ခွင့်မြ၍ ဤလုပ်ငန်းလိုင်စင်ကို ထုတ်ပေးလိုက်သည်။ အမည် နိုင်ငံသားစီစစ်မှေ ကယ်ပြားဖမှင r85m နေမှုက်ကနေပါတီတစုနေ အီတရကြားလာမိတုန်ရလ ကေ)ဂူမီခု GEAR /www.(\$E)000000 လိုင်သာယာ(အဓရှုပိုင်း)မြနယ်။ ဤလုပ်ငန်းလိုင်စင်သည် ၂**၀ ဥခုနှစ် မတ်လ ၃၀** ရက်နေ့တွင် သက်တမ်းကုန်ဆုံးသည်။ ဤလုပ်ငန်းလိုင်စင်အား မြင်သာသောနေရာတွင် မှန်ဘောင်ဖြင့် ခိုတ်ဆွဲထားရမည်။ \*မူးတွဲပါလိုင်စင်စည်းကမ်းများအား လိုက်နာဆောင်ရွက်ရမည်။

### **APPENDIX (26): Permitted of YCDC**



# APPENDIX (27): Contract of Land and Building leasing



# **APPENDIX (28): Record of Covid-19 Vaccination for employees**

	laing TharYar Township,	Canaung Min Tha	K CO.,LIII r Gyi Street, Shwe Lin Pan haifaster.mm@gmail.com Tel:
5దొరి\ జంది నో	διοειφμ		
ရွှေလင် <mark>ပန်း</mark> စ	က်မှုစုန်၊ စက်မှုစုန်ကြီးကြပ်မှုဂေ	က်မတီ	
လိုင်သာယာ	ရို့နယ်၊ <mark>ရန်ကုန်တိုင်းဒေသ</mark> ကြီး၊		
		ရတ်စွဲ၊	နေနာ့ ငျပ၂၊ ဟ ခ းဂ်ာနာ ၅၄ ။
အကြောင်းအရာ၊	၊ Covid 19 ကာကွယ်တော	သိုးနံသည့်ကိစ္စများနှင့်	ပတ်သက်၍ တင်ပြခြင်။
၁။ အထက်ပါ အကြေ	ဝင်းအရာကိစ္စနှင့်ပတ်သက်၍ ဂ	ျွန်တော်များThai Fa	ster Products And M.K Co., Ltd
na ana ing kang sa kang		<b>u</b> 1	
ාානි <del>න</del> ශුති (දමං	၇/က)၊ ကနောင်မင်းသားကြီးဂ	ပမ်း၊ ရွှေလင်ဗန်းစက်	ခ်မှုစုန်းဈ လှိုင်သာယာမြို့နယ် တွန်
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉	၇/က)၊ ကနောင်မင်းသားကြီးဂ ၇ ကာကွယ်ဆေးအမှန်တကယ်	ပမ်း၊ ရွှေလင်ဗန်းစက်	ခ်မှုစုန်းဈ လှိုင်သာယာမြို့နယ် တွင်
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉	၇/က)၊ ကနောင်မင်းသားကြီးက ့ ကာကွယ်ဆေးအမှန်တကယ ။	ပမ်း၊ ရွှေလင်ဗန်းစက်	ခ်မှုစုန်းဈ လှိုင်သာယာမြို့နယ် တွင်
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉ ဖြစုတင်ပြဆင်ပါသည်	ျ/က)၊ ကနောဝ်ခင်းသားကြီးဂ ့ ကာကွယ်ဆေးအမှန်တကယ် ။ ကျား – ၁၀ ဦး	ပမ်း၊ ရွှေလင်ဗန်းစက်	ခ်မှုစုန်းဈ လှိုင်သာယာမြို့နယ် တွင်
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉ ဖြစုတင်ပြဆင်ပါသည်	ျ/က)၊ ကနောင်မင်းသားကြီးဂ ၂ ကာကွယ်ဆေးအမှန်တကယ် ။ ရ ကျား - ၁၁ ဦး မ - ၂၀ ဦး	ပမ်း၊ ရွှေလင်ဗန်းစက်	ခ်မှုစုန်းဈ လှိုင်သာယာမြို့နယ် တွန်
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉ ဖြစုတင်ပြဆင်ပါသည်	ျ/က)၊ ကနောဝ်ခင်းသားကြီးဂ ့ ကာကွယ်ဆေးအမှန်တကယ် ။ ကျား – ၁၀ ဦး	ပမ်း၊ ရွှေလင်ဗန်းစက်	ခ်မှုစုန်းဈ လှိုင်သာယာမြို့နယ် တွင်
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉ ဖြစုတင်ပြဆင်ပါသည်	ျ/က)၊ ကနောင်မင်းသားကြီးဂ ၂ ကာကွယ်ဆေးအမှန်တကယ် ။ ရ ကျား - ၁၁ ဦး မ - ၂၀ ဦး	သင်း၊ ရွှေလင်ဝန်းစက ၃ လိုးနနိုင်ရန်အတွက	ခ်မှုစုန်းဈ လှိုင်သာယာမြို့နယ် တွင်
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉ ဖြစုတင်ပြဆင်ပါသည်	ျ/က)၊ ကနောင်မင်းသားကြီးဂ ၂ ကာကွယ်ဆေးအမှန်တကယ် ။ ရ ကျား - ၁၁ ဦး မ - ၂၀ ဦး	သင်း၊ ရွှေလင်ဝန်းစက ) လိုးနနိုင်ရန်အတွက	ခ်မှုရန်းရ လှိုင်သာယာမြို့နယ် တွင် ဂ ဖူးကွဲပါ စာရွက်စာတမ်းနှင့်အတု
သည် အမှတ် (၄၆ တည်ရှိပြီး ကိုဗစ်-၁၉ ဖြစုတင်ပြဆင်ပါသည်	ျ/က)၊ ကနောင်မင်းသားကြီးဂ ၂ ကာကွယ်ဆေးအမှန်တကယ် ။ ရ ကျား - ၁၁ ဦး မ - ၂၀ ဦး	သင်း၊ ရွှေလင်ဝန်းစက ) လိုးနနိုင်ရန်အတွက လေးရ	ခ်မှုရန်းရ လှိုင်သာယာမြို့နယ် တွင် ဂ် မူးကွဲပါ စာရွက်စာတမ်းနှင့်အတူ ဘးစွာဖြင့်

●ల్	အမည်	အဘအမည်	မွမသက္ကကရာစ်	ကျား/မ	တိုင်း/ပည်နယ် Code	မိုန္မယ် Code	အမျိုးအစား	မှတ်ပုံတင်အမှတ်	ဆမေထိုးလိပ်စာ
၁၇	အအေးခိုင်	ဦးဟန်သိန်း	29/10/1989	Θ	ပဲခူး_၇	ပတတ	နိုင်	၁၅၆၀၈၆	ရွှေလင်ဘန်း
ວຄ	သိရိနိုင်	ဦးမောင် <mark>တို</mark> း	8/12/1986	9	ဧရာ၀တီ_၁၄	୦ବଡ	နိုင်	იმემეი	ရွှေလင်ဘန်း
၁၉	မဓာင်မဓာင်မငြှ	ဦးလှအုန်း	2/11/1984	ကျား	ပဲခူး_၇	ရတန	နိုင်	၀၉၂၁၂၂	ရွှေလင်ဘန်း
Jo	သက်နှင်းဝေ	ဦးတင်ဆွေ	8/2/1993	0	ဧရာ၀တီ_၁၄	လပတ	နိုင်	ວຄວຄຄ	ရွှေလင်ဘန်း
၂၁	အအေးဖျိုး	ဦးလှစိုးဝင်း	12/8/1985	9	မကွေး_၈	စလန	နိုင်	၁၁၈၃၂၂	ရွှေလင်ဘန်း
μ	သင်းသင်းထွမေ	ဦးမြသန်း	8/3/1995	9	ရောဝတီ_၁၄	ကခန	နိုင်	၁၁၄၇၈၂	ရွှေလင်ဘန်း
R	အဓာင်ကိုမင်း	ဦးအေးသိန်း	15/06/1986	ကျား	ပဲခူး_၇	ပတတ	နိုင်	၁၀၀၂၅၀	ရွှေလင်ဘန်း
J9	තේරෝංභෙරි	ဦးနေဝင်း	9/7/1988	ကျား	ရော၀တီ_၁၄	ကပန	နိုင်	၁၇၉၃၄၂	ရွှေလင်ဘန်း
JO	န္ဖွဲန္ဖွဲသန်း	ဦးတင်ဝင်း	3/8/1983	9	ရန်ကုန်_၁၂	တကန	နိုင်	၁၄၉၉၇၁	ရွှေလင်ဘန်း
JG	ဧပရယ် သင်း	ဦးသိန်းစိုး	28/03/2002	Θ	ရန်ကုန်_၁၂	လသယ	နိုင်	၀၉၇၂၀၉	ရွှေလင်ဘန်း
JN	ဉ မ္မမာလွင်	ဦးကြည်ငြိမ်း	30/12/1983	9	ရောဝတီ_၁၄	୦ବଡ	နိုင်	၂၁၀၅၁၃	ရွှေလင်ဘန်း
၂၈	ပန်းအိဖြ	ဦးသန်းထွန်း	25/06/1999	9	တနင်္သာရီ_၆	သရခ	နိုင်	აკეციც	ရွှေလင်ဘန်း
JC	အအေခေ	ဦးပြုံးချိ	14/03/1989	Θ	ရောဝတီ_၁၄	အမတ	နိုင်	ပ၅၄၁၈၂	ရွှေလင်ဘန်း
90	သိရိမ္ပန်	ဦးချိုဒေား	12/11/1985	Θ	ရောဝတီ_၁၄	୦ବଡ	နိုင်	იემეეიი	ရွှေလင်ဘန်း
65	<mark>લીસ્લી</mark> ર	ဦးသိန်းတန်	22/11/2000	ကျား	ပဲခူး_၇	က၀န	နိုင်	၂၃၄၁၁၀	ရွှေလင်ဘန်း

# **APPENDIX (29): Material Safety Data Sheet (MSDS)**

#### **Tri-potassium Citrate**



afety data sheet cording to Regulation (EC) No. 1907/2006 (REACH)	00	1111		- III
-Potassium citrate monohydrate ≥ 99%, P	h.Eur., USP	Contraction of the second s	otassium citrate monohydrate ≥ 99%, Ph.Eur., I	JSP
ticle number: X888		artic	e number: X888	
Skin protection			Kinematic viscosity	not relevant
			Solubility(ies) Water solubility	-1.500 <sup>9</sup> /ı at 20 °C
hand protection     Wear suitable gloves. Chemical protecti     type of material	on gloves are suitable, which are tested according to EN	374.	Partition coefficient Partition coefficient n-octanol/water (log value):	this information is not available
NBR (Nitrile rubber)     material thickness			Vapour pressure	not determined
>0,11 mm			Density and/or relative density	
<ul> <li>breakthrough times of the glove ma &gt;480 minutes (permeation: level 6)</li> </ul>	terial		Density	1,98 9/cm² at 20 °C
other protection measures			Relative vapour density	information on this property is not available
Take recovery periods for skin regenera recommended.	tion. Preventive skin protection (barrier creams/ointmer	nts) is	Particle characteristics	No data available.
Respiratory protection			Other safety parameters	
			Oxidising properties	none
		9.2		
Respiratory protection necessary at: Du least 80 % of airborne particles, colour of	st formation. Particulate filter device (EN 143). P1 (filters ode: White).	at	Information with regard to physical hazard classes:	hazard classes acc. to GHS (physical hazards): not relevant
Environmental exposure controls			Other safety characteristics:	There is no additional information.
Keep away from drains, surface and gro		SE	TION 10: Stability and reactivity	
ECTION 9: Physical and chemical	New York Control of Co	10.1	Reactivity	
Information on basic physical and che Physical state	emical properties solid		The product in the delivered form is not dust ex leads to the danger of dust explosion.	plosion capable; the enrichment of fine dust ho
Form	crystals	10.2	Chemical stability	
Colour	white		The material is stable under normal ambient an perature and pressure.	d anticipated storage and handling conditions o
Odour	odourless	10.3	Possibility of hazardous reactions	
Melting point/freezing point Boiling point or initial boiling point and	>180 °C boiling not determined		Violent reaction with: strong oxidiser	
range			Conditions to avoid	
Flammability	this material is combustible, but will not ign readily		Keep away from heat. Decompositon takes play Incompatible materials	e from temperatures above: >230 °C.
Lower and upper explosion limit	not determined	1.1.1	There is no additional information.	
Flash point Auto-ignition temperature	not applicable	10.6	Hazardous decomposition products	
Decomposition temperature	>230 °C		Hazardous combustion products: see section 5.	
pH (value) land (en)	7,5 - 9 (in aqueous solution: 50 9/j, 20 °C)	e 5 / 12 Irela	nd (en)	Pag
eland (en)	7,5 - 9 (in aqueous solution: 50 9/j, 20 °C)			Page
	7,5 - 9 (in aqueous solution: 50 9/j, 20 °C)	s	nd (en) afety data sheet cording to Regulation (EC) No. 1907/2006 (REACH)	Page
eland (en) <b>fety data sheet</b> ording to Regulation (EC) No. 1907/2006 (REACH) Potassium citrate monohydrate 2 99%, I	7,5 - 9 (in aqueous solution: 50 %/, 20 °C) Page	ROTH S	afety data sheet cording to Regulation (FC) No. 1907/2006 (REACH) I-Potassium citrate monohydrate 2 99%, Ph.Eur.,	80
eland (en) <b>fety data sheet</b> ording to Regulation (EC) No. 1907/2006 (REACH) <b>Potassium citrate monohydrate 2 99%, I</b> Icle number: X888	7.5 - 9 (in aqueous solution: 50 %), 20 °C) Page Ph.Eur., USP	ROTH	afety data sheet conting to Regulation (FC) No. 1907/2006 (REACH) i-Potassium citrate monohydrate ≥ 99%, Ph.Eur., ticle number: X888	80
eland (en) <b>fety data sheet</b> ording to Regulation (EC) No. 1907/2006 (REACH) <b>Potassium citrate monohydrate 2 99%, I</b> <b>icle number: X888</b> <b>ECTION 11: Toxicological inform</b>	7.5 - 9 (in aqueous solution: 50 %), 20 °C) Page Ph.Eur., USP	ROTH	afety data sheet cording to Regulation (FC) No. 1907/2006 (REACH) I-Potassium citrate monohydrate 2 99%, Ph.Eur.,	80
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#### Thai Faster Products & M.K Co., Ltd.

tassium citr	ate monohydrate ≥ 99%, Ph.Eur., USP			-Potassium citrat	e monobudes	(REACH)
number: X8	8			ticle number: X888		te 2 33%, Flicture, Oar
TION 14:1	Transport information			Industrial En	nissions Direct	tive (IED)
UN number	or ID number	not subject to transport regulations		VOC content		
	shipping name nazard class(es)	not assigned none		VOC content		2
Packing gro		not assigned		Directive on electronic eq	the restriction upment (RoH	n of the use of certain IS)
	ntal hazards	non-environmentally hazardous acc. to th gerous goods regulations	ne dan-	not listed		
Special pre-	cautions for user	gerous goods regulations			oncerning the (R)	establishment of a Eu
	additional Information.			not listed Water Frame	work Directiv	e (WFD)
	ansport in bulk according to IMO ins not intended to be carried in bulk.	struments		List of pollu		
Informatio	n for each of the UN Model Regulatio	ns.		Name of	substance	Name acc. to inver
	f dangerous goods by road, rail and	inland waterway (ADR/RID/ADN) - Addit	ional	tri-Potassiur Ity	n citrate mono- drate	Metals and their comp
	to ADR, RID and ADN.			Legend A) Indi	cative list of the m	ain poliutants
	al Maritime Dangerous Goods Code	(IMDG) - Additional information		Regulation o	n the marketi	ing and use of explosiv
Not subject Internation	al Civil Aviation Organization (ICAO-	IATA/DGR) - Additional information		not listed		
	to ICAO-IATA.			not listed	n drug precur	SOTS
TION 15: I	Regulatory information			Regulation o	n substances	that deplete the ozon
		egislation specific for the substance or n	nixture	not listed Regulation o	oncerning the	export and import of
	rovisions of the European Union (EU) s according to REACH, Annex XVII			not listed	1000-54008-5400 1000-540	
not listed				Regulation o not listed	n persistent o	rganic pollutants (PO
List of subs	tances subject to authorisation (REA	CH, Annex XIV)/SVHC - candidate list		Other inform	ation	
Seveso Dire	ctive					otection of young peop Directive (92/85/EEC) f
2012/18/E	J (Seveso III)	te	12	der the Mater National inv		Directive (92/85/EEC) 1
No D	ungerous substance/hazard categories	Qualifying quantity (tonnes) for the ap- plication of lower and upper-der re-	Notes	Country	Inventory	
	not assigned	quirements		AU	AICS	2
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ata sheet ROTH ium citrate monohydrate ≥ 99%, Ph.Eur., USP ber: X888 astrial Emissions Directive (IED) C content 0 % 0 9/1 C content ctive on the restriction of the use of certain hazardous substances in electrical and tronic equipment (RoHS) listed ulation concerning the establishment of a European Pollutant Release and Transfer ister (PRTR) isted er Framework Directive (WFD) t of pollutants (WFD)
Name of substance
tri-Potassium dtrate monohydrate Name acc. to Inventory Metals and their compounds lated in a) Indicative list of the main pollutants ulation on the marketing and use of explosives precursors listed ulation on drug precursors isted ulation on substances that deplete the ozone laver (ODS) listed ulation concerning the export and import of hazardous chemicals (PIC) listed ulation on persistent organic pollutants (POP) listed er information ective 94/33/EC on the protection of young people at work. Observe employment restrictions un-the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. ional inventories AICS substance is listed IECSC substance is listed EU ECSI substance is listed мх INSO substance is liste substance is liste NZ NZIOC PH PICCS substance is listed TŴ Page 10 / 12

TWA VOC Volatile Organic

cemant le transport Internatio tions concerning the Internatio

Very Persis y literature references and sources for data gulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures, gulation (EC) No 1272/2008 (EACH), amended by 2020/87/EU. yeement concerning the International Carriage of Dangerous Goods by Road (ADR), Regulations neeming the International Carriage of Dangerous Goods by Rail (RD), International Maritime Dan-rous Goods Code (IMDG), Dangerous Goods Regulations (DGR) for the air Carasport (ATA). claimer

ns of used ab International Maritime Dangerous Goods Code

No-Longer Polymer Persistent, Bioaccumulative and Toxic

Short-term exposure limit

Time-weighted average

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Substance of Very High Conce

ion and Re

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handises Dangere us goods by Rail)

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is information is based upon the present state of our knowledge. This SDS has been compiled and solely intended for this product.

Ireland (en)

Page 11 / 12

Ireland (en)

Page 12 / 12

ROTH

#### Maltodextrin

Section 1. Product and Company Identification		Section 3. Composition / Info	mation on Ingredients	
Product Name Maltodextrin	6	Common Name	Mollodeshin	
AS Number 9050-36-6		Formula CAS Number	IC <sub>4</sub> H <sub>10</sub> O <sub>2</sub> h	
the second second		CAS Number	9050-36-6	
archem . fine & specialty chemicals 15 Haguenot Street	EMERGENCY RESPONSE NUMBER	COMPONENT	CAS NUMBER	CONCENTRATION
ww Rochella, NY 10801	Toll Free US & Catada: 1 (800) 255:3924	Mohodexhin	9050.366	95%
(914) 654.6800 7 (914) 654.6899	All other Origins: 1 (813) 248/0585	Woter	7732-185	5%
🖗 parchem.com 🛛 🖀 info@parchem.com	Collect Colls Accepted	Sector 4. First Aid Memores		
ection 2. Hazards Identification			Caller and the	522
	Not classified as a leaserdous substance or mixture	Skin Contact: Kits indebig Skin Contact: Kits with w Inhalation: Move to itset a		e eyendi
according to OSHA Hazard Communication Stand	land 1910.1200.		r 1 water und afterwards drink pierty o	t water
memonicy Overview: Product dust may be int	Italing to eyes, skin and requiratory system. Fine dust	Notes to Physician: Treat		
spersed in air may ignite.	te de la construction de la fondation de la construction de la const	I wante water and the		
ppearanxes White hysical States Foundar		Section 5. Firefighting Means	161	
dar: Odorieta		Stammable Properties: F	ne dust dispensed in six may ignite. I	lisis of ignition followed by None propag
				lation of dust, e.g. on floors and ledges.
otential Health Effects		Suitable Extinguishing M file surrounding environment.		at are appropriate to local circuitatances
vinciple Novtex of Exposure: Eye contact, Si	in contract, and innoistion.	<b>Uncuitable Extinguishing</b>		
loute Effects		Hazardous Combustion	Vodects: Corbon monoxide (CO),	Carbon dioxide (CO <sub>2</sub> ).
Eyes: May cause slight instation		Englading Date		
ikin: May cause slight skin instation abalation: May cause instation of respiratory tro	et	Explosion Data Semitivity to Mechanica	Impact: No information available.	
ngestion: Health injuries are not known or expec		Sensitivity to Static Dirch	ærge: Yes (m dav),	
hronic Effects: Nore known.			from the Chemical: None known	
Aggravated Medical Conditions: Sin disord			d Precautions for Firefighters: / MSHA/74OSH (approved ar equiva	is in only fire, wear self-contained breath and null protective sear.
Patential Environmental Effects: See Sector Paxicological Information: See Sector 11 for		obtained by story a cardinal	and a second teleformer in addition	and and have a floor
and the more set of the set of	and the second the second second	NFPA Bating		
		Healthi 0		
		Floremobility: 1 Reactivity: 0		
			25	
		Section & Accidental Release	Mecoures	
		Paranal Presentions 20	oid dust formation. Use personal pro	artine and integral
				ed il significant spillages connot be conta
Sion 7. Handling and Starsge		Evaporation Rate: No information Vapor Density: No information		
	formation in confined areas. Fine dust dispersed in air may	Section 10. Stability and React	ήν	
	in of Fires and Dust Explosions in Agricultural and Food	Chemical Stability: Stable or	der normal conditions	
cessing Facilities". orage: Neep containers tightly clased in a dry, co	oci ord well-writisted place	Conditions to Avoid: Avoid		
	n searce sector form.	Incompatible Materials: St		
ctor B. Exposure Controls / Personal Protection		Hazardous Decomposition Possibility of Hazardous P	Products: None known. eactions: None under normal proc	and the second se
posere Limita		ressonny or nozoroon a	PRODUIDS COOLD STORE STORE BEING	
emical Names Particulates not otherwise regula	ted	Section 11, Toxicological Inform	ation	
OGIH TLV: TWA: 10 eg/et (A: 3 etc/m <sup>1</sup>		Anna Tanlaha		
SHA PEL: TWA: 15 mg/m <sup>3</sup>		Acute Toxicity Product Information		
(A: 5 mg/m <sup>3</sup>		LDSD Oval: No information av		
OSH IDLH: N/A Indica: N/A		LDS0 Dermoh No intervation 1050 Interlations Maintered		
		1C50 Inhalation: Ne inform	non avariable	
	for, especially in contrast areas. Apply technical measures		nponentsi No information availab	de .
comply with the occupational exposure limits. Hav source limits of the workplace.	wener it is the duty of the user to verify this and follow given	Chemical Name: Water	3	
		Weight %: 5% 1050 Oracle 50 million fort		
rsonal Protective Equipment		1050 Oval: 90 nL/lg for 1050 Dermal: N/A		
e/Face Protection: Salety glasses with side-chi in and Body Protection: Long sleeved clothin		UC50 Inhalation: N/A		
spiratory Protections in case of insufficient ve				
	accordance with good industrial hygiene and safety practice.	Ovenic Effects	leave our beauty down at the	the manufact
tion 9. Physical and Chemical Properties			known carcinogenic chemicals in ft & Health Administration): No	
Contraction of the second second second			ce of Governmental Industria	
peterencet White		NTP (National Taxicity Pro		( design )
ysical Statet Fowder lar: Odories:			Ionn NOM.010.5TPS.1999): 1	
or Threshold: No information ovaliable		ware patternational Agency	for Research on Concerts Not	nining.
sh Point: Not applicable	3.42	Sub-Chronic Toxicity: No In		
to Ignition Temperature: No information over	clicidi#	Irritation: No Information avail	lobie	
ling Point Not applicable hting/Freezing Point No information available		Corrosivity: No information o Sensitization: No information		
mmobility limits in Airs No information avai		Neurological Effects: No Internation		
plasion Limits: No information available		Mutagenic Effects: No Inform		
It No information available por Pressure: No information available		Reproductive Effects: No int	ormation available	
ater Solubility: Soluble		Developmental Effects: No Teratogenicity: No information		
ecific Gravity: No information available		Target Organ Effects: Repi		
		1		
	Page 3 of 7			Page 4 of 7

#### Thai Faster Products & M.K Co., Ltd.

	ological	inform	ation									USA Federal Regul	lations					
Ecotoxicity: known to be n							e enriror	merti. Co	elaina na	substan	C#6		ting Substan	ices: No Clo	ts 1 or Class 11 mater	idi is known to	be used in the n	anulacture of, (
Pertistence/												1001001001001						
Bioaccumula	ation/A	com	dations	Not applic	oble.										Superfund Amendme			
Mobilitys Sol	i,ble in v	vder -										This product is n regulations conk			remicals which are s	ubject to the rej	porting requirem	ents of the Act of
Section 13.Di	hipesol C	anside	nofions								-	~			1.220142			
Waste Treat	mont A	Anther	ter Direc	na of ourse	et and co	-	and south	onine in l	-	and the	level for	SARA 311/31 Acute Health		is Categori	zation			
state, and lede								1919 I.I.			de locale	Chronic Healt		la .				
No. Contraction	ALC A	230	1214282	Ser#cap	an. —							Fire Hazard:						
Section 14. To	tropana i	informo	505									Sudden Relea		ire Hazard	t No			
												Reactive Haze	ard: No					
Domestic Ta		t Regu	ations	(USA)								Charles Area	Section 11	Heredo	us Air Pollutants	HADA Gan A	0 CED 611 TH	and at the set
DOT: Not reg	pricted											known to contai		a maturdo	a Arroundits	hung of foge a	A CIR OIL IN	a produci is not
Domestic Te	8.151			Same de	10								and iters					
TDG: Not reg		-	- Contrains	Acres and a								State Regulat	ions					
												California Pro	position 65					
Domestic Tr	anspor	Regu	lations	(Mexico)								Proposition 65 c	chemicals are	not expected	to be found in this p	roduct above t	hase naturally pr	esent in their
												agricultural sour	<b>1</b>					
	puloted																	
MEX: Not rep	pulated													ily occurring	listed chemicals from	n an obligation	to lobel.	
	100	port l	legulati	ions								Proposition 65 e	exempts nature	ily occurring	listed chemicals from	t at obligation	to label.	
MEX: Not rep	ul Trans	port f	legulat	ions								Proposition 65 e State Right-to	exempts nature -Know	3. ST				
MEX: Not rep Internations ICAO: Not re IATA: Not rep	ul Trans guicted guicted		legulati	iona								Proposition 65 e State Right-to No known cons	exempts nature Know ponents subjec	t to "Right-To	Know" legislation in	the following :	itales:	1
MEX: Not rep Internations KGAO: Not re	ul Trans guicted guicted		legulati	ions								Proposition 65 e State Right.to No known cong Chemical	exempts nature -Know	3. ST				fhode
MEX: Not rep Internationa IGAO: Not re IATA: Not re IMDG/IMO:	ul Trans guiated guiated hiat reg	olavá		iona								Proposition 65 e State Right.to No known comp Chemical Name	exempts nature -Know ponents subjec Weight %	t to "Right-To Minois	Know" legislation in Massachusets	the following : New Jersey	itates: Pennsylvania	Island
MEX: Not rep Internations ICAO: Not re IATA: Not rep	ul Trans guiated guiated hiat reg	olavá		ions								Proposition 65 e State Right.to No known cong Chemical Name Matrodextrin	-Know conents subjective Weight % 95%	t to "Right-To Illinois INo	Know" legislation in Massachusetts Na	the following : New Jersey No	itales: Pennsylvania No	Island No
MEX: Not reg Internations (CAO: Not re INTA: Not re INTA: Not re INTA: Not re INTA: Not re INTA: Not re	al Trans guioted guioted hist reg	ulated (slove	oton	iong	_			_				Proposition 65 e State Right.to No known comp Chemical Name	exempts nature -Know ponents subjec Weight %	t to "Right-To Minois	Know" legislation in Massachusets	the following : New Jersey	itates: Pennsylvania	Island
MEX: Not reg Internations (CAO: Not re UNTA: Not reg IMDG/1MO: Section 15: Re Internations	al Trans guioted plicted hist reg igulatory al Inves	oldied Inform	ofice									Proposition 65 e State Right-to No known cong Chemical Name Malkodestrin Water	-Know conents subjective Weight % 95%	t to "Right-To Illinois INo	Know" legislation in Massachusetts Na	the following : New Jersey No	itales: Pennsylvania No	Island No
MEX: Not reg Internations (CAO: Not re INTA: Not re INTA: Not re INTA: Not re INTA: Not re Internations The composer	al Trans guicted guicted hist rag igulatory al Invest ris of this	ulaied Islow Baries	afon d are re	ported in th				0.00	Beet			Proposition 65 e State Right.to No known comp Chemical Name Maltodestrin Water Canada	evengts nature - Know ponents subjec Weight % 95% 5%	to Right-To Binois No No	Know" legislation in Massachusets Na Na	the following : New Jersey No	itales: Pennsylvania No No	Island No No
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#### Section 16. Other Information

**Disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

REVISION DATE: 7/21/2015

### Citric-acid monohydrate

		ety Data Sheet		these of acute exposure.
	Citric acid	monohydrate		Section 4 - First Aid Measures
ACC# 84211 Section	n 1 - Chemical Produ	ct and Company Id	entification	Even: In case of contact, immediately furth eyes with plenty of welsy for a t least 15 minutes. Det medica
10, A164-10LC, A104 12LC, A111-222, A11 Synonyms: 2-Hydro Company Identifica Fisher 5den	K124910000, AC124910010, -250LB, A104-3, A104-500, A 1-SAM1, A111-SAM2, A111-S oy-1,2,3-proparatives/boxylic diam tific	110-10, A110-10LC, A110-1 AM3, XXCITRAC50KG	20. AC385850000, A104- L A110-90, A111-12, A111-	ald immediately. Skillar to case of contact, fush skin with plantty of solar. Remove contaminated clothing and shoes. Get medical and d initiation develops and periods. Wash clothing before recon. Ingention: If insultaned, do not induce vimiting unixes directed to do so by medical personnel. Never give anothing by mostlif to an unconnocuou person. Get medical aid. Inducations II insuled, remove to findh air. If not breathing, give artificial respiration. If breathing is difficult give corpore. Get medical aid. Notes to Physician: Their synchronotically and supportively.
1 Reagent L Fair Lawn, M	0 07410			Section 5 - Fire Fighting Measures
for information, cal Emergency Number	e 201-796-7100			Section 5 Frite Fighting Pressures
	stance, call: 900-424-9300 HEMTREC annistance, call: 1	103-527-3807		General Information: At in any fire, was a self-contained breathing apparatus in pressure-demand. HSHM/NDSH (approved or equivalent), and full protective gear, During a fire, initiating and highly toxic
	ion 2 - Composition,			gases may be generated by themail decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. Extinguishing Media: Use uster spray, dry chemical, carbon doolde, or chemical form. Flash Point Not apolication.
CA5# 3949-29-1	Chemical Name Stric acid monohydrate	Percent >97	d EINECS/ELINCS withdad	reade roomt, wit apportance, 1010 dag C (1,850.00 dag F) Randfostien Linutts, LowerRiot available. Upper: Not available.
-				NPPA Rating: (witmated) Health: 3: Flammability: 1: Instability: 0.
	Section 3 - Haz	ards Identification		Section 6 - Accidental Release Measures
		CY OVERVIEW	spiratory tract initiation.	General Information: Use proper personal protective equipment as indicated in Section 8, Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section, Avoid generating durity conditions, Revide ventilation. Spill may be carefully neutralized with lime (calcum oxide, CaO).
Potential Health Eff	3			Section 7 - Handling and Storage
Eyes Causes severe e	we knitation and possible injur tation. Some references state	800000 a. 0	MARKS ON	
ince it is found in the physiological function ingestion: May cause this acid may cause inhalation: Causes (	espiratory tract irritation. sposure may cause erosion of	ent of the citric acid cycle w tad in plants and in animal t h nausea, vomiting and dar	rhich releases energy for issues and Ruids. rhea. Excessive intake of	Handling: Wash thoroughly after handling. Remote contaminated clothing and wash before resule. Use with adequate ventilator. Neurose dust generation and accumulation. Keep container Sightly deced. And ingestion and inhalation. Do not get to spise. Avoid centast with skin and dething. Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.
Se	ction 8 - Exposure Co	ontrois, Personal Pr	otection	Hazardous Polymentzation: Will not occur.
				Section 11 - Toxicological Information
	ils: Pacifities storing or utilizing hower. Use adequate ventilation			
Exposure Limits		NOOSH	OSHA - Final PELa	RTECS#:
Chersical Name Otric acid monohyd		none listed	tone listed	CA5# 3949-29-1: 087810000 CA5# 77-92-9: 087350000
Citric acid anitydro	us none listed	none litted	none listed	LD50/LC50) Not annelable.
acid anhydrous: No C Personal Protective Eyes: Wear appropri- face protection regul Skim Wear appropri- Clothing: Wear appr Respirators: Foliou 143. Use a NEOSH/M:	ata protective eyeglasses or cl ktions in 29 CFR 2010.132 or 1 ata protective gloves to prever opriate protective clathing to p the OSHA respirator regulation SHA or European Standard EN	or this chemical. Nerrical safety goggles as de European Standard EN166. R skin exposure. prevent skin exposure. In found in 29 CFR 1910.13 149 approved respirator if s	nicribed by OSHA's eye and 4 or European Standard Pic	CAS# 77-92-91 Drates test, rabbit, eye: 750 ug/24H Severe: Drates test, rabbit, skir: 500 ug/24H Mid: Drat, noose: L059 = 5404 ug/kg; Drat, rat: L050 = 3 grr/kg; Carcinogenicity; CAS# 5549-25-1: Not lated by ACOIH, IARC, NTP, or CA Prop 63.
expended or # instact	on or other symptoms are exp	erienced.		CAS# 77-92-9: Not listed by ADGEH. JARC. NTP. or CA Prop 65.
	Section 9 - Physical	and Chemical Prope	erties	Epidemiology: No information available. Tenatopencity: No information available. Reproductive Effects: A information available.
Physical State: Cry Appearance: white Odors Odorless.	stalline powder			Nutagenicity: No information available. Neurotoxicity: No information available. Other Studien:
pH: 2.2 (0.1N soln) Vapor Pressure: 3.1	708-009 mm Hg @ 25 deg C			Section 12 - Ecological Information
Vapor Density: Not Evaporation Rate:N	avaitable. kot avaitable.			In the state of
Viscosity: Not availa Boiling Point: 175 d	leg C			No information available.
Freezing/Helting P Decomposition Ten	olivit:100 deg C Ispenature:175 deg C			Section 13 - Disposal Considerations
Solubility: Freely So Specific Gravity/De	kuble.			<ol> <li>Session and second secon</li></ol>
Holecular Formula: Holecular Weights?	C6H507.H20			Chemical susts generators must determine whether a discarded chemical is classified as a hazardoor waste. US EFA guidelines for the classification determination are isted in 40 CFR Parts 261.3 Additionally waste generators must consult state and local hazardoor waste regulations to ensure complete and
	Section 10 - Sta	bility and Reactivity	/	accurate deselection. RCRA D-Services None listed. RCRA U-Services None listed.
	Stable under normal tempera	tures and pressures-		Section 14 - Transport Information
	& Dust generation, moisture. Alth Other Materials: Netals,	strong exidizing agents, str	ong reducing agents, strong	
bases, metal nitrates				US DOT Canada TDG Shipping Name: Not regulated Not regulated
			1322	telige / failingsh fahar wi conclosed a 19211, New Page 4

L			•
Hazard Class: UN Number:			
Packing Group:			
	Section 15 -	Regulatory I	Information
JS FEDERAL		<u> </u>	
ISCA			
he CAS number for	is not on the TSCA Inven- the anhydrous form is on listed on the TSCA invent	the inventory (40	a hydrate. It is considered to be listed if CFR720.3(u)(2)).
lealth & Safety Re			List.
Chemical Test Rule			
ection 12b None of the chen	nicals are listed under TSC	A Section 12b.	
SCA Significant N None of the chen	lew Use Rule nicals in this material have	a SNUR under T	SCA.
	s Substances and corres nicals in this material have		
	Extremely Hazardous S nicals in this product have		
CAS # 5949-29-	-		
CAS # 77-92-9: Section 313 No	immediate. chemicals are reportable (	under Section 313	3.
Clean Air Act:	es not contain any hazardo		
This material doe	es not contain any Class 1 es not contain any Class 2	Ozone depletors.	
lean Water Act:	-	-	s Substances under the CWA.
None of the chen	nicals in this product are li	sted as Priority Po	ollutants under the CWA.
SHA:	nicals in this product are li		
TATE	nicals in this product are c		-
	is not present on state lis not present on state lists		
alifornia Prop 65			
alifornia No Signific	ant Risk Level: None of th	e chemicals in th	is product are listed.
European/Inte	rnational Regulatio	ons	
	in Accordance with EC		
ps://fscimage.fishersci.com/m	isds/84211.htm		Page 5
Risk Phrases:			
R 36/37/38 In	ritating to eyes, respiratory	system and skin.	
Safety Phrases: S 26 In case o	f contact with eyes, rinse i	mmediately with p	plenty of
	k medical advice. suitable gloves and eye/fa	ce protection.	
WGK (Water Da	nger/Protection)		
CAS# 5949-29 CAS# 77-92-9			
Canada - DSL/N	DSL		
	9-1 is listed on Canada's DS I is listed on Canada's DSL		
Canada - WHMI			
	as a WHMIS classification of been classified in accordance		criteria of the Controlled Products
	he MSDS contains all of the	e information requ	ired by those regulations.
	is listed on the Canadian I	Ingredient Disclos	ure List.
1	Section 16	- Additional	Information
12			
MSDS Creation I Revision #10 Da			
The information above	is believed to be accurate and repr	esents the best inform	ation currently available to us. However, we make no
resulting from its use. (	Users should make their own invest	tigations to determine I	ect to such information, and we assume no liability the suitability of the information for their particular
			f any third party or for lost profits or any special, indirect er has been advised of the possibility of such damages.

# Grap Flavor Symrise (GRS)

	SECTION 1:	PRODUC	TIDENTIF	ICATION		CREMICAL NAME BOTANCAL NAME		Net applicable Net applicable			
						SYNDNYN		Not applicable			
ROBUCT NAME	GRAPE RAVOR	Allow David				CHEMICAL FORMULA		NEaphate			
KODUCT CODE	SAME ISAN	Order ( Lawor				CAS NUMBER		Ket applicable			
PPLIER	MEDISCA Inc.					ALTERNATE CAS NUM		Not applicable			
	Tel: 1.800.802.1						NOLECILIAR NEIGHT NEI applicate				NP/ WEI
	1957 Route 3, Uni 1957 W. Mesa V	t C, Plathburgh	6, NYC 12901	N/ 80-10		COMPOSITION		MXTURE	CASING Set and	NECT ECHINECT	
	1641 %. Belt Line	Road, Suite 11	10, ining, TK, 75					There are no additional impredient			
	MEDISCA Phare Tel: 1.800.905.0					NOTES		concentrations applicable, are clar Al favor ingredients contained in			
	4509 Rue Doom					1000		Administration or are listed as being	ng generally recognize	d as sale on the FEMA GRAB its	£
	21300 Gordon W MEDISCA Autor		SK, Rohmond, B	C YEW THE				"Revering components are consid breakdown, or other chemical iden	dicates of the specifi	c compounds of Savor ingradient	an with the in
	Tel: 1.300,786,3		5100.9947					accordance with 1910,1200 of the This product contains: Artificial flat			ent of CO and of
	Unt 7, Hortage I					1		Card Strange and Strange and			1000001
ERCENCY PHONE	5-2 Rolety Stre CHENTRES Day			1400-234-2010				SECTION 4: FIRST	AD MEASUR	23	
	NOW Patterns lints	annadori Centre:	如 (語			J -					
EB	Rational Chemical Revoluting agent	Entropincy Car	10.2223	964		IN CASE OF EVE CON	TACT	But with copies among of we	der for 15 minutes, son	anting system with the years. First	table persists a
	investigation	-				IN CASE OF BON CON	THET	medical all. Visite with state & water for 15 mil	and an international states	the same state time the	
	SECTION 2	HAZARD	S DENTF	CATION		IF SWALLONED		Call a shreet or Wat out yout			100
						IF INHALED		Remove to fresh air. If not breath		The state of the state of the	
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IS CLASSIFICATION		- and the second		Derest Ba	100	PRECAUTIONS FOR F	REPICHTERS				
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SECTION	12 COMPACE	DOMINEO	DEMATION	ON INGREDIE	UTS	PERSONAL PRECAUT		-			
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						METHODS & MATERIA CONTAINMENT	L FOR	On land, sweep or shovel into sub	atile containers		
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ACUTE TOXICITY		2 mjigi kitaulide		WASTE DISPOSAL	Depose of in accordance with federal rincal laws and regulations. Avoid missaor etc. the on-site	ntart,
		t LCSC: (mgAg): Het avaluatie 1. LCSC: (mgEL4hr): Not avaluatie			SECTION 14: TRANSPORT INFORMATION	
SKN CORROSION/RRTATION		cata the classification is not possible.		J		
BERIOUS EVE DAMAGE/EVE IRRITATION	Due to spok on	data the classification is not presidie.		UN PROPER SHIPPING MAKE	Nit surgerus pot	
RESPRATORY SENERIZATION	Due to tack of	tata the case/fination is not possible.		UN NUMBER	Not applicable	
SKN SENSITZATION	Durit lack of a	sis to caseful is supposed.		CLASE	Not applicable	
GERM CELL MUTAGENCITY		tata the classification is not preside.		PACKING GROUP	Mit applicable	
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	MIP		alide for the subject to component of the	HAZCHEN	Net application	
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ADDITIONAL CARDINOGENICITY	1.	nata the caso ficalize is not possible.		EMURONMENTAL HAZARDS	Not available	
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SPECIFIC TWRGET ORGAN TOXICITY		cals the classification is not possible.			SECTION 15: REGULATORY INFORMATION	
BNOLE EXPOSURE BRECIFIC TWREET ORGAN TOXICITY	R. china de	Sala the classification is notpossible.				
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ASPRATION HAZARDS		tata the canafication is not possible.		Cantal and		California
SIGNS AND SYMPTOMS OF EXPOSINE		is prevent a significant instant under anticipates allergic reaction.	conditions of normal law.	ADR 400	COR Analysis Americal Personal Database Haracteria	Real S
ROTENTIAL HEALTH EFFECTS	Intelation	Nay to harmful fi inteleti. Causes registri	try bactiertalien.	PROPILENE GLYCOL, ML ST-854	ML ML ML I X ML	ML.
	ingestion Skin	Nay be harmful if swallowed	and the letter	NVE, = Not Lindent; IX = Lindent		
	Eve	May be harmful if absorbed through skin. ( Causes new instation.	426 90 1022	AUSTRALIAN REDULATIONS		
-					Tangade Gods Code at Packan-	
1	SECTION 1	2. ECOLOGICAL INFORMAT	ION	108 5mm	ar Descender Register No. 10 No. 10 No.	
TOXOTTY	EC80 48 Hr 0	Durance (mg/c) Not available		PROPYLENE GLYCOL, ST-854		
	LOSE WHIT: F	Het: (mgl.): Het available 1 Het: Algae (or other assa plants): (mgl.): Net a	1000	NEL = Not Listed		
PERMITTINGE AND DEGRADABILITY		to the local second second second second		EUREDULATIONS		
BIOACCUMULATIVE POTENTIAL	Not available			Chemical Name BCA SCAS ANN	24 96404 83 85 85 85 50 AWEX 10002004 140204 11072000 6402402	202118
NOBUTY IN SOL OTHER ADVERSE EFFECTS	Soluble in wate	6.				
STREM AUVERSE EFFEURS	100000000000000000000000000000000000000	rest internated to be released into the environme	e.	PROPYLENE OLYCOL MI ST-656	NL NL NL NL NL	ML
and the second se				INC. = Not Limet, IX = Linted	이 아이 안 있는 것이 있는 것이 있는 것이 없다.	S17
	SECTION 13	I: DISPOSAL CONSIDERATI	ONS	Any EU regulation not listed above is not a	plicable to Telo product.	
	NOTES		Listed on the United States - I Proprietary Flavor Ingredient	SCA (Taxic Substances Control / New Jersey - Right to Know Haza	rdous Substance	
					a de la constante de	
				and the states of the		
	REFERENCES	3	Available upon request			
	ABBREVIATIO	NG AND ACRONYMS	Hygiene Association Workgie Industrial Chemical Substance Comprehensive Environmental P Materials Information System, System, UARC – Intomational IRPMIN – Roady Biodegradabi LD60 – Lintial Dece, 50%; Mit Occupational Safety and Heal Health Administration Permise Recommended Exposure Lim	ce Environment Exposure Levels e According to Regulations, CAS al Response, Compensation, and ottoction Agency, OHS – Olicolai M HSE – Health and Safety Execu Agency for Research on Cancer, inty Model (ISS – Institute Superis HA. Mine Safety and Health Ad- th, NTP – National Toxicology P Mile Exposure Limits, OSAR – O Mile Exposure Limits, OSAR – O it; SARA – Superfund Amendmer of Limit Yelue; TWA – Time We	Inelatio, AHAA WEEL – American Industrial CORESAR - Computer Assister Evaluation of – Chemical Abstract Service; CERCLA – Liabity Act ECSO – Ethective Concentration, Iamencized System; HMIS – Hazardous Nev, HSIS – Hazardous Euterandus Nev, HSIS – Hazardous Institute for gram; OSHA PEL – Occupational Sathy & amitative Smitchen-active fraitbonship; REL – ts and Reauthorization Act; STEL – Short Term ghted Average; WHMIS – Workplace Hazardous	
	LAST REVISIO	IN.	11/2020			
	SUPERSEDES		03/2019			
				S since the last version, please	communicate with MEDISCA at	
			www.medisca.com			
	DISCLAIMER		information is believed to be of The information in this docum product with regard to approp the product. MEDISCA® shall	correct but does not purport to be ent in based on the present stak riate safety precautions. It does I not be held liable for any dama;	Iont Australia and WHMIS regulations. The above all inclusive and shall be used only as a guide, of our involved lega and is applicable to the or represent any guarantee of the properties of e resulting from handling or two contact with the thy for observing existing laws and regulations.	
	SUPPLEMENT	ARY INFORMATION	For all country specific require Page to this Safety Data Shee		Data Sheet, please request Supplementary	
			Fage to any bala crick	n.		

# **Orange Flavor Symrise (ORS)**

100	FETY DATA SHEET ording to Regulation (EC) No	p. 19	907/2006	symrise 🌍
11	8153 ORANGE FL	AV	OUR	
Ver	sion 21	- 22	Revision Date 14.12.2017	Print Date 24.05.2018
	TION 1: IDENTIFICATION	10	THE SUBSTANCE/MIXTURE	AND OF THE
1.1	Product identifier			
	Commercial Product Name	i	ORANGE FLAVOUR	
	Material number	+	118153	
1.2	Relevant identified uses of t	the	substance or mixture and uses a	dvised against
	Use of the Substance/Mixture	1	Flavor mix	
1.3	Details of the supplier of the	e sa	fety data sheet	
	Company	13	Symrise Asia Pacific Pte. Ltd. Pandan Loop Singapore 128412 Singapore	
	Telephone	1	+656567794551	
	Telefax	1	+656567795843	
	E-mail address	Ŧ	sds@synvise.com	
	For further information, please Symrise AG - Tel.: +49 / (0)55			
1.4	Emergency telephone numb	er		
	Emergency CONTACT (24-Hour GBK/Infotrac ID 101844: +49(	-Nu 613	mber) 2)9829021	
SEC	TION 2: HAZARDS IDENT	IFI	CATION	
2.1	Classification of the substan	nce (	or mixture	
	Classification (REGULATION	(E	C) No 1272/2008)	
	Flammable liquids, Category 3 Skin irritation, Category 2 Serious eye damage, Category 1 Skin sensitisation, Category 1 Aspiration hazard, Category 1 Acute aquatic toxicity, Categor Chronic aquatic toxicity, Categor	1 y 1		H226 H315 H318 H317 H304 H400 H410
2.2	Label elements			
	Labelling (REGULATION (EC	) N	0 1272/2008)	
	Hazard pictograms	Ţ		

Green Myanmar Environmental Services Co., Ltd.

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 SAFETY DATA SHEET symrise 😭 symrise 🌍 (EC) No. 1907/2006 118153 ORANGE FLAVOUR 118153 ORANGE FLAVOUR Revision Date 14.12.2017 Print Date 24.05.2018 Version 21 Print Date 24.05.2018 Version 21 Revision Date 14.12.2017 Flam. Lkp.: 2; H225 Eye Dam.: 1; H318 STOT SE: 3; H336 Signal word : Danger Propan-1-ol >= 10 - < 20 71-23-8 200-746-9 01-2119486761-29 : H226 H304 H315 H317 H318 H410 Flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Very toxic to aquatic life with long lasting Hazard statements 01-2\*-112-31-2 203-957-4 \*19967771-26 Eye Irrit.: 2; H319 Aquatic Chronic: 3; H412 01-2119957 78-70-6 201-134-4 Skin Imit.: 2; H315 Eye Imit.: 2; H319 Skin Sens.: 18; H317 = 1 - < 5 Eye Init.: 2; H319 Skin Init.: 2; H315 Skin Sens.: 1B; H317 Precautionary statements >= 0,1 - < 1 Prevention P210 5392-40-5 226-394-6 ep away from heat, hot surfaces, sparks, en flames and other ignition sources. No Wear protective gloves/protective clothing/eye protection/face protection. P280 Eye Irrit.: 2; H319 Skin Irrit.: 2; H315 Flam. Liq.: 3; H226 Aquatic Chronic: 2; H411 124-13-0 = 0.1 - < 1 Response: P301 + P310 SWALLOWED: Immediately call a POISON P301 + P310 DF SWALLOWED, Internet CENTER/doctor, P303 + P361 + P353 GF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with Skin Irrit.: 2; H315 Eye Irrit.: 2; H319 Skin Sens.: 18: H317 0,1 - < 1 112-54-9 203-983-6 all contaminated cottning. Runse skon www water/hower. P305 + P351 + P334 + P310 IF NPES: Rinse controlusity with water for serveral inniues. Remove contact lenses, if present and easy to do. Continue rissing, Immodiately call a POISON CONTENT/doctor. P331 Do NOT induce vomiting. Skin Imit.: 2; H315 Eye Imit.: 2; H319 Skin Sens.: 1; H317 - 01-61 106-23-0 203-376-6 For the full text of the H-Statem Section, see Section 10 Contains : CYCLOHEXENE, 1-METHYL-4-(1-METHYLETHENYL)-, (R)-, LINALOOL. SECTION 4: FIRST AID MEASURES 2.3 Other hazards 4.1 Description of first aid measu No data available General advice Move out of dangerous area. Never give anything by mouth to an unconscious person. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS Inhalation : Move to fresh air. 3.1 Substances Take off all contaminated clothing immediately. If symptoms persist, call a physician.
 Wash off immediately with scap and plenty of water. Skin contact No data available 3.2 Mixtures Protect unharmed eye. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Eye contact Hazardous compo Prevent vomiting if possible. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. If accidentally availowed obtain immediate medical attention. Ingestion CAS-No. EC-No. Classification (REGULATION (EC) No 1272/2008) Chemical name Concentration [%] (R)-p-Mentha-1,8-diene 5989-27-5 227-813-5 4.2 Most important symptoms and effects, both acute and delayed = 25 - < 50 Asp. Tox.: 1; H304 Aquatic Chronic: 1; H410 Aquatic Acute: 1; H400 Skin Sens.: 18; H317 Skin Imit.: 2; H315 Flam. Liq.: 3; H226 No data available tion of any immediate medical attention and special treatment needed No data available SAFETY DATA SHEET symrise 🌍 rding to Regulation (EC) No. 1907/2006 SAFETY DATA SHEET symrise 🔊 according to Regulation (EC) No. 1907/2006 118153 ORANGE FLAVOUR Version 21 Revision Date 14.12.2017 Print Date 24.05.2018 118153 ORANGE FLAVOUR SECTION 5: FIREFIGHTING MEASURES 5.1 Extinguishing media Version 21 Revision Date 14.12.2017 Print Date 24.05.2018 Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide Extinguishing media which : High volume water jet shall not be used for safety SECTION 7: HANDLING AND STORAGE 7.1 Precautions for safe handling 5.2 Special hazards arising from the substance or mixture Specific hazards during firefighting Flash back possible over considerable distance. Do not use a solid water stream as it may scatter and spread fire. Do not allow run-off from fire fighting to enter drains or water court. Advice on safe handling : Dispose of rinse water in accordance with local and national regulations. For personal protection see section 8. 5.3 Advice for firefighters Advice on protection against : Take necessary action to avoid static electricity discharge (which might Special protective equipment : In the event of fire, wear self-contained breathing apparatus. for firefighters fire and explosion cause ignition of organic vapours). Use explosion-proof equipment. In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers, water must be disposed of in accordance with hour local regulations. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Further information Avoid formation of aerosol. Do not spray on a naked flame or any incandescent material. When using do not smoke. Keep away from open flames, hot surfaces and sources of ignition. SECTION 6: ACCIDENTAL RELEASE MEASURES 7.2 Conditions for safe storage, including any incompatibilities 6.1 Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Use personal protective equipr Remove all sources of ignition. Personal precautions Requirements for storage : Store in original container. ment Keep container tightly closed in a dry and well-ventilated place. To maintain product quality, do not store in heat or direct sunlight. areas and containers 6.2 Environmental precautio No smoking. Environmental precautions : St Should not be released into the environment. Avoid subsoil penetration. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective withorther Containers which are opened must be carefully resealed and kept upright to prevent leakage. Advice on common storage : No special restrictions on storage with other products. 6.3 Methods and materials for containment and cleaning up : No decomposition if stored and applied as directed. Other data : Dam up. Wipe up with absorbent material (e.g. cloth, fleece). Methods for cleaning up Local authorities should be advised if significant spllages cannot be contained.
 Suppress (knock down) gases/vapours/mists with a water spray jet. Additional advice 7.3 Specific end use(s) Flavor mix 6.4 Reference to other sections For personal protection see section 8.

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118153 ORA		ion Date 14.12.2017		Print Date 24.05.2018	118153 ORANGE FL	AVOUR	
104 - 0.050 (244)	SURE CONTROLS/PERS		812 812		Version 21	Revision Date 14.12.2017	Print Date 24.05.2
3.1 Control paramet	ters				Hygiene measures Protective measures	: Wash hands before breaks and : Avoid contact with skin.	immediately after handling the produc
Components wit	th workplace control para	ameters, Germany:			a second a reconstruction	When using, do not eat, drink	or smoke.
Componen	nts CAS-No.	Control parameters	Update	Basis	SECTION 9: PHYSICAL AND		
(R)-p-Mentha-1,8	8-diene 5989-27-5	AGW 5 ppm	04 2013	TRGS 900	9.1 Information on basic physi		
Components wit	th workplace control para	ameters, United Kingdor	m:		Appearance	and and character properties	
Componer	nts CAS-No.	Control parameters	Update	Basis	Form	: liquid	
Propan-1-ol	71-23-8	TWA 200 ppm STEL 250 ppm	12 2011 12 2011	EH40 WEL EH40 WEL	Colour	: light yellow to orange-brown	
Components wit	th workplace control para	ameters, Spain:			Odour Odour Threshold	: characteristic : No data available	
Componen	nts CAS-No.	Control parameters	Update	Basis	100.45 7.050	: No data available	
Propan-1-oi	71-23-8	VLA-ED 200 ppm VLA-EC 400 ppm	2012 2012	VLA (ES) VLA (ES)	Safety data Bash point	: 31 °C	
Citral	5392-40-5	VLA-ED 5 ppm	2013	VLA (ES)	Water solubility	: immiscible	
Components wit	th workplace control para	amoters, France:			Relative density	: 0,9707 - 0,9807 at	5753AA112
Componer	nts CAS-No.	Control parameters	Update	Basis		20 °C relation to density of w	iter at 4°C
Propan-1-ol	71-23-8	VME 200 ppm	07 2012	INRS (FR)	Bulk density	a constant series	
Components wit	th workplace control para	ameters, Poland:	22 20		Relative vapour density Vapour pressure	: not determined : 16 kPa at 50 °C	
Componer		Control parameters	Update	Basis		calculated	
Propan-1-ol	71-23-8	NDS 200 mg/m3	12 2011	POL MAC	Meiting point/freezing point	anot determined	
Citral	5392-40-5	NDSCh 600 mg/m3 NDSCh 54 mg/m3 NDS 27 mg/m3	12 2011 12 2011 12 2011	POL MAC POL MAC POL MAC	Boiling point	: not determined	
8.2 Exposure contro	ois	nee ar myrida			Partition coefficient: n- octanol/water	i log Pow: Not applicable	
Engineering me	asures				pH	: not determined	
none Personal protect	tive equipment				Evaporation rate Flammability (solid, gas)	: Lower than the evaporation ra : Not applicable	e or butyl acetate = 1
Respiratory protect		anal respiratory protective	equipment norm	nally required.	Auto-ignition temperature	: The substance or mixture is no	t classified as self heating.
Hand protection	should h	reams may help to protect owever not be applied onc	e exposure has a	occurred.	Decomposition temperature	: No data available	
	2 or of b	emicals-resistant gloves, e utyl rubber Level 6.	.g. safety gloves	s of chloroprene Level	Oxidizing properties	: The substance or mixture is no	
Eye protection	1 Safety g	lasses			Explosive properties	Due to its structural properties	, the product is not classified as explos
Skin and body pro						: Vacours may form explosive m	ixtures with air.
SAFETY DATA S	Remove SHEET (EC) No. 1907/2006	ght protective cickhing and wash contaminated cl	sym		Lower explosion limit Upper explosion limit SAFETY DATA SHEET according to Regulation (EC) N		inclures with air.
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SAFETY DATA S according to Regulat 118153 ORA Version 21 9.2 Other data None. SECTION 10: STAB 10.1 Reactivity 10.2 Chemical stabi 10.3 Possibility of h reactions to a 10.5 Incompatible r to avoid 10.6 Hazardous dec products SECTION 11: TOXI 11.1 Information or Acute inhalation Acute deministration Repeated dose t Acute deministration Skin irritation	SHEET ton (EC) No. 1907/2006 INGE FLAVOUR A final case-by- harbering of the pr  ILITY AND REACTIVIT I No data I No data Novid I No data	and wash contaminated cl ion Date 14.12.2017 sessment of potential expl case basis where the proces in sessment of potential expl case basis where the bourt. Y available	Sym locion hazardo e formation is avai circumstances s	Print Date 24.05.2018 an only be made on a liable on product surrounding the use	Lower explosion limit Upper explosion limit Correcting to Regulation (EC) N ISSNET DATA SHEET according to Regulation (EC) N ISSNET Agrination toxicity SECTION 12: ECOLOGICAL II 2.1 Toxicity No data available 12.2 Persistence and degradat No data available 12.3 Bioaccumulative potentisa No data available 12.4 Mobility in soil No data available 12.5 Results of PBT and vPM8 a This substance/mistrue cont Toxic (PBT), or very persiste 12.6 Other adverse effects Very toxic to aquatic life well SECTION 13: DISPOSAL CON 13.1 Waste treatment method Product Contaminated packaging SECTION 14: TRANSPORT IN 14.1 UN number ADR	Vapours may form explosive n     Vapours may form explosive n     O. 1907/2006  AVOUR      Pevision Date 14.12.2017      No data available  NFORMATION  NFORMATION  NING  NING NING  NING  NING  NING NI	ether persistent, bioaccumulative and levels of 0.1% or higher.
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	153 ORANGE FL	AV		
Verse	on 21	100	Revision Date 14.12.2017	Print Date 24.05.2018
	IMDG IATA-DGR	1	3	
4.4	Packing group			
	ADR: Packaging group		ш	
	Packaging group Classification Code Hazard Identification	1	F1	
	Number Labels	10	30	
	Labels Tunnel restriction code	I.	3 (D/E)	
	RID: Packaging group		ш	
	Classification Code Hazard Identification	=	F1 30	
	Number Labels	÷		
	IMDG:			
	Packaging group Labels	12	111 3	
	EmS - EmS LATA-DGR:	Ŧ	F-E, S-D	
	LATA-DGR: Packing instruction (cargo aircraft)	1	366	
	Qty/Pkg (Cargo)	-	220,00 L 355	
	Packing instruction (passenger aircraft) Qty/Pkg (Passenger)		355 60,00 L	
	Qty/Pkg (Passenger) Packaging group Labels	1		
4.5	Environmental hazards	1	3	
-	ADR:			
	Environmentally hazardous	) I	yes	
	RID: Environmentally hazardous	1	yes	
	IMDG:			
- 5	Marine pollutant		yes	
14.0	Special precautions for us	er		
	and the second	- 1	p Annex II of MARPOL 73/78 and	and the second se
14	Transport in bulk accordin Not applicable	- 94	D Annex II of MARPUL 737.0	the IBC code
	to BetrSichV (Germany)		Flash point 21 °C to 55 °C, at 15 °	
	Risk classification according to BetrSichV (Germany)		Flash point 21 °C to 55 °C, at 15 ° WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS	
	Risk classification according to BetrSichV (Germany) Water contaminating class	1.7	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS	
ccon	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany)	. 19	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006	•
	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/	. 19	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006	symrise 🝣
118	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/	. 19	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006	symrise 🝣
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118 (ersion 5.2	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FLI n 21 Chemical safety assessme	. 1' AV	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006 OUR Revision Date 14.12.2017	, symrise 🝣
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ECON S.2 ( ECTI Fu	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/ n 21 Chemical safety assessme No data available ION 16: OTHER INFORM ull text of H-Statements re	nt AV	WCK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006 OUR Revision Date 14.12.2017 ION red to under sections 2 and 3.1	, symrise 🝣
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ECCOTO 118 /ersion 5.2 I ECTI Fu H H H H	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/ n 21 Chemical safety assessme No data available ION 16: OTHER INFORM ull text of H-Statements re 1225 High 1226 Flaa 304 May	nt AV	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006 OUR Revision Date 14.12.2017 ION red to under sections 2 and 3.1 fammable liquid and vapour. bible liquid and vapour. fatal if swallowed and enters airways	Print Date 24.05.201
ECCON E18 Version 5.2 ECTI ECTI	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/ n 21 Chemical safety assessme No data available ION 16: OTHER INFORM will text of H-Statements re 1225 Higf 1226 Flan B04 May 1317 May	nt AV	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006 OUR Revision Date 14.12.2017 ION red to under sections 2 and 3.1 fammable figuid and vapour. bible figuid and vapour. fatal if swallowed and enters airways skin irritation. use an allergic skin reaction.	Print Date 24.05.201
eccorr 118 Version 5.2 I I ECTI Fr H H H H H H H H H H H H	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FLJ n 21 Chemical safety assessme No data available No 16: OTHER INFORM ull text of H-Statements re 1226 Flan 104 Flan 105 Cau 1317 Cau	at the ses	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVvvS 907/2006 OUR Revision Date 14.12.2017 ION red to under sections 2 and 3.1 farmsable liquid and vapour. bible liquid and vapour. bible liquid and vapour. fatal if swallowed and enters airways skin irritation. use an allergic skin reaction, serious eye damage,	Print Date 24.05.201
eccorr 118 /ersion 5.2 ECTI Fr H H H H H H H H H H H H H	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/ n 21 Chemical safety assessme No data available No 16: OTHER INFORM ull text of H-Statements re 225 Higf 226 Flan 304 May 315 Cau 319 Cau 336 May	AT AT ferri ses ses cau	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006 OUR Revision Date 14.12.2017 ION red to under sections 2 and 3.1 fammable liquid and vapour. Ible liquid and vapour. Ible liquid and vapour. Istal if swailowed and enters airways skin irritation. use an ailergic skin reaction, serious eye irritation, serious eye irritation,	Print Date 24.05.201
ECCIT	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/ n 21 Chemical safety assessme No data available ON 16: OTHER INFORM ull text of H-Statements re 225 Higf 1226 Flan 304 May 315 Cau 317 May 318 Cau 319 Cau 319 Cau	at a to a	WCK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006 OUR Revision Date 14.12.2017 Ion red to under sections 2 and 3.1 fammable liquid and vapour. ible liquid and vapour. fatal if swallowed and enters airways skin irritation. use an ailergic skin reaction, serious eye irritation, serious eye irritation, use dowsiness or dizziness, skit to aquatic life.	Print Date 24.05.201
eccord IIS /ersion 5.2 // ECTI	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FLJ n 21 Chemical safety assessme No data available CON 16: OTHER INFORM ull text of H-Statements re 225 Higf 226 Flan 304 May 315 Cau 317 May 318 Cau 319 Cau 316 May 410 Ven 411 Toxo	AV nt AV AV ferritorial ses ses cau ses cau to to to	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVvvS 907/2006 OUR Revision Date 14.12.2017 Ion red to under sections 2 and 3.1 farmsable liquid and vapour. fible liquid and vapour. sections ever instance. sections ever instance.	Print Date 24.05.201
ECCIT	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FL/ n 21 Chemical safety assessme No data available CON 16: OTHER INFORM ull text of H-Statements re 225 Higf 226 Flan 304 May 315 Cau 319 Cau 319 Cau 319 Cau 319 Cau 319 Cau 319 Cau 316 Way	AV nt AV AV ferritorial ses ses cau ses cau to to to	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVwS 907/2006 OUR Revision Date 14.12.2017 ION red to under sections 2 and 3.1 fammable liquid and vapour. tble liquid and enters alrways skin irritation. use an allergic skin reaction. serious eye damage. serious eye timrtation. use drowsiness or dizziness. kit to aquatic life. kit to aquatic life.	Print Date 24.05.201
SCOOT	Risk classification according to BetrSichV (Germany) Water contaminating class (Germany) ETY DATA SHEET ding to Regulation (EC) No 153 ORANGE FLJ n 21 Chemical safety assessme No data available CON 16: OTHER INFORM ull text of H-Statements re 225 Higf 226 Flan 304 May 315 Cau 317 May 318 Cau 319 Cau 316 May 410 Ven 411 Toxo	AV nt AV AV ferritorial ses ses cau ses cau to to to	WGK 3 (highly water endangering Calculation acc. Annex 4 to VwVvvS 907/2006 OUR Revision Date 14.12.2017 Ion red to under sections 2 and 3.1 farmsable liquid and vapour. fible liquid and vapour. sections ever instance. sections ever instance.	Print Date 24.05.201

# Lychee Flavor (VM) (F-LCV)

	TECHNICAL DATA SHEET			TECHNICAL DATA SHE
	2H No - Labrary Hoste Islan, Createry No. Labrary, Labrary, - 1527			
0		-	VM/LCV/E970869	6/A1
DENEMAL DESCRIPTIO Physical description	M LIQUID I CLEAR Free COLORLESS to YELLOW	FROPYLENE GLYCOL INS I FOOD ADDITINE(S)	100000000	
Organoleptic siescription	SAMURC	ACETIC ACID WS Nº 200 2	70 ppni	
Deggewied taxing	1	The Central Islamic Court	cil of Thailand	
		in compliance with Itala' require	ment and centifiable for V. blace Fil	r (Thailand) Co., Lid
Production process	: LIGND BLEND	PHYSICO-CHENICAL DATA	W.	
LEGISLATION Food allergens (Reg. (U No alergens to Sedare	E) 1163/2011)	Specific gravity 2020°C Rash point °C Richardye index at 20°C	- 10136 / 10836 - 95 °C - 14182 / 1.4480	
a supression.		NUTRITIONAL DATA		
Prepackaged Foods):	H(No.367)B.E.2557(2014) & (No.383)B.E.2560(2017)Re.Labeling of		ical.	
No allergens to declare.	I	Energy value 1805		
Food Additives): RESTRICTED USE IN FOOD.	EGULATION (MOPH No. 223 Re: Flavouring Agents and MoPH on NOTFOR RETAL SALE DO NOTINGEST AS SUCH	Progrylene Glycol		10 0
Legal status; NATURE IDENT	ICAL FLAVOUR	STORAGE AND HANDLIN		
Composition: NATURAL FLA	VOUR, NATURE IDENTICAL FUNCTION	Min. Temperature (*C)	Max. Temperature (*C) 20.(86/F)	Staff He
		15(5997)	au (664)	12 (nonthe
on soo amaa vir 3 amaa daa 20 wire 2002	881286 - 88728686 - 490,58 (1996) - 1 (1996) - 1 (1996) - 10 - 10 - 10 - 10	TENISE Partiel Nº 3 Partiel das 28 AVR 2020		IN COM- RETORING AL-RIG NUMB NUMBER OF AL-RIG

	TECHNICAL DATA SHE
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V. MANE FILS (THAILAND) CO., LTD., 284 Bangkok - THAILAND	Moc 4, Ladirabang Industrial Estate, Chalongtrung Ross, Lamplathiew, Ladirabang, - 10520 VM/LCV/E9708696/A1
Protect from light	· Yes.
Protect from air	÷ Yes.
Protect from moisture	· Yes.
We recommend this product be st exposure to light. For information Safety Data Sheet.	tored in its original sealed packaging. Avoid excessive temperatures and concerning the manipulation of the product, please refer, if necessary, to the
This computer generated techn	ical data sheet is valid without signature.
26305 27md M-3 27md 44F 3 4FFF 2020	561269 - E9708896/A1 - EN. Verso 12904 data 14

# Grap Flavor (VM) (GRM)

SAFETY DATA SHEET according to Regulation (EC) M		CAFETY DATA CL	ICCT			
	1907/2006	SAFETY DATA SH according to Regulatio	n (EC) No. 1907/200	6		
219504 GRAPE FLA		219504 GRAP				
Version 4	Revision Date 31.10.2015 Print Date 03.05.2017			sion Date 31.10.2015	8	Print Date 03,05.201
	IN OF THE SUBSTANCE/MIXTURE AND OF THE		ITION/INFORMATI	ON ON INGREDIENTS		
COMPANY/UNDERTAKING	IN OF THE SUBSTANCE/MIXTURE AND OF THE	3.1 Substances				
		Chemical characteriz	tation : Prepara	tion		
1.1 Product identifier		3.2 Mixtures				
Commercial Product Name	: GRAPE FLAVOUR	Hazardous compo	nents			
Material number	: 219504	Chemical Name	CAS-No.	Classif	cation	Concentration
1.2 Relevant identified uses of	the substance or mixture and uses advised against		EC-No. Registration num	(REGULATI)		[96]
Use of the Substance/Mixture	: Flavor mik					
1.3 Details of the supplier of the	to estatu data chaat					
Company	: Symrise Asia Pacific Pte. Ltd.	2-Ethyl-3-hydraxy-4- pyrone	4940-11-8 225-582-5	Acute Tox.: 4 (C	(ral); H302	>= 1 - < 5
	Pandan Loop Singapore 129412	Methyl anthranilate	134-20-3	Eye Init.: 2; H3	19	>=1-<5
	Singapore	Eac the full text of th		ned in this Section, see Sec	tion 16	
Telephone	: +656567794551			and in the Sector, see Sec		
Telefax	: +656567795843	SECTION 4: FIRST A	ID MEASURES			
E-mail address	: sds@symrise.com	4.1 Description of first				
For further information, pleas	e contact;	General advice		rds which require special fi	rst aid measure	
Symrise AG - Tel.: +49 / (0)!			Never g	ive anything by mouth to a	n unconscious p	erson.
1.4 Emergency telephone num		Inhalation	: Move to In the c	fresh air. ase of inhalation of aerosol	mist consult a p	physician if necessary
Emergency CONTACT (24-Ho GBK/Infotrac ID 101844: +49	ur-number) 9(6132)9829021	Skin contact		ith water and soap as a pre		
		Eye contact	: Flush ey	es with water as a precaut	ion.	
CECTION & UNITABLE C	THEFT	Ingestion	: If a per-	son vomits when lying on hi	is back, place hi	m in the recovery
SECTION 2: HAZARDS IDEN			Never o	Ive anything by mouth to a ater as a precaution.	n unconscious p	erson,
2.1 Classification of the substa						
Classification (REGULATIO		4.2 Most important sy	mptoms and effects, t	ooth acute and delayed		
	r mixture according to Regulation (EC) No. 1272/2008.	No data avallable				
2.2 Label elements Labelling (REGULATION (E		4.3 Indication of any i No data available	mmediate medical att	ention and special treats	nent needed	
	mixture according to Regulation (BC) No. 1272/2008.	No data available				
Not a nazardous substance of	mixture according to Regulation (EL) No. 1272/2008.	SECTION 5: FIREFIG	HTING MEASURES			
2.3 Other hazards		5.1 Extinguishing med	lia			
No data available		Suitable extinguishin	ig media 💠 Use wat	er spray, alcohol-resistant i	foam, dry chem	ical or carbon dioxide
SAFETY DATA SHEET	I0. 1907/2006	SAFETY DATA SH according to Regulation 219504 GRAPE	(EC) No. 1907/2006			
	Io. 1907/2006 VOUR Revision Date 31.10.2015 Print Date 03.05.2017	according to Regulation 219504 GRAPE Version 4	(EC) No. 1907/2006	ion Date 31.10.2015		Print Date 03.05.20
according to Regulation (EC) N 219504 GRAPE FLA	VOUR	according to Regulation 219504 GRAPE	(EC) No. 1907/2006			Print Date 03.05.20
according to Regulation (EC) N 219504 GRAPE FLA Version 4 Extinguishing media which shall not be used for safety reasons	VOUR Revision Date 31.10.2015 Print Date 03.05.2017 High volume water jet	according to Regulation 219504 GRAPE Version 4 7.3 Specific end use(s) Fitavor mix	e (EC) No. 1907/2006 E FLAVOUR Revis	ion Date 31.10.2015		Print Date 03.05.20
according to Regulation (EC) N 219504 GRAPE FLA Version 4 Extinguishing media which shall not be used for safety reasons	VOUR  Revision Date 31.10.2015 Print Date 03.05.2017 High volume water jet m the substance or mixture	according to Regulation 219504 GRAPE Version 4 7.3 Specific end use(s) Flavor mix SECTION 8: EXPOSUR	E CONTROLS/PERS	ion Date 31.10.2015		Print Date 03.05.20
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according to Regulation (EC) N 219504 GRAPE FLA Version 4 Extinguishing media which shall not be used for safety reason? 5.2 Special hazards during firefighting 5.3 Advice for firefighters Specific hazards during firefighters Specific hazards during firefighters Further information SECTION 6: ACCIDENTAL RE 6.1 Personal precautions 6.2 Environmental precautions Environmental precautions 6.3 Methods and materials for Methods for cleaning up Additional advice. 6.4 Reference to other sections For personal protection see is SECTION 7: HANDLING AND 7.1 Precautions for safe handling Advice on safe handling Advice on protection against fire and explosion.	Print Date 33.10.2015         Print Date 03.05.2017           I High volume water jet         If the substance or mixture           I Do not use a solid water stream as it may scatter and spread fire.           I In the event of fire, wear self-contained breathing apparatus.           In the event of fire, wear self-contained breathing apparatus.           In the event of fire, wear self-contained breathing apparatus.           In the event of fire, wear self-contained breathing apparatus.           In the event of fire and/or explosion do not breathe furnes. Use water spray to cool unopened containers.           VILEASE MEASURES           excite equipment and emergency procedures           Ensure adequate ventilation. Keep people away from and upwind of split/leak.           I           I No special environmental precautions required.           containment and cleaning up           Sweep up or vacuum up splitge and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cioth, fleece).           Is           suppress (knock down) gases/vapours/mixts with a water spray jet.           Image: Intervisions required. For personal protection see section 8.           When using do not smoke.           hinduding any incompatibilities           Store in orginal container, keep in a dry, cool place.	according to Requision 219504 GRAPE Version 4 7.3 Specific end use(s) Flavor mix SECTION 8: EXPOSUR 6.1 Control parameters Components with w Components with w	ECONTROLS/PERS FLAVOUR ECONTROLS/PERS CAS-No. 141-78-6 rerkplace control part CAS-No. 141-78-6 rerkplace control part CAS-No. 141-78-6 res sequipment a 1 Not requ t 2 or of b t 2 or of b t 3 Skin she t Wash ha General t Avoid co	Ion Date 31.10.2015 CONAL PROTECTION Interest, Germany: Control parameters AGW 400 ppm Control parameters TWA 150 ppm TWA 150 ppm TWA 150 ppm TWA 50 ppm TWA 50 ppm TWA 50 ppm TWA 50 ppm TWA 50 ppm INTEL 400 ppm INTEL	Update 06 2008 11 Update 2005 2	Basis TRGS 900 Basis EH40 WEL EH40 WEL EH40 WEL EH40 WEL EH40 WEL Basis INRS (FR) Basis POL MAC POL MAC POL MAC
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Thai Faster Products & M.K Co., Ltd.

SAFETY DATA SHEET according to Regulation (EC) No 219504 GRAPE FLAN		SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 219504 GRAPE FLAYOUR
Version 4	Revision Date 31,10,2015 Print Date 03.05,2017	Version 4 Revision Date 31,10,2015 Print Date 03.05,2017
SECTION 9: PHYSICAL AND	CHEMICAL PROPERTIES	9.2 Other data
9.1 Information on basic physic	cal and chemical properties	None.
Appearance		
Form	: clear liquid	SECTION 10: STABILITY AND REACTIVITY
Colour	: coloriess to light yellow	10.1 Reactivity : No data available
Odour	: characteristic	10.2 Chemical stability I No data available
Odour Threshold	: No data available	10.3 Possibility of hazardous : No dangerous reaction known under conditions of normal use, reactions
Udour Inresnoid	: No data available	10.4 Conditions to avoid r No data available
Safety data		10.5 Incompatible materials r No data available
Flash point	: 85 °C	to avoid
Water solubility	: completely miscible	10.6 Hazardous decomposition t No data available products
Relative density	: 1,0260 - 1,0460 at 20 °C relation to density of water at 4°C	SECTION 11: TOXICOLOGICAL INFORMATION
Bulk density	i.	11.1 Information on toxicological effects
Relative vapour density	: not determined	Acute oral toxicity : Acute toxicity estimate : > 2.800 mg/kg, Calculation method
Vapour pressure	: < 1 kPa at 50 °C	Acute inhalation toxicity : No data available
	calculated	Acute dermal toxicity : No data available
Melting point/freezing point	2 not determined	Repeated dose toxicity I No data available
Boiling point	: not determined	Acute toxicity (other routes I No data available of administration)
Partition coefficient: n-	: log Pow:	Skin irritation : No data available
octanol/water	Not applicable	Eye irritation : No data available
PH	: not determined	Sensitisation I No data available
Evaporation rate	: Not applicable	Mutagenicity : No data available
Flammability (solid, gas)	: Not applicable	Carcinogenicity : No data available
Auto-Ignition temperature	: The substance or mixture is not classified as self heating.	Reproductive toxicity : No data available
Decomposition temperature	: No data available	Teratogenicity : No data available
Oxidizing properties	: The substance or mixture is not classified as oxidizing.	Specific target organ toxicity : No data available - single exposure
Explosive properties	: Due to its structural properties, the product is not classified as explosive	Specific target organ toxicity : No data available
Lower explosion limit	: Vapours may form explosive mixtures with air.	- repeated exposure
Upper explosion limit	: Vapours may form explosive mixtures with air.	Aspiration toxicity : No data available
	A final assessment of potential explosion hazards can only be made on a case-by-case basis when precise information is available on product handling, production setup and the dircumstances surrounding the use of the product.	SECTION 12: ECOLOGICAL INFORMATION 12.1 Toxicity

	rding to Regulation (EC) No. 1907/2006 SO4 GRAPE FLAVOUR	SAFETY DATA SHEET
Versie	on 4 Revision Date 31.10.2015 Print Date 03.05.2017	according to Regulation (EC) No. 1907/2006
	No data available	219504 GRAPE FLAVOUR
12.2	Persistence and degradability	Version 4 Revision Date 31.10.2015 Print Date 03.05.201
	No data available	President 4 President Sales S
12.3	Bioaccumulative potential	SECTION 15: REGULATORY INFORMATION
	No date available	
12.4	Mobility in soil	15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
	No data available	National legislation
12.5	Results of PBT and vPvB assessment	Risk classification according : Exempt
	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of $0.1\%$ or higher.	to BetrSichV (Germany)
12.6	Other adverse effects	Water contaminating class : WGK 1 (slightly water endangering) (Germany) Calculation acc. Annex 4 to VWVwS
SECT	ION 13: DISPOSAL CONSIDERATIONS	
13.1	Waste treatment methods	15.2 Chemical Safety Assessment
	Product : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local	15.2 Chemical Safety Assessment
	regulations.	No data available
	Contaminated packaging : Empty remaining contents. Dispose of as unused product.	
SECT	ION 14: TRANSPORT INFORMATION	SECTION 16: OTHER INFORMATION
14.1	UN number	
	Not classified as dangerous in the meaning of transport regulations.	Full text of H-Statements referred to under sections 2 and 3.1
14.2	Proper shipping name	H302 Harmful If swallowed.
	Not classified as dangerous in the meaning of transport regulations.	H319 Causes serious eye irritation.
14.3	Transport hazard class	Further information
	Not classified as dangerous in the meaning of transport regulations.	
14.4	Packing group	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information
	Not classified as dangerous in the meaning of transport regulations.	and belief at the date of its publication. The information given is designed only as a guidance for safe
14.5	Environmental hazards	handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may
	Not classified as dangerous in the meaning of transport regulations.	not be valid for such material used in combination vestes only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless
14.6	Special precautions for user	specified in the text.
	Not classified as dangerous in the meaning of transport regulations.	
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Any data changes with reference to previous versions are marked by a vertical line in front of the
	Not classified as dangerous in the meaning of transport regulations.	concerned paragraph.

Green Myanmar Environmental Services Co., Ltd.

### Grap Flavor Sensient (GRV)

15			SI	ENSIENT	
Safety Data	Sheet				
GRAPE FLAV	OR				
Safety Data Sh	eet dated 12/26/2019 version	2			
Product identi		dentification			
Mixture identifie	Trade name: GRAPE FLAV				
	Trade code: 97AA8033	JK			
Relevant iden	tified uses of the substance	e or mixture and uses	advised against		
Recommended	use: Not Available				
	painst: Not Available				
	supplier of the safety data	sheet			
Company:	SENSIENT TECHNOLOGIES 17 JUNDA ROAD, EAST 200		J, CHINA 510530		
Ferrerener	Tel:+86-20-82226218 lephone number				
Tel: 020-82226					
2. Hazards is	dentification				
Emergency ov					
	Not Available				
Classification	of the substance or mixtur	e			
Aquatic Acute 3	Harmful to aquatic life				
Label element	3				
Hazard states	vents				
H402	Harmful to aquatic	Hife			
Precautionary	statements				
P273	Avoid release to th	e environment			
P501	Dispose of content				
Hazards ident	fication				
	Physical hazards: Not Availa Health hazards: Not Availai Environmental hazards: No	sie			
Other hazards					
	No PBT Ingredients are pre	sent			
Other Hazards:	No other hazards				
	on/information on ingr	edients			
Substances	Not Available				
Mixtures Mixture identifie	ation: GRAPE FLAVOR				
List of compo	nents				
Qty	Name	Ident. Numb.	Classification	<b>Registration Number</b>	
3-5 %	Methyl anthranlate	CAS:134-20-3 EC:205-132-4	Acute Tox. 5, H303; Eye Intt. 2A, H319; Skin Intt. 3, H316; Aquatic Acute 2, H401		
0.1-0.25 %	Cinnamic alcohol	CAS:104-54-1 EC:203-212-3	Acute Tox. 5, H303; Skin Sens. 1, H317		
roduct code:	\$7AABB33				
rint data:	16 December 2020			Page n.	1 of

inducts souther.	197A-80023
	None in perfocutor.
Interioregantible re	
	safe storage, including any incompetibilities
	ban alab andlan 8 for monomounded protoclive aquipmont.
	Do not est or drink while working.
	Containuned Johning should be changed before extering sating areas.
	Before making transfer operations, sizure that there aren't any incompatible material residuals in the containers.
	<ul> <li>Avoid contact with skin and even, inhabition of vapours and mints.</li> <li>Dun't use enotyte container inform they have timen dispond.</li> </ul>
Presautions f	r aafa handling
7. Handling	
Precautionary	measures to prevent the occurrence of secondary hazard Nis Available
242427 Cartering	See also sectors 8 and 13
	Wash with plenty of water.
	Builtable material for taking up: absorbing material, organic, and
Methods and	naterial for containment and cleaning up
	Suitable material for taking up: absorbing material, organic, and
	In case of gas except or of entry into waterways, soil or drains, infirm the mappinalitie authorities.
	Le not avenue to enter into solytunosoli. Lo not evenue to enter uno surface weter or intoins. Relato contantoni washing water and dispose 3.
Rovinsomenta	f precautions De not allow to enter inte self-subsell. De not dilew to enter inte surface water or straiss.
201021030101000	See protective measures under point 7 and 6.
	Remove persons to safety.
	Wear personal protection equipment.
	sutional protective equipment and emergency procedures
a Acceldants	I rolease measures
	Move undamaged containers from immediate hazard area but only if it can be done safely.
	Collect contaminated fire extinguishing water. Do not discharge into drains.
	Use cultable invision apparatus .
Advice for fire	fighters and protective measures
	Burning produces heavy shoke.
sharred transfer	Do not infait expension or combustion games,
Second Income	Noos in particular, Is arising from the substance or insture
extinguishing n	redia which must not be used for asfinity reasonal. Note in particular.
10212712710	Carties dioxide (CD2).
	Water.
Suitable suting	
Extinguishing	
	to measures
Indication of	ny immediate medical attention and special treatment needed.
2. The second state	Not Available
Advices for fit	st aid responders
	Not Available
Most Importan	it symptoms and effects, both soute and delayed
in the second	Rentinge casesBy to fresh air and keep where and at rest.
In case of John	
to owner of boge	ment. Do not induce vontiting, get medical attention showing the SDS and label hazardous.
	Wash immediately with water.
In case of eyes	
	Wash with plenty of water and soap.
In name of alder	perilant.
	first ald measures

- and the second second second	Anounted presented premiers	11. Technological inf		
	a controls (accounted synthetics)	Enformation on taxicol Textestogical Information	ogical affects (at on main components of th	a minturer
<ol> <li>Exposure Content pare</li> </ol>	a controls/pervanal protection	Herbyl anthronians	<ul> <li>acts stratify</li> </ul>	1000 Des hat + 200 mg/kg
	No dpts sweltzme			1220 Sen Balan - 5 g/kg
Exponent co				COSH Dien Rat + 2000 regileg
	Not readed for normal use. Anywey, operate eccording good working predicts.	Column stoles	AL INVESTIGATION	(210) Dout that = 2 ging
Personal States	Milli No special prevailing must be adapted by surrout use.			1258 Nov Namer + 5-p/kg
Prelaction for	tavasi			
Supervisor of	Not needed for increase use, meeting	If out differently specif	At some ments	in the regulation and hazar betwee must be considered as 8.4.
	Their Amelindian		1) and community without	
withing and	Sectorcal research		ill rentraux aya damagac/initratio	
Appropriate	exploreering costorate:		2) oppositiony to skin denoificant w) generated sectospeciality	
	(excues /		f) carchogenizts	
9. Physical	and chemical properties		() Handwide toothis	
Letter mathem	en besic physical and chemical properties Physical State: Lipcol		<ul> <li>b) \$70° single represent to \$70° -single autosum</li> </ul>	
	Appearance and execut: Liquid, Celevinen to pice yellew (Visual) (Idea): (Celevine to Ideada) ((Depresents))		() elementer Retard	
	Odeg-threatedd: Net Relevant (Organoledec)		Toxicological Heatics, metaloxic and dely/butter information	an i
	plin: Not Aurolabia (plintenter) Mallong paint / bearing paint: Ant Ratevant			
	Instal holing point and being rarges. Ant beinvart (OCC2 Institution 101)	12. Ecological inform	nation	
	Plant point: + KPE (Reveally Martana Elazard Euro Teat (AUTM 1502) Everyometrosynetics: Ref. Australiate (Shall Thire Film Everyometratic AERM 2023) - EX20040 (	Taxisity		
	Upper/Search Reconstruction or support for the fate and (ATTM 2001) (00)	Adapt good working prant from Transmighter Schume	these, as that the product is not a state	essand into the environment.
	Vegeur Bendity: Net Belevant (Calculation) Vegeur pressure: Net Resound (ARTH 121210 - 07 for Pelvanum Products)	Hentha	I'ls squalic its	
	Paddines desixty: New Peakase (1911) Idd1011300 (1911)	List of Sco-Textcologics	al properties of the product	
	Solutionary of extension and Available (OECD GLEDRE 101) Solutionary in all familiable (OECD GLEDRE 201)	Parameterse and degree	addits.	
	Partition conflictant (in ordered/webrr): Ant Taleward (2012) GUIDELINE (21 Bow String Method) Auto-spittur temperature: Ant Taleward (2029) 2039 Method for Legisl Chemicals.)	fort Auklable		
	Decomposition recependium: Not Research (Trine Pressure Text Verse)	Realization prime	tial (	
	Voccatty: Not Research (1992) Automatical (14) Explosive properties: Not Relevant (199 Test 3(a)) BMM Pathammer)	Not Autolative		
	Dividitions preparate: Not Relevant (Dividians Liquids Test Chemiser)	Mubility in sell		
	Muld/get Sammakitty: Nat Relevant (451% Nethol Etit)-14.) Votetle Cryselic compounde - VOCa + Nat Available	Inst Available Other adverse all area		
Other Infern	Lation .	Other adverse effects	utative .	
	Dutitions Groups milevant proporties het fielevant Mantstony, Net Australie	-		
	Centrativity: Net Research (Conductivity meter)	13. Disposal conside Waste tradition methods	retoxe	
	y and reactivity			Azberei reputatione surrentie - torce.
Chemical sta	dativy	C-		
Read in case	Data not austalaw.	34. Transport inform UN number	netion	
아파 같아?	Nont.	S/A		
Curalitions 4	Balas utder termat contitues.	UN proper sitipping res		
Incompatible	a mallectule		lapping Resner, 3(A articular laping 3(B	
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Rezardonas d	ADA Class: RA MITA Class: RA MITA Class: RA MITA Class: RA MITA Class: RA ADA Passing Image: RA	2004 1 Transport housed class report antibiol. Thepatitics' tempore without the second second second second second second second second second tempore and the second second second second tempore second sec	Scholz nere: 3/4 (se) 2009 in the Tauring Neve appels possible restricted appels possible restricted primiting of their registric and generality contamatications for induced	For which the strategies expension with the version successful to only the spectra of the strategies o
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Factoria group Restment of a Research present Regard of Stat ( Res (1873 )) Stat (1873 ) Stat (1873 )	Add Case: NA Add C	2004 1 Transport Inscend clean many motions," their examples analysis, " their examples analysis, " their examples and the second second second formal examples, the second second formation and the second second second second second second formation and the second second second second second formation and the second second second second second second formation and the second second second second second second formation and the second secon	Including memory. NAN (seed) Solitoping in the Theorem P, New Y, Solitoping in the Theorem P, New Y, and Solitoping in the Theorem Y, and the regards of their regards o	In relation in the control of periods with the relation control of a set region explored in the control of periods with the operator. The control of the exception, such a successorie of the second of the operator. The explored is the second of the control of the second of the period of the explored is a second of the secon
Factors group Record or ness Read of Sect Rec (1855) Sec (1855) Sec (1855) Sec (1855)	Add Class: BAA Add Class: BAA 3015 Cla	2004 1 Transport Inscend class many instances in the second second analysis in the second second second second second second second second second second second second second second second second second from second second second second second second from second second second second second second from second second second second second second second from second second second second second second second from second second second second second second second second from second second second second second second second from	Including memory. NAN (seed) Including a second second second Including a second second Including a second Including a second Including a se	An ordering manufactor expension with the relation constraints of a net series a second series of a second second did the constraints. The descent of the exception of a second second did the constraints. The second manufactor is a second second did the constraints. The second second distribution will request to the specific action to the parameters are excepted able. It offer a second second distribution of the second distribution of the specific control will be a second distribution of the specific control will be trained the specific control will be a second distribution of the specific control will be trained the specific control will be a second distribution of the specific control will be trained the specific control will be a second distribution of the specific control will be trained the specific control will be trained the specific control will be trained to the specific
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Factoring group Research of energy Research of energy Research of Sector Research of Sect	Add Class RAM 3/15 Class INM 3/15 Class INM	PROJ 1 Transport Interact chem interpret antibiot Transport private interpret antibiot Transport private interpret and transport private antibiotic temport antibiotic Transport private interpret and private interpret and interact and private interpret and interact and private interpret interaction private interpret interaction private interpret transport in the antibiotic and and antibiotic and antibiotic and interaction and antibiotic and and antibiotic and antibiotic and antibiotic and antibiotic and antibiotic and antibiotic interaction and antibiotic and antibiotic and antibiotic and antibiotic and antibiotic antibiotic and antibiotic antibiotic and antibiotic antibiotic and antibiotic antibiotic and antibiotic antibiotic and antibiotic antibiotic antibiotic and antibiotic ant	Isolation memory. NAA (seed)	An ordering sequence sequence of the relation consistence of a de- sequence of the relation of the relation of the relation of the relation of the sequences and the relation of the relation of the relation of the sequences. The relation of the relation o
Factoring group Research of energy Research of energy Research of Sector Research of Sect	Add later to Add l	PROJ 1 Transport Interact clean management forceast of clean management for a second second second and the second second second second second ment makes experts provide and the second second second second second ment makes experts provide and the second second second second second ment makes experts provide and the second second second second second ment makes experiments and the second second second second second second second second second second second second second second second from second second second second second the second second second second second to second second second second second second second second second second from second from second second second second from second from second second second second from second	Is bold memory. NA (set) (se	An ordering sequence sequence of the relation consistence of a de- sequence of the relation of the relation of the relation of the relation of the sequences and the relation of the relation of the relation of the sequences. The relation of the relation o
Packing group Environment Restances of Restances of Restances of Restances of Restances of Restances of States Sta	Add later to Add l	PROJ 1 Transport Inscend clean managers instead frequencies and the second second second second second test second second second second second second second second second second second second second second second second second test second second second second test second second second second second test second second second second test second second second second second second second test second second second second second second second test second second second second second second second second test second	scholar mem: NA (set) (s	An ordering sequence sequence of the relative consistence of the second
Factoring groups Restorment of a Restorment of	Advision preserves Advisor to the second se	2003-1 Transport Inscend clean many and the second second memory and the second second second second second second memory and second second memory and seco	Include Impact Ank (see) y Softry in the Tourney, Airk and	An ordering sequence sequence of the relative consistence of the second
Factors proof Research of the second Research	Additions and which is a second secon	2003-1 Transport Inscend clean many motions," their elements and the second second second second second second second second second second second second second second second the second	Include amere, NAA (see) (see	An ordering sequence sectors and the relation contribute of a set series extended in the off of the relation of the sectors. The interval for a sectors, and it is a contribute of the sectors of the sectors of the sectors, and it is a contribute of the sector of the sectors of the sectors, and the sector of the sector of the sector of the sectors of relation of the sectors of the sector of the sector of the sectors of the sectors of the sectors of the sector of the sector of the sectors of the sectors of the sectors of the sector of the sector of the sector of the sector of the sectors of the sector of the s
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Factors group Research press Research press Researc	ecompositive predicts Adv Late: BA Adv Late:	2004 1 Transport Inscend clean Transport Inscend clean Transport Inscend clean Transport Instead Instead Transport	Include memory: AAA (see) (se	An ordering manufactor expension with the relation constrained of a set and a second set of the relation of the relation of the theorem of the first exception. Set of a second second first the description. The second relation is the second second first the description. The second relation of the second second first the description of the second second second first the second second second relation of the second second first the second second relation of the second second first the second second relation of the second second second second second second second relation of the second second second second second second second second relation of the second
Factoring groups Restrictions of the Restriction of the Restriction of the Con- mercent of the Con- mercent of the Con- mercent of the Con- tension of the Con- tensio	Add States And Add And Add States And Add States And Add And Add And Add States And Add And Ad	PROJ 1 Transport Interact class management Interact class management interaction management interaction management interaction management interaction management interaction management interaction for all encounts, interac- tion and any interaction management interaction mana	scholar men: NA (set) (s	An ordering sequence comments with the residue control of a set sequence of the sectors of the residue of the sectors of the sectors of the first excitation of the sectors of a sector sector of the sectors of the sectors of the sectors of the sectors of a sector sector of the sectors of the sectors requested of the sector of a sector sector of the sectors of the sectors of the sectors of the sectors of the sector of the sector of the sectors of the sectors of the sector of
Factoring group Restorement of Register of Arts ( Amendic process Register of Arts ( Arts ( 1975) ) See ( 1975) )	Add lates and Add la	2004 1 Transport Inscend chem installation in the second science analysis of the second science installation in the second science of the second science of the second science installation in the second science of the second science of the second science installation in the second science of the science of the science of the science of the second science of the science of the second science of the scien	Isolation memory. NAN (seed)	An ordering sequence contrast and the residue contrast is an electronic of the secondary contrast of the secondary contras
Factores proce Research of an energy Research of an energy Research of an energy Research of Anni ( Research	Add Case and and a second case of a seco	2004-1 Transport Inscend class many sectors in the sector of the sectors in the sector of the sectors and the sector of the sector of the sector of the sector of the sectors and the sector of the sector of the sector of the sector of the sector and the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the s	Include memory: JAN (see) (se	An ordering manging manging a constraint of an ordering water and the manging and the second of the
Packing group Environment of Register of Anal Register of	Add lates and Add la	PROJ 1 Transport Interact clean management Interact clean management interaction of the management interaction of the management interaction of the management interaction management interaction description. If the management is and the management is and the management interaction of the management is and the management of the management is and the management of the management is and the management of the management is and the second management is and the sec	scholar mem: NA (set) (se	An ordering manipular communities with the relation considered of the second se

Strawberry flavor

TEE	SAFETY DATA SHEET
TFF	THAI FLAVOUR AND FRAGRANCE CO.,LTD
Product	: STRAWBERRY TF 2080
Date	: April 30, 2012 Page 1 (3)
1. CHEMICAL PROD	UCT AND COMPANY IDENTIFICATION
Tradename	: STRAWBERRY TF 2080
Product Use	: Flavour for consumer product
Manufacturer	: THAI FLAVOUR & FRAGRANCE
Telar.	: (66)26717000
2. COMPOSITION / I	NFORMATION ON INGREDIENTS
Chem.identific.	: Flavouring composition
CAS number	: Not applicable, product is a mixture.
EDECS/ELINCS number	: Not applicable, product is a mixture.
This product is a complex mixtur	e of flavour ingredients, which contains among others the following substance(s),
presenting a health or environme	atal hazard within the meaning of Directive 67/348/EEC, or having an occupational
exposure limit:	
none to be reported.	
3. HAZARD IDENTIK	TGATION
General	"Flavouring composition. When undiluted and not properly handled, can be
	irritating to the skin and eyes and upon inhalation.
	-Comburtible material.
Hazard symbol	: none required.
Rink-phrases	: none required.
Environment	: When spilled, can contaminate soil, ground- and surface water.
4. FIRST AID MEASU	URBS
Inhalation	: Remove from exposure site to fresh air and keep at rest. Obtain medical advice.
Εγε επροτισε	: Flush immediately with water for at least 15 minutes. Contact physician if
	rymtom: persist.
Skin exposure	: Remove contaminated clother. Wash thoroughly with water (and zoap). Contact
	physician if symtoms persist.
Ingestion	: Rinne mouth with water and obtain medical advice.
Others	: Take Rink and Safety phrases ( section 15) into account.
5. FIRE-FIGHTING	MEASURES
Extinguishing media	: Carbondioxide, dry chemical, foam. Do not use a direct waterjet on burning
	material.
6. ACCIDENTAL RELE	ASE MEASURES
Personal precautions	: Avoid inhalation and contact with thin and eyer. A self-contained breathing
	apparatus is recommended in case of a major spill.



**Orange Flavor Concentrate (ORT)** 

	FETY DATA SHEET ording to Regulation (EC) No	. 19	907/2006	symrise 🌍
11	8153 ORANGE FL	AV	OUR	1.6.6
Vers	sion 21	85	Revision Date 14.12.2017	Print Date 24.05.201
	TION 1: IDENTIFICATION	1 01	THE SUBSTANCE/MIXTURE	AND OF THE
1.1	Product identifier			
	Commercial Product Name	i	ORANGE FLAVOUR	
	Material number	9	118153	
.2	Relevant identified uses of t	he :	substance or mixture and uses a	dvised against
	Use of the Substance/Mixture	1	Flavor mix	
1.3	Details of the supplier of the	e sa	fety data sheet	
	Company	9	Symrise Asia Pacific Pte. Ltd. Pandan Loop Singapore 128412 Singapore	
	Telephone	23	+656567794551	
	Telefax	्य	+656567795843	
	E-mail address	24	sds@symrise.com	
	For further information, please Symrise AG - Tel.: +49 / (0)55			
1.4	Emergency telephone numb	er		
	Emergency CONTACT (24-Hour GBK/Infotrac ID 101844: +49(	-Nu 613	mber) 2)9829021	
SEC	TION 2: HAZARDS IDENT	IFI	CATION	
2.1	Classification of the substan	ice i	or mixture	
	Classification (REGULATION	(E	C) No 1272/2008)	
	Flammable Ilquids, Category 3 Skin irritation, Category 2 Serious eye damage, Category Skin sensitisation, Category 1 Aspiration hazard, Category 1 Acute aquatic toxicity, Categor Chronic aquatic toxicity, Categor	1 y 1	L	H226 H315 H318 H317 H304 H400 H410
2.2	Label elements			
	Labelling (REGULATION (EC	) N	1272/2008)	
	Hazard pictograms	3ł		

SAFETY DATA SHEET according to Regulation (EC) N	lo. 1907/2006	syn	nrise 🕥	SAFETY DATA according to Regu	A SHEET Jation (EC) No. 1907/2006	SVI	mrise 🕄
118153 ORANGE FL	AVOUR			118153 OF	ANGE FLAVOUR	- ,	
Version 21	Revision Date 1	4.12.2017	Print Date 24.05.2018	Version 21		Date 14.12.2017	Print Date 24.05.20
Signal word Hazard statements	: Danger : H226 H304	Flammable liquid and vap May be fatal if swallowed	our.	Propan-1-ol	71-23-8 200-746-9 01-2119486761-29	Flam. Liq.: 2; H225 Eye Dam.: 1; H318 STOT SE: 3; H336	>= 10 - < 20
	H315 H317 H318 H410	Causes skin irritation. May cause an allergic skir Causes serious eye dama Very toxic to aquatic life v	reaction.	Decanal	112-31-2 203-957-4 01-2119967771-26	Eye Irrit.: 2; H319 Aquatic Chronic: 3; H412	>= 1 - < 5
	2017082 35: 0.007	effects.	will king searing	Linalool	78-70-6 201-134-4	Skin Irrit.: 2; H315 Eye Irrit.: 2; H319 Skin Sens.: 18; H317	>=1-<5
Precautionary statements	: Prevention: P210	Keep away from heat, hot open flames and other ign smoking.	ition sources. No	Citral	5392-40-5 226-394-6	Eye Init.: 2; H319 Skin Init.: 2; H315 Skin Sens.: 18; H317	>= 0,1 ~< 1
	P280 Response: P301 + P310	Wear protective gloves/pr dothing/eye protection/fa IF SWALLOWED: Immedia CENTER/doctor.	ce protection.	Octanal	124-13-0 204-683-8	Eye Imit.: 2; H319 Skin Imit.: 2; H315 Fiam. Liq.: 3; H226 Aquatic Chronic: 2; H411	>= 0,1 - < 1
	P303 + P361 + P3	53 IF ON SKIN (or hair): Tak all contaminated clothing, water/shower.	e off immediately Rinse skin with	Dodecanal	112-54-9 203-983-6	Skin Irrit.: 2; H315 Eye Irrit.: 2; H319 Skin Sens.: 18: H317	>= 0,1 - < 1
	P331	water for several minutes lenses, if present and eas rinsing. Immediately call CENTER/doctor. Do NOT induce vomiting.	y to do. Continue	Citronellal	106-23-0 203-376-6	Skin Init.: 2; H315 Eye Init.: 2; H319 Skin Sens.: 1; H317	>= 0,1 - < 1
Contains 2.3 Other hazards No data available SECTION 3: COMPOSITION/	LINALOOL.	METHYL-4-(1-METHYLETHENYI	.)-, (R)-,	SECTION 4: FIRS	of the H-Statements mentioned i ST AID MEASURES If first aid measures : Move out of Never give a : Move to fres	dangerous area. nything by mouth to an unconsciou	us person.
No data available 3.2 Mixtures				Skin contact Eye contact	If symptoms	contaminated clothing immediately, persist, call a physician. mediately with scap and plenty of v rmed eve.	
Hazardous components Chemical name	CAS-No. EC-No. egistration number	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]	Ingestion.	In the case of and seek me Prevent vom If a person v position. Never give a	of contact with eyes, rinse immedia idical advice.	a him in the recovery as person.
(R)-p-Mentha-1,8-diene 5989-2 227-81	3-5	Asp. Tox.: 1; H304 Aquatic Chronic: 1; H410 Aquatic Acute: 1; H400 Skin Sens.: 18; H317 Skin Irrit.: 2; H315 Skin Irrit.: 3; H226	>= 25 - < 50	No data availab	any immediate medical attenti	acute and delayed on and special treatment neede	sd
CAFETY DATA SHEET coording to Regulation (EC) No 18153 ORANGE FL/ ension 21 ECTION 5: FIREFIGHTING M	AVOUR Revision Date 14		Print Date 24.05.2018		A SHEET Jation (EC) No. 1907/2006 RANGE FLAVOUR	syr	nrise 🕄
1 Extinguishing media				Version 21	Dauleise I	Date 14.12.2017	Print Date 24.05.20
Suitable extinguishing media	: Use water spray, alc	ohol-resistant foam, dry chen	nical or carbon dioxide.	Acianii 41	REVISION	Date 14.17.17017	Fill Date 24,05.20
Extinguishing media which shall not be used for safety	: High volume water j			SECTION 7: HAN	DLING AND STORAGE		

according to Regulation (EC)	No. 1907/2006 symrise 🜍	SAFETY DATA SHEET	. 🔿
118153 ORANGE F	LAVOUR	according to Regulation (EC) M	No. 1907/2006 SVM/ISE
Version 21	Revision Date 14.12.2017 Print Date 24.05.2018		Synnise V
SECTION 5: FIREFIGHTING	MEASURES	118153 ORANGE FL	LAVOUR
5.1 Extinguishing media		Version 21	Revision Date 14:12:2017 Print Date 24:05:2018
Suitable extinguishing media	a : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.		
Extinguishing media which shall not be used for safety reasons	: High volume water jet	SECTION 7: HANDLING AND	STORAGE
5.2 Special hazards arising fr	om the substance or mixture	7.1 Precautions for safe handl	ing
Specific hazards during firefighting	: Flash back possible over considerable distance. Do not use a solid water stream as it may scatter and spread fire. Do not allow run-off from fire fighting to enter drains or water courses.	Advice on safe handling	Dispose of rinse water in accordance with local and national regulations. For personal protection see section 8.
5.3 Advice for firefighters		Advice on protection against	: Take necessary action to avoid static electricity discharge (which might
Special protective equipment for firefighters	t : In the event of fire, wear self-contained breathing apparatus.	fire and explosion	cause ignition of organic vapours). Use explosion-proof equipment.
Further information	In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers. Fire residues and containated fire exclusioning water must be disposed of in accordance with local regulations. Collect containniated fire exclusioning water separately. This must not be discharged into drains.		Avoid formation of aerosol. Do not spray on a naked flame or any incandescent material. When using do not smoke. Keep away from open flames, hot surfaces and sources of ignition.
SECTION 6: ACCIDENTAL R		7.2 Conditions for safe storage	e, including any incompatibilities
	stective equipment and emergency procedures	Requirements for storage	: Store in original container.
Personal precautions	Ensure adequate ventilation.     Use personal protective equipment.     Remove all sources of lightion.	areas and containers	<ul> <li>Score in original container.</li> <li>Keep container tightly closed in a dry and well-ventilated place.</li> <li>To maintain product quality, do not store in heat or direct sunlight.</li> </ul>
6.2 Environmental precaution	IS		No smoking.
6.2 Environmental precaution Environmental precautions	: Should not be released into the environment, Avoid subsoil penetration. Prevent further leakage or spillage if safe to do so.		
Call the second s	: Should not be released into the environment. Avoid subsoil penetration.	Advice on common storage	No smoking. Containers which are opened must be carefully resealed and kept
Environmental precautions	: Should not be released into the environment. Avoid subsoil ponetration. Prevent further leakage or spillage if safe to do so. If the product contamisates rivers and lakes or drains inform respective	Advice on common storage Other data	No smoking. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Environmental precautions	: Should not be released into the environment, Avoid subsoil penetration. Prevent further leakage or splitting if safe to do so, If the product contaminates rivers and lakes or drains inform respective authorities.		No smoking. Containers which are opened must be carefully resealed and kept upright to prevent leakage. : No special restrictions on storage with other products.
Environmental precautions	Should not be released into the environment, Avoid subsoil penetration. Prevent further leakage or spilage if safe to do so, If the product contaminates invers and lakes or drains inform respective authorities. If containment and cleaning up Dam up.	Other data 7.3 Specific end use(s)	No smoking. Containers which are opened must be carefully resealed and kept upright to prevent leakage. : No special restrictions on storage with other products.
Environmental precautions 5.3 Methods and materials fo Methods for cleaning up	Should not be released into the environment, Avoid subsoil peertstion. Prevent further leakage or spilage if safe to do so. If the product oretaminates rivers and lakes or drains inform respective authorities.     recontainment and cleaning up     Dam up. Wipe up with absorbent material (e.g. cloth, fleece).     Local authorities should be advised if significant spilages cannot be contained. Suppress (knock down) gases/vapours/mists with a water spray Jet.	Other data	No smoking. Containers which are opened must be carefully resealed and kept upright to prevent leakage. : No special restrictions on storage with other products.

Thai Faster Products & M.K Co., Ltd.

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cording to Regulation (EC)	No. 1907/2006		sym	rise 🍞					
18153 ORANGE	LAVOUR								
erston, 21	+ Reyni	nn.Rate 14.12.2017.		Print Date 24.05.2018					
CTION B: EXPOSURE CO Control parameters Components with workp									
Componente	CAS-No.	Control parameters	Update	Basis					
(R)-p-Menthia-1,0-diene	5900-27-5	AGW 5 ppm	04 2013	TRGS 900					
Components with workp	lace control para	meters, United Kingdom	ii -						
Componente	CAS-No.	Control parameters	tipdate	Basis					
Propan-1-or	71-23-0	TWA 300 ppm SYEL 350 ppm	12 2011	EH40 WEL					
Components with workp	lace control para	meters, Spain:							
Components	CAS-ho.	Control parameters	Update	line					
Propan-1-al	71-23-8	VLA-ED 200 ppm VLA-EC 400 ppm	2013	VLA (ES) VLA (ES)					
Citral	5392-40-5	VLA-ED-5 (800)	2013	VLA (ES)					
Components with workp	omponenta with workplace control parametera, France:								
Components	CAR-No.	Control parameters	Update	Rent					
Propan-1-of	71-23-8	VME 200 ppm	07 1012	ENROY (PRE)					
Components with workp	lace control para	meters, Poland:							
Composanta	CAS-No.	Costrol parameters	Update	finaite					
Propan-1-of	71-23-8	NDS 200 mg/m3 NDSC0 600 mg/m3	12 2011	POL MAC POL MAC					
Citral	1302-40-1	NDSCh 600 ma/m3 NDSCh 54 ma/m3 ND5 27 ma/m3	12 2011	POL MAC					
Exposure controls Engineering measures none Personal protective equit Regulatory protection Hand protection	i No perso i Barnier o atiouid he Wear che	nal requiretory protective e seams may help to protect weaver not be applied enco micale-resistant glowes, e., dry rubber Level 6.	the exposed ar	eas of skin, they occurred.					
Eye protoction	i Slafety (A								
Skin and body protection	i Lightweig	int protective clothing							

	FETY DATA SHEET ording to Regulation (EC) N	0.1	907/2006	symrise 🌍
11	8153 ORANGE FL	A PROVIDENCE AND A PROPERTY OF		
Ver	sion 21	4	Revision Date 14,12,2017	Print Date 24.05.2038
	Hygiene measures Protective measures	1	Wash hands before breaks and im Avoid contact with sign. When using, do not eat, drink or a	mediately after handling the product. modes
sec	TION 9: PHYSICAL AND		MICAL PROPERTIES	
9,1	Information on basic physic	cot a	nd chemical properties	
	Appearance			
	Form	:1	Nquid	
	Colour	-	light yellow to prange-brown	
	Odour		characteristic.	
	Odour Threshold	3	No data available	
	Safety data			
	Plante point	1	31.*C	
	Wathir columny	1	amminiscitrie	
	Relative density	2	0,9707 - 0,9807 at 20 °C ministro to density of water	
	Bulk density	i.		
	Relativa vapour density	i.	not determined	
	Vapour preasure	1	16 k/hs at 50 °C calculated	
	Metting point/freezing point	÷.	and defermined	
	Bailing point	÷.	not determined	
	Partition coefficient: n- octanol/water	ŝ		
	µ11	1	not determined	
	Evaporation rate	11	Lower than the evaporation rate of	
	Fiammability (colid, gas)	i.	Not applicates	
	Auto senition temperature	11	The substance or mixture is not cl	assified as self heating.
	Decomposition temperature		No data available	
	Oxidizing properties	1	The substance or mixture is not cl	essified as usidizing.
	Explosive properties		Due to its structural properties, th	e product to not classified as explosive
	Lower explosion limit	1	Vapours may form explosive mists	eres with are
	Upper explosion limit		Vapours may form acplease mot-	arms with mir.



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5.2 Chemical safe		
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No data availat	le.	
ECTION 16: OTH	R INFORMATION	
	tatements referred to under sections 2 a	and 3.1
H225	Highly flammable liquid and vapou	A STATE OF A
H226	Flammable liquid and vapour.	
H304	May be fatal if swallowed and ente	rs airways.
H315	Causes skin irritation.	
H317	May cause an allergic skin reaction	h.
H318	Causes serious eye damage.	
H319	Causes serious eye irritation.	
H336	May cause drowsiness or dizziness	
H400 H410	Very toxic to aquatic life. Very toxic to aquatic life with long	Institut affects
6411	Toxic to aquatic life with long lastin	
H411 H412	Harmful to aquatic life with long last	
Further informa	tion	
and belief at the	provided in this Safety Data Sheet is correct i date of its publication. The information given ocessing, storage, transportation, disposal as ty specification. The information relates only uch material used in combination with any of	i is designed only as a guidance for safe nd release and is not to be considered a to the specific material designated and may
not be valid for s		

#### **Salacider Flavor**

ECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE A		inglasia manuna apina alab	tryintresali edi estat latinge						
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#### **Pineapple Flavor**

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ROCM 206, NO 19, KEXING ROAD, GURNS BATUM DISTRICT, GUANDEHOU CITY, GU TEL: 465 20 3731 2020 FAX: 486 20 3731 E-MAIL: tales@city-flower.com	2400 CIVIL SCIEN-TECH PARK, NO 1533, BEITAI ROAD, ANGDONG PROVINCE, CHIMA	ROOM 255, NO 18, KEXING RO	DAD, GUANGZHOU CIVIL SDEN TECH PARK, NO 1833, BEITAI ROAD, OU CITY, GUANGZIONG FROMINGE CHIMA

PERLY HANDLED THES WAY BE BRITATING TO SKIN AND PYES. RULATED AS DONORIBULS MY FROM DRAINS, SUPERCE AND GROUND WATER, I. TO AVOID PROSEILE CONCAMINATION. 15 MINUTES. IF BRITATION DEVELOPES, GET MEDICAL ATTENTION. E. WASH APPETTED AREAS WITH PLENTY OF SOAP AND GET MEDICAL ATTENTION. BREATHING IS DEFICIAL TOPT MEDICAL ATTENTION. SUBSTANCE, GET MEDICAL ATTENTION IMMEDIATELY. FOAM. IF WATER MUST BE USED, USE AS A SPRAY OVER. DS SPARS AND OPEN FLAMES. OF ACRIDITINES PROTECTION EQUIPMENT INFORMATION. TRUMS PONDS OR PURES' WATERS ED BY DIRT. SAND OR OTHER SUITABLE ABSORDEVT, TO CLOSED CONTAINERS FOR RECOVERY OR DISPOSAL S. RUBBER GLOVES AND APRON WHEN HANDLING. PROTECTION EQUIPMENT MINEHANICAL CORACIST MAY BE NEEDED IN CONFINED SHOULD BE READELY AVAILABLE. I WITH SOMP AND WATER. DO NOT DISCHARCE SE PONDS OR PUBLIC WATERS. 常州芸道 茶村島 ISで 2048 単築。51556 12-FOL CAL SOEN-TECH PARK, NO 1633, BEITAI ROAD, JAVGOONG PROVINCE, CHINA 14337 息(广州) 国际香料有限公司 ch Aroma International Ltd. ERIAL SAFETY DATA SHEET FAGE 1 OF 3 COMPLED FROM THE LIST OF MATERIALS THAT CTURES ASSOCIATION (FEMA), ON (FDA) HAS ROCESTILIATED FOR AVOR USE ORANGE CONCENTRATE : ME-UUD NATURE EDENTICAL FLAVOR : 1.4636-1.4830 : 0.83846-5.9340 : NON-VISCOUS YELLOW COLON LIQUED : CONTORINS TO STANDARD KEEP IN WELL-FILLED AIR-TIGHT CONTAINER AND AWAY FROM DIRECT HEAT / LIGHT. Aloste. PHOERE : CHINA : DECEMBER (M. 302) ANDLING AND STORAGE: LAME. EN. NDUNG. ELEVATED-TEMPERATURE PROCESSES SHOULD BE ESTABLISH AND MAINTAIN SAFE OPERATING


# Aspartame Powder (P-APT)

Safety Data Sheet	Safety Data Sheet
Nantong Changhai Food Additive Co., Ltd.	Nantong Changhai Food Additive Co., Ltd.
No. 15, Daqing Road, Qinglong Chemical Industry Yard Haimen City, Jiangsu, China 226121	No. 15, Daqing Road, Qinglong Chemical Industry Yard Haimen City, Jiangsu, China 226121
Section 1 – Identification	Dermal Exposure: No special treatment required. Flush with copious amount of water if needed
Product Name: Aspartame	<u>Eve Exposure</u> : Flush eyes with copious amounts of water for at least 15 minutes. Call a physician.
Synonyms: Asp-Phe Methyl Ester, Asp-Phe-OMe,	
N-(L-alpha-Aspartyl)-L-phenylalanine methyl ester Company: Nantong Changhai Food Additive Company	Section 5 - Fire Fighting Measures
No. 15, Daqing Road, Qinglong	Flash Point: N/A
Chemical Industry Yard, Haimen City, Jiangsu, China 226121	Auto Ignition Temperature:N/A Flammability:N/A
Technical/ Emergency Contact: 0086(513)82909666	Stable under normal conditions. Special consideration should be taken to ensure the
Fax: 0086(513)82747448 Intended Uses: Sweetener, Food Additive	potential for dust concentration in the flammable range is minimized.
	Extinguishing Media: Suitable: Water spray, Carbon Dioxide, dry chemical powder, or appropriate foam.
Section 2 - Hazards Identification	Firefighting: Protective Equipment: Wear self contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
HMIS Rating: HEALTH: 0	Section 6 – Accidental Release Measures
FLAMMABILITY: 0 REACTIVITY: 0	
NFPA Rating:	<u>Procedure for Personal Precaution:</u> Wear appropriate protective equipment <u>Methods for Cleaning Up</u> : Sweep up, place in bag and hold for waste disposal. Avoid
HEALTH: 0 FLAMMABILTY: 0	raising dust. Ventilate area and wash spill area after material pickup is complete.
REACTIVITY: 0	Section 7 – Handling and Storage
Warning: Finely dispersed particles are sensitive to dust explosion Medical conditions aggravated by exposure: phenylketonuria (PKU)	Handling: Avoid creating dusty conditions, inhalation, eye, skin and clothing contact.
Section 3 - Composition/Information on Ingredient	Worker exposure can be minimized if good industrial hygiene practices are utilized. <u>Storage</u> : Keep container tightly closed. Store in a cool, dry area.
FORMULA: C14H10N101 MOLECULAR WEIGHT: 294.3	Section 8 – Exposure Controls/Personal Protection
CAS#: 22839-47-0 EC-No: 245-261-3	Engineering Controls: It is recommended that mechanical exhaust is utilized to minimize
Chemical Name: N-(L-alpha-Aspartyl)-L-phenylalanine methyl ester	hazards contributed to dust explosions. <u>Personal Protective Equipment:</u> Utilize appropriate PPE for handling of powders. Eye
96 by Weight: 100	goggles, gloves and dust masks will create a more comfortable work environment.
Section 4 - First Aid Measures	General Hygiene Measures: Wash thoroughly after handling.
If used under ordinary circumstances no special treatment is necessary. Wash thoroughly after handling.	Recommended Airborne Exposure Limits for applicable dusts:
Oral Exposure: Not toxic if swallowed in small amounts based on toxicology studies.	OSHA PEL ACGIH TLV: 15mg/m2 (Total Dust) 8- hour TWA 10 mg/m3 (inhalable) 8 - TWA
Inhalation Exposure: Move to fresh air, if breathing becomes difficult call a physician.	5 mg/m3 (respirable) 8- hour TWA 3mg/m3 (respirable) 8-hour TWA
Document: SDS Issue Date: January 01, 2018 1-4	
Decumsat: SDS Issue Data: January 01, 2018 1-4	Safety Data Sheet
Safety Data Sheet Nancog Changhai Food Additive Co., Ltd. No. 15, Daping Sond, Qinglong Channical Industry Yard	Safety Data Sheet Nantong Changhai Food Additive Co., Ltd. No. 15, Daqing Road, Qinglong Chamical Industry Yard
Safety Data Sheet Natorg Changhai Food Additive Co., Ltd. No. 13, Doging Stood, Qinglong Channical Industry Yard Haimea City, Jiangsu, China 226121	Safety Data Sheet Nantong Changhai Food Addirive Co., Ltd. No. 15, Daqing Rond, Qinglong Chamical Industry Yard Haimen City, Jiangsu, Chima 226121
Safety Data Sheet Nantong Ganghai Food Additiv Co., Ltd. No. 15, Daping Road, Qinglong Chamical Industry Yard Haimen City, Jiangua, China 226121 ection 9 - Physical and Chemical Properties	Safety Data Sheet Nantong Changhai Food Additivo Co., Ltd. No. 15, Daqing Road, Qinglong Channical Industry Yard Haimen City, Jiangua, China 226121 Section 13 – Disposal Considerations
Safety Data Sheet Nantong Changhai Food Additive Co., Ltd. No. 15, Daping Soad, Qinglong Chanical Industry Yard Haimes City, Jingun, China 226121 ection 9 - Physical and Chemical Properties ppearance: White crystalline powder or <u>Partition Coeffecient:n-octanol/water</u> .	Safety Data Sheet Nutrong Changhai Food Additive Co., Ltd. No. 15, Donjang Road, Ognologa Channeal Industry Yard Haimen City, Jimgua, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv
Safety Data Sheet Nanroug Changhai Food Additive Co., Ltd. No. 15, Doalga Road, Qinglong Channical Lindustry Yard Haimea City, Jingsu, China 226121 ection 9 - Physical and Chemical Properties  pearance: White crystalline powder or Partition Coeffecient:n-octanol/water: nule N/A dor: Practically odorless Evaporation Rate: N/A urity (on dry bacis): 98-102% Vapor Pressure: N/A	Safety Data Sheet Nanrong Changhai Food Additive Co., Ltd. No. 15. Daqing Road, Qinglong Chamical Industry Yard Haimen City, Jianguu, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and
Safety Data Sheet Natora Changhai Food Additive Co., Ltd. No. 15, Daiga Sond, Qinglong Channical Industry Yard Haimes City, Jiangua, China 226121 ection 9 - Physical and Chemical Properties ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water: null doi: Practically odorless Praporation Rate: N/A urity (on dry baris): 98-102% Vapor Pressure: N/A Relative Density: 0.2-0.6 grall (Solid) esidue on Emrinon; NNT 0.2% Solubility: 1%	Safety Data Sheet Nantong Champhi Food Additive Co. Ltd. No. 15, Daping Road, Qinglong Chemical Industry Yard Haimes City, Jinague, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustble solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations.
Safety Data Sheet Nuroug Changhai Food Additive Co. Ltd. No. 15. Dapiag Rad, Qinglong Chanical Industry Yard Haimas City, Jinagua, China 260121 ection 9 - Physical and Chemical Properties ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water: ranule N/A Moder: Practically odorless Evaporation Rate: N/A Motisture: NMT 0.2% Vapor Pressure: MA Motisture: NMT 0.2% Solubility: 1% Mit 4.5% Columnation: N/A H: 4.5~6.0 (10% Solution)	Safety Data Sheet Nanrong Changhai Food Additive Co., Ltd. No. 15. Daqing Road, Qinglong Chamical Industry Yard Haimen City, Jianguu, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and
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Safety Data Sheet Natora Changhai Food Additive Co., Ltd. Natora Changhai Food Additive Co., Ltd. No. 15, Doniga Road, Quaglong Chanical Industry Yard Haimes City, Jiangua, China 226121 ection 9 - Physical and Chemical Properties  ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water: manule dor: Practically odorless Evaporation Rate: N/A Granular Powder Inimal Explosion concentration for dust: 0.110 g1 0.055 g1	Safety Data Sheet Nationg Changhai Food Additive Co. Ltd. No. 15, Daping Road, Qinglong Chamical Industry Yard Haimese City, Jingus, Chim 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-inzardous for ground, sea and air transport. Section 15 – Regulatory Information
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Safety Data Sheet Nancag Changhai Food Additive Co., Ltd. No. 15, Daging Sond, Qinglong Chamical Industry Yard Haimea City, Jiangua, China 226121 ection 9 - Physical and Chemical Properties ppearance: White crystalline powder or <u>Partition Coeffecient:n-octanol/water:</u> NA dor: Practically odorless <u>Evaporation Rate:</u> N/A dor: Practically odorless <u>Haima Deling Not</u> 0.2% <u>Solubility:</u> 1% Heiting Point Range: 248-250 °C Haimano Ignition Imperature: 248-250 °C Viscosity: N/A <u>Granular Powder</u> finimal Explosion concentration for dust: 0.110 g1 0.055 g1 farimal Explosion Pressure 4. 206 bar-m/sec 206 bar- m/sec	Safety Data Sheet Nationg Changhai Food Additive Co. Ltd. No. 15, Daping Road, Qinglong Chamical Industry Yard Haimes City, Jingut, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable
Safety Data Sheet Nancag Canaphai Food Additive Co., Ltd. Nancag Changhai Food Additive Co., Ltd. Nat. 15, Daping Boad, Qinglong Chanical Industry Yard Haimes City, Jingua, China 226121 ection 9 - Physical and Chemical Properties  ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water: NA dor: Practically odorless Evaporation Rate: N/A dor: Practically odorless Evaporation Rate: Practical Proveder finimal Explosion concentration for dust: 9.8 Bars 9.8 Bars dt: 206 bar-m/sec 206 bar-m/sec extended Practical Proveder finite Rate: Pr	Safety Data Sheet Nutrong Champhi Food Additive Co. Ltd. No. 15, Daqiag Road, Qinglong Chamical Industry Yard Haimee Corp, Jinayu, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 302 Extremely Hazardous Substances. Not applicable
Safety Data Sheet Natroag Changhai Food Additive Co., Ltd. No. 15, Daging Scad, Qingloog Chanical Lindustry Yard Haimea City, Jinguu, China 226121 ection 9 - Physical and Chemical Properties  ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water: NA dor: Practically odorless Evaporation Rate: N/A dor: Prostare: NMT 0.2% Evaporation Rate: N/A Evaporation Rate: N/A Evaporation Temperature: N/A Evaporation Temperature: N/A Evaporation Temperature: N/A Decomposition Temperature: N/A Evaporation Temperature: N/A Evaporation Rate: N/A Evaporation Temperature: N/A Evaporation Temperatu	Safety Data Sheet Nutrong Changhai Food Additive Co., Ltd. No. 15, Donjag Road, Oginolog, Chamical Industry Yard Haimes City, Jimgva, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR. 370): Not applicable Section 313 Toxic Chemica(s): Not applicable Section 313 Toxic Chemica(s): Not applicable Section 313 Toxic Chemica(s): Not applicable
Safety Data Sheet Namong Changhai Food Additive Co., Ltd. Namong Changhai Food Additive Co., Ltd. No. 15, Donging Sond, Qinglong Chanical Industry Yard Haimes City, Jingru, China 226121 ection 9 - Physical and Chemical Properties ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water: ranule NA Medie: Practically odorless Praporation Rate: N/A Wager Pressure: N/A Relative Density: 0.2-0.6 g/ml (Solid) Solubility: 1% felting Point Range: 248-250 °C Fammability: N/A Hit-3 Fool (Or) \$ Solution) Auto-Ignition Temperature: N/A Builtal Boiling Point: N/A Hit-3 Fool (Or) \$ Solution) Auto-Ignition Temperature: 248-250 °C Isah Point: N/A Cranular Powder Inimal Explosion concentration for dust: 0.110 g/l 0.055 g/l Iarimal Explosion Pressure 9.8 Bars 9.8 Bars 5t: 206 bar-m/sec 207 207 207 207 207 207 207 207 207 207	Safety Data Sheet Narroag Changhi Food Additive Co. Ltd. No. 15, Daqiag Road, Qinglong Chamical Industry Yard Haimee Corp, Jinagu, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustble solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 302 Extremely Hazardous Substances. Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Plense check the consequences of national regulations on produce according to direct
Safety Data Sheet Nationg Changhai Food Addiniv Co., Ltd. No. 13, Daiga Sood, Quelong Channel Industry Yard Haimea Car, Jiangu, China 226121 ection 9 - Physical and Chemical Properties ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water:. N/A dor: Practically odorless Praperation Rate: N/A Univer Construction, NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2-0.6 g/ml (Solid) esidue on Ignition; NAT 0.2% Solubility: 1% Relative Density: 0.2% Solubility: 1	Safety Data Sheet Narroug Changhi Food Additive Co. Ltd No. 15, Daping Road, Qinglong Chamical Industry Yard Haimae City, Jiangu, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 302 Extremely Hazardous Substances. Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be of
Safety Data Sheet Natora Changhai Food Additive Co., Ltd. No. 15, Doiging Sond, Qinglong Chanical Industry Yard Haimea City, Jiangua, China 226121 ection 9 - Physical and Chemical Properties  ppearance: White crystalline powder or <u>Partition Coeffecient:n-octanol/water:</u> NA dor: Practically odorless <u>Evaporation Rate:</u> N/A dor: Practically odorless <u>Evaporation Temperature:</u> N/A dor: Decomposition Temperature: 248-250 °C Viscosity: N/A <u>Granular Powder finimal Explosion concentration for dust:</u> 0.010 g1 0.055 g1 faximal Explosion concentration for dust: 0.0655 g1 faximal Explosion Pressure <u>9.8 Bars</u> <u>9.8 Bars dst</u> 206 bar-m/sec ection 10 - Stability and Reactivity tability: Stable for 5 years when stored under proper conditions. Materials to Avoid. rong oxidizing agents arardous <u>Peromposition Products</u> ; Carbon monoxide, carbon dioxide, and nitrogen tides formed under fire conditions. arardous <u>Peromposition Products</u> ; Carbon monoxide, carbon dioxide, and nitrogen tides formed under fire conditions.	Safety Data Sheet Nationg Champhi Food Additive Co., Ltd. No. 15, Donging Sond, Guigelong Chamical Industry Yard Haimee City, Jimgin, Chim 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information United States Regulatory Informations Section 302 Extremely Hazardous Substances. Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be solvent. Polythene liner utilized as the Contact/Primary Packaging material is classified ustable for Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH Polythene liner utilized as the Contact/Primary Packaging material is classified ustable for Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH Polythene liner utilized as the Contact/Primary Packaging material is classified ustable for Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH
Safety Data Sheet           Namou Changhai Food Addinive Co., Ltd.           Namou Changhai Food Addinive Co., Ltd.           No. 13, Daign Sood, Qinglong Channel I Industry Yard           Haimea City, Jingru, China 226121           ection 9 - Physical and Chemical Properties           ppearance:         White crystalline powder or NA           doir:         Practically odorless           print:         N/A           doir:         Practically odorless           print:         N/A           Distrue:         N/A           Relative Density:         0.20.6 g/ml (Solid)           exidue on Ignition:         N/A           Relative Density:         0.20.6 g/ml (Solid)           exidue on Ignition:         N/A           Relative Density:         0.20.6 g/ml (Solid)           atial Boiling Point:         N/A           H: 4.5 - 60 (10% Solution)         Auto-Ignition Temperature:           Auto-Ignition Temperature:         N/A           Barimal Explosion Oncentration for dust:         0.110 gl         0.055 g/l           farimal Explosion Pressure         9.8 Bars         9.8 Bars           St:         206 bar-m/sec         206 bar-m/sec           ection 10 - Stability and Reactivity         Salability; Stable for	Safety Data Sheet Nutroag Changhai Food Additive Co., Ltd. No. 15, Donigh Rood, Orginoga Chamical Industry Yard Haimes City, Jimgva, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United State: Regulatory Information United State: Regulatory Information SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 313 Toxic Chemica(d): Not applicable Section 313 Toxic Chemica(d): Papilations Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or include on the "Candidate List" as defined by REACH Polytheme liner unlized as the Contact/Primary Packaging material is classified suitable food
Safety Data Sheet Namong Changhai Food Additive Co., Ltd. Namong Changhai Food Additive Co., Ltd. No. 15, Donging Sond, Qinglong Channical Industry Yard Haimese City, Jiangua, China 226121 ection 9 - Physical and Chemical Properties  ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water: NA defor: Practically odorless Praporation Rate: N/A Urity (on drv baxis): 98-102% Vapor Pressure: N/A defor: Practically odorless Praporation Rate: N/A Urity (on drv baxis): 98-102% Vapor Pressure: N/A Gotaure: NMT 4.5% Relative Density: 02-0.6 g/ml (Solid) Solubility: 1% Heiding Point Range: 248-250 °C Hammability: N/A Heid-Solution Heides Solution Heides H	Safety Data Sheet Nations Champhi Food Additive Co., Ltd. No. 13, Doing Sood, Originoga Chamical Industry Yard Hainnee City, Jingen, Chim 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH. Polythene liner utilized as the Contact/Primary Packaging material is classified suitable fo Food Grade use. TSCA Inventory Item; Yes
Safety Data Sheet           Namou Changhai Food Additive Co., Ltd.           No. 15, Daging Soad, Qinglong Chanical Industry Yard           Hainesa City, Jiangu, China 226121           ection 9 - Physical and Chemical Properties           ppearance:         White crystalline powder or ranule           doi:         Practically odorless           practace:         NA           doi:         Practically odorless           print:         NA           loisture:         NMT 0.2%           Solubility:         1%           loisture:         NMT 0.2%           Solubility:         1%           loisture:         NA           doistore:         NA           atical Boiling Point:         NA           Auto-Egnition Temperature:         NA           distage on transce:         440-520 °C           lash Point:         NA           distage on transce:         0.100 gl           linial Boiling Point:         NA           diatical Boiling Coint concentration for dust:         0.110 gl         0.055 gl           lash Point:         NA         Uiscosity: NA           diatical Boiling Coint on the stativity         1110 gl         0.055 gl           lastit <t< td=""><td>Safety Data Sheet           Nationg Changhai Food Additive Co., Ltd.           No. 15, Donign Sond, Orginopag Chamical Industry Yard           Nations City, Jimgin, China 226121           Section 13 - Disposal Considerations           Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations.           Section 14 - Transportation Information           Aspartame is considered to be non-hazardous for ground, sea and air transport.           Section 15 - Regulatory Information           Varieted States Regulatory Information:           Saction 15 - Regulatory Information:           Section 15 - Regulatory Information:           United States Regulatory Information:           Section 30 - Extremely Hazardous Substances. Not applicable Section 313 Toxic Chemical(s): Not applicable           Europe:           Please check the consequences of national regulations on produce according to direct 67/548C.           There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH.           Polythene liner utilized as the Contact/Primary Packaging material is classified suitable food Grade use.           TSCA Inventory Item: Yes OSHA: No known OSHA Hazards</td></t<>	Safety Data Sheet           Nationg Changhai Food Additive Co., Ltd.           No. 15, Donign Sond, Orginopag Chamical Industry Yard           Nations City, Jimgin, China 226121           Section 13 - Disposal Considerations           Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations.           Section 14 - Transportation Information           Aspartame is considered to be non-hazardous for ground, sea and air transport.           Section 15 - Regulatory Information           Varieted States Regulatory Information:           Saction 15 - Regulatory Information:           Section 15 - Regulatory Information:           United States Regulatory Information:           Section 30 - Extremely Hazardous Substances. Not applicable Section 313 Toxic Chemical(s): Not applicable           Europe:           Please check the consequences of national regulations on produce according to direct 67/548C.           There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH.           Polythene liner utilized as the Contact/Primary Packaging material is classified suitable food Grade use.           TSCA Inventory Item: Yes OSHA: No known OSHA Hazards
Safety Data Sheet Namong Changhai Food Additive Co., Ltd. No. 15, Donging Sond, Qinglong Channical Industry Yard Haimes City, Jiangua, China 226121 ection 9 - Physical and Chemical Properties ppearance: White crystalline powder or <u>Partition Coeffecient:n-octanol/water:</u> MA Medr: Practically odorless <u>urity (on drv basis)</u> : 98-102% <u>Urity (on drv basis</u> ): 90-10000 mg/kg (mouse) <u>Urity (on drv drv basis</u> ): 90-10000 mg/kg (mouse) <u>Urity (on drv basis</u> ): 90-10000 mg/kg (mouse) <u>Urity (on drv drv basis</u> ): 90-10000 mg/kg (mouse) <u>Urity (on drv drv basis</u> ): 90-10000 mg/kg (mouse) <u>Urity (on drv drv basis</u> ): 90-1	Safety Data Sheet Nations Changhai Food Additive Co., Ltd. No. 15, Donign Sood, Onginopa Chamical Industry Yard Haimes City, Jimgva, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 313 Toxic Chemica(d): Not Papplicable Section 314 Concern (SVHC), or included on the "Candidate List" as defined by REACH Polythene liner utilized as the Contact/Primary Packaging material is classified suitable for God Grade use. TSCA Inventory Item; Yes OSHA: No known OSHA Hazards Section 16- Other Information
Safety Data Sheet         Namong Changhai Food Additive Co., Ltd.         No 15, Donging Sond, Qinglong Chanical Industry Yard         Haimes City, Jinagu, China 226121         ection 9 - Physical and Chemical Properties         ppearance: White crystalline powder or ranule       Partition Coeffecient:n-octanol/water: NA         doi: Practically odorless       Evaporation Rate: N/A         urity (on dry baris): 98-102%       Yapor Pressure: N/A         doistrar: NMT 4.5%       Solubility: 11%         felting Point Range: 248-250 °C       Flammability: N/A         H: 4-5-60 (10% Solution)       Auto-Ignition Temperature: N/A         dill Boiling Point: N/A       Decomposition Temperature: 248-250 °C         H: 4-5-60 (10% Solution)       Auto-Ignition Temperature: 248-250 °C         H: 4-5-60 (10% Solution)       Ottor Pressure         dill Boiling Point: N/A       Decomposition Temperature: 248-250 °C         Isah Point: Solution on concentration for dust:       0.110 gl 0.055 gl         faring agents       0.110 gl 0.055 gl         isar	Safety Data Sheet Naroag Changhi Food Additive Co. Ltd No. 15, Daing Sond, Qinglong Chamical Industry Yard Haimea City, Jingux, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH. Polythene liner utilized as the Contact/Primary Packaging material is classified suitable for Food Grade use. TSCA Inventory Item: Yes OSHA: No known OSHA Hazards Section 16 - Other Information References: Not available Other Special Considerations; Not available
Safety Data Sheet           Namog Changhai Food Additive Co., Ltd.           No. 15, Daging Soad, Qinglong Chanical Budnetry Yard           Haimes City, Jingru, China 226121           ection 9 - Physical and Chemical Properties           ppearance: White crystalline powder or ranule         Partition Coeffecient:n-octanol/water: NA           doi: Practically odorless         Evaporation Rate: N/A           urity (on dry baris): 98-102%         Yapor Pressure: N/A           Goisture: NMT 4.5%         Relative Density: 0.2-0.6 g/ml (Solid)           eiddee on Lemiton: NMT 0.2%         Solubility: 1%           Felting Point Range: 248-250 °C         Flammability: N/A           H: 4-5-60 (10% Solution)         Auto-Egnition Temperature: N/A           ath Point: N/A         Decomposition Temperature: N/A           Ist = 2000 (or 0% Solution)         Auto-Egnition Temperature: N/A           atinal Boiling Point: N/A         Decomposition Temperature: N/A           Ist = 2000 boar-m/sec         206 bar-m/sec           Ist = 200 son concentration for dust:         0.110 gl         0.055 gl           Ist = 200 son concentration for dust:         0.110 gl         0.055 gl           Ist = 200 son concentration for dust:         0.110 gl         0.055 gl           Istimating Explosion Products:         Caronon monoxide, carbon dioxide, and nitrogentides for	Safety Data Sheet Nationg Changhai Food Additive Co., Ltd. No. 13, Doing Rood, Oginologa Chamical Industry Yard Hainese City, Jimgva, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: Sate Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH. Polythene liner utilized as the Contact/Primary Packaging material is classified suitable fi Food Grade use. TSCA Inventory Item: Yes OSHA: No known OSHA Hazards Section 16- Other Information References: Not available Other Special Consideration; Not available Created: 1/03/2007
Safety Data Sheet         Namong Changhai Food Additive Co., Ltd.         No. 15, Donging Sond, Qinglong Channical Industry Yard         Haimes City, Jiangua, China 226121         ection 9 - Physical and Chemical Properties         ppearance: White crystalline powder or ranule       Partition Coeffecient:n-octanol/water: NA         doir: Practically odorless       Evaporation Rate: N/A         wirty (on dry bacis): 98-102%       Evaporation Rate: N/A         doirture: NMT 4.5%       Relative Density: 02-0.6 g/ml (Solid)         eidee on Equition; NMT 0.2%       Solubility: 1%         Heids Solution;       Auto-Ignition Temperature: N/A         data Boiling Point; N/A       Decomposition Temperature: 248-250 °C         Haih Boint: N/A       Discure: 0.110 g1       0.055 g/l         Iath Doint: N/A       Decomposition Temperature: 248-250 °C       Isamular         Iath Doint: N/A       Decomposition Temperature: 248-250 °C       Viscoity: N/A         Iath Boint: Solution;       Auto-Ignition Temperature: 248-250 °C       Viscoity: N/A         Iath Doint: N/A       Decomposition Temperature: 248-250 °C       Solution: 0.110 g1       0.055 g/l         Iatimal Explosion concentration for dust:       0.110 g1       0.055 g/l       Solution: 0.110 g1       0.055 g/l         Iatimal Explosion Pressure       9.8 Bars	Safety Data Sheet Nationg Champhi Food Additive Co., Lid No. 13, Doing Sood, Originoga Chamical Industry Yard Hainnee City, Jingeu, Chim 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH: Polythene liner utilized as the Contact/Primary Packaging material is classified suitable for food Grade use. TSCA Inventory Item: Yes OSHA: No known OSHA Hazards Section 16 - Other Information References: Not available Other Special Considerations; Not available Created: 1/03/2007 Updated: 1/01/2018
Safety Data Sheet           Namou Changhai Food Additive Co., Ltd.           No 15, Dapiga Soad, Qinglong Chanical Budnetry Yard           Haimes City, Jingru, China 226121           ection 9 - Physical and Chemical Properties           ppearance: White crystalline powder or ranule         Partition Coeffecient:n-octanol/water: NA           doi: Practically odorless         Evaporation Rate: N/A           urity (on dry baris): 98-102%         Yapor Pressure: N/A           Goldsteir: NMT 4.55%         Solubility: 02-0.6 g/ml (Solid)           Solubility: 1%         Flammability: N/A           Relative Density: 0-20.6 g/ml (Solid)         Solubility: 1%           felting Point Range: 248-250 °C         Flammability: N/A           Rel-45-60 (10% Solution)         Auto-Ignition Temperature: N/A           atila Boiling Point: N/A         Decomposition Temperature: N/A           Ital: Point: N/A         Decomposition Temperature: N/A           Ital: Boiling Point: N/A         Decomposition Temperature: N/A           Ital: Boiling Point: N/A         Decomposition Temperature: N/A           fatarinal Explosion concentration for dust:         0.110 gl         0.055 gl           fatarinal Explosion Concentration for dust:         0.110 gl         0.055 gl           fatarinal Explosion Preducty: Carbon monoxide, carbon dioxide, and nitrogen tides formed under fre couditos.<	Safety Data Sheet Nutrong Changhai Food Additive Co., Ltd. No. 13, Donign Sond, Qingologa Chanical Industry Yard Hainese City, Jimgva, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information Section 15 – Regulatory Information Munited States Regulatory Information Section 31 Extremely Hazardous Substances. Not applicable Europe: Plenas check the consequences of national regulations on produce according to direct 6/540EC. There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or include on the "Candidate List" as defined by REACH Polythene liner utilized as the Contact/Primary Packaging material is classified suitable f Food Grade use. TSCA Inventory Item: Yes OSHA: No known OSHA Hazards Section 16 - Other Information References: Not available Other Special Consideration; Not available Created: 1/03/2007 Updated: 1/01/2018 The above information is believed to be correct but does not purport to be all inclusive an shall be used outy as a guide. Nutang Chemical Inc. extends no warranties and makes
Safety Data Sheet         Namong Champhai Food Additive Co., Ltd.         Personance:       White crystalline powder or Number of Numb	Safety Data Sheet Nationg Changhai Food Additive Co. Ltd No. 13, Doing Sood, Guigolog Chamical Industry Yard Hainnee City, Jingeu, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolvy or mix the material with a combustible solvent and burn in a chemical incimerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SARA Listed: Hazard Categories under Trile III Rules (40 CFR 370): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Please check the consequences of national regulations on produce according to direct 67/548/EC. There are no substances present within the products supplied to you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH: Polythene liner utilized as the Contact/Primary Packaging material is classified suitable for Food Grade use. TSCA Inventory Item; Yes OSHA: No known OSHA Hazards Section 16 - Other Information References; Not available Other Special Considerations; Not available Created: 1/03/2007 Updated: 1/01/2018 The above information is believed to be correct but does not purport to be all inclusive an shall be used only as a guide. Nuttang Chemical Inc. extends no warranties and makes no representation as to the accuracy or completeness of the information constanted herein.
Safety Data Sheet Nationg Changhai Food Additive Co., Ltd. No. 15, Donging Road, Qinglong Channich I Industry Yard Haimea City, Jingyu, China 226121 ection 9 - Physical and Chemical Properties  ppearance: White crystalline powder or Partition Coeffecient:n-octanol/water:. N/A dor: Practically odorless Evaporation Rate: N/A Mixit You Gry Datassy Solution Relative Density: 0.2-0.6 gtml (Solid) Ectidae on Izmition: N/A Relative Density: 0.2-0.6 gtml (Solid) Ectidae on Izmition: N/A Relative Density: 0.2-0.6 gtml (Solid) Ectidae on Izmition: N/A H: 4-5-60 (10% Solution) Auto-Izmition Temperature: N/A Bith Point: N/A Decomposition Temperature: N/A Relative Density: N/A Relative	Safety Data Sheet Namong Changhai Food Additive Co., Ltd. No. 15, Donign Rood, Onginong Chamical Industry Yard Hainese City, Jinngva, China 226121 Section 13 – Disposal Considerations Contact a licensed professional waste disposal service to dispose of this material. Dissolv or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose in accordance with federal, state and local regulations. Section 14 – Transportation Information Aspartame is considered to be non-hazardous for ground, sea and air transport. Section 15 – Regulatory Information United States Regulatory Information: SaRA Listed: Hazard Categories under Title III Rules (40 CFR 370): Not applicable Section 313 Toxic Chemical(s): Not applicable Section 313 Toxic Chemical(s): Not applicable Europe: Please check the consequences of national regulations on produce according to direct 67/540EC. There are no substances present within the products supplicable Europe: Please theck the consequences of national regulations on produce according to direct 67/540EC. There are no substances present within the products supplicable or you considered to be of Very High Concern (SVHC), or included on the "Candidate List" as defined by REACH Polythene liner utilized as the Contact/Primary Packaging material is classified suitable f Food Grade use. <u>TSCA Inventory Item:</u> Yes <u>OSHA:</u> No known OSHA Hazards Section 16- Other Information <u>References</u> : Not available <u>Other Special Coniderations</u> : Not available Created: 1/03/2007 Updated: 1/01/2018 The above information is believed to be correct but does not purport to be all inclusive an shall be used only as a guide. Nutang Chemical Inc. extends no warranties and makes

## Acesul Fame (P-ACEF)

	A SHEET		9	Celanese
Product name D	0 483			AGHS/EN
	1006B		Revision Date Jan. 18.2	
Revision Number 3			Issuing date Feb.24.2	2016***
1. Identificatio	on of the	substance/prepara	tion and the compar	ny/undertaking
Product name				
D 483				
Manufacturer or su Celanese Sales Ger Am Unisys-Park 1 65843 Sulzbach (Tau Germany	many Gmbl			
Celanese Productio Am Unisys-Park 1 85843 Sulzbach (Tau Germany		GmbH & Co. KG		
Product Information HazCom@celanese				
Emergency telepho +(65) 62656917 (Op or fax request to +(66 or email to posh.er@	erations Roo 5) 62664696	(Facsimile to Operations Roo	жп)	
In China Emergency	Number: 8	86-532-83889090 (NRCC)		
Identified uses Food additive				
2. Hazards ide	ntificatio	on		
Statements of Haza	rd	Not a dangerous substan	ce according to GHS	
3. Compositio	n/Inform	nation on ingredient	<u>s</u>	
		CAS-No	Percer	nt 96
Components		55589-62-3	100	

SAFETY DATA SHEET		🍠 Cela	inese	SAFETY DATA SHEET		🌀 Celanese
Product name D 483 MSDS number 81006B Revision Number 311.01		A Revision Date Jan 18.2016*** Issuing date Feb 24.2016***	1000000	Product name D.483 MSDS number 810085 Revision Number 3***-01		AGHSIEN Revision Date Jan 18.2018*** Issuing date Feb.24.2016***
Eyes Rinse immediately with pierty of water,	r, also under the evelids, for a	t least 15 minutes. Get medical attentio	20.	Incompatible products peidzing agents		<u></u>
Inhalation Nove to fresh ar. Get medical attention				Protection - fire and explor Take measures to prevent to sources of ignition. Potential	re build up of electrostat	c charge. Avoid dust formation. Keep away from heat and
Ingestion Do NOT induce vomiting. Get medical	al attention if symptoms occur			Dust Explosion Group ST1		
5. Fire-fighting measures				Material storage Keep in a dry, cool place. Ke	ep away from direct sur	iot.
NFPA: Health: D	Flammability: 0	Instability: 0		Incompatible products pridizing agents		
Suitable extinguishing media Foam, Dry chemical, Water, Carbon di	fickide (CO2)			Technical measures/Stora Keep tightly dosed in a dry a	ge conditions and cool place	
Extinguishing media which must not Do not use a solid water stream as it m	ot be used for safety reason may scatter and spread fire"	5		8. Exposure controls (		ion
Special exposure hazards arising fro pases Under conditions giving incomplete con			s, or released	ACGIH Exposure Limits to exposure limits established.		
Carbon monoxide Carbon dioxide (CO2)	anna an taona an taon			Exposure controls		
Nitrogen oxides (NCx) Sulfur oxides (SCx) POTENTIAL DUST EXPLOSION HAZ/	ARD :					
Special protective equipment for fire Wear self-contained breathing apparati				Personal protective equipment. General advice	Avoid contact with skill	n and eyes. Do not breathe dust.
Environmental precautions				tygiene measures	When using, do not ex hypere and safety or	at, drink or smoke. Handle in accordance with good industrial active. Wash hands before breaks and at the end of
Dike and collect water used to fight fire 6. Accordion to I referse or most				Respiratory protection	workday.""	y protective equipment normally required.
6. Accidental release mea	130162			Eye protection	salety glasses	and the second second second
Personal precautions Use adequate ventilation. Keep a	away from heat and sources	d'ignition.		Skin protection	protective suit	
Environmental precautions Do not discharge into the drains!	sisurface watersigroundwater			Fand protection Suitable material Type	protective gloves nitrile rubber Tricottil (Company HC	L) or comparable article,
Methods for cleaning up Contain spilage, pick up with an container for disposal according	n electrically protected vacuur g to local regulations (see sec	n deaner or by wet-trushing and stansi ion 13). Use mechanical handling equi	fer to a privert.	Evaluation Material thickness Break through time	or refer to glove manu according to EN 374 approx. 1.5 mm 450 min	facturer's recommendation
7. Handling and storage				<ol><li>Physical and chemic</li></ol>	cal properties	
7. Handling and storage Advice on safe handling Anoid contact with skin, eyes and exhaust in work rooms.	nd clothing. Do not breathe va	poursidust. Provide sufficient air excha		<ol> <li>Physical and chemion <u>Appearance</u> Form</li> </ol>	cal properties crystaline, powder	146.00
Advice on safe handling Aioid cortact with skin, eyes and	nd clothing. Do not breathe va	poursidust. Provide sufficient air excha		Appearance		~
Advise on safe handling Axid contact with skin, eyes and exhaust in work froms. SAFETY DATA SHEET	në olofhing. Do not breathe va	🌀 Cela	nese	Appearance Form	orystaline, powder	🧿 Celanese
Advice on safe handling Audi contact with skin, eyes and exhaust in work rooms.		🌀 Cela	Inese	Appearance Form	orystaline, powder	Celanese Revision Date: Jan 13 2019** Bearing date: Fab 24 2016**
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Advise on safe handling Ancid contact with skin, eyes and extrast in work more. SAFETY DATA SHEET Product name 0.483 MSD5 number 81005 Relision Number 3"".01 9. Physical and chemical Coor 0 Mathematical and chemical Mathematical and chemical Mathematical and chemical Mathematical and chemical Notargenesis reactor income Incompatible Mathematica Rootes of exposure S Immediate effects Skin M Eyes 0	al properties while contress Not Determined Not applicable <sup>the</sup> 210 °C No data available on determined Not Determined Not Determined Not Determined Not determined Not determined Not determined Not determined Not determined Not determined Sign eyes, inhalation. <sup>***</sup> Nay cause skin intation. Nay cause skin intation. Nay cause skin intation. Nay cause skin intation.	Cela Revision Date: Jan 18 2016 <sup>rm</sup> Resulting data: Reio 24 2016 <sup>rm</sup>	Inese IOISEN	Appearance Form SAFETY DATA SHEET Product same D 483 MSD5 number 3**07 MSD5 number 3**07 Accelent and the second s	ntation	AGHGEN Revision Date: Jan 13.2019*** basing date: Feb.24.2019*** No skin mitation rabbi OEDD 404 negative mouse OEDD 404 negative mouse OEDD 405 Nel evidence of carsinogenoty date segmentation Method: CEDD 405 Nel evidence of carsinogenoty Mares Test negative - with and without metabolic activation Method: CEDD 470 Metabolic activation Method: CEDD 470 Marmalian Expension Method: CEDD 471 Marmalian Expension Method: CEDD 473 Metabolic activation Cello 476 Nel toxing to negroductive and developmental toxicity Nic a betwee effects Oral and Sector 2000 gl (Péh) Brachtanio reino (sebra 591) OEDD 475 Nel Solice CeDD 476 Nel toxing to negroductive oral Similar to OEDD 476 Nel toxing to negroductive oral Similar to OEDD 476 Nel toxicity to negroductive oral Similar to OEDD 478 Similar to OEDD 478 Simi

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Product name D 4	83	AGHS/EN
	06B	Revision Date Jan. 18.2016***
Revision Number 3"	.01	Issuing date Feb.24.2018***
12. Ecological Ir	nformation	
13. Disposal cor	nsiderations	
	isposal depends on the produc	ement related state and local regulations. The choice of the ct composition by the time of disposal as well as the local stat
Uncleaned empty pack Contaminated packagin	ka <mark>ging</mark> g should be emptied as far as	possible and after appropriate cleansing may be taken for reu
14. Transport in	formation	
US Department of Tra	sportation Not regulated	
ADR/RID	Not regulated	
ADN	ADN: Container a Not regulated	nd Tanker
	Not regulated	
IMDG	Not regulated	
15. Regulatory i	nformation	
INTERNATIONAL REG	ULATIONS assified as dangerous accordin	ng to Chinese legislation
This substance is not d	assified as dangerous accordir	ng to Japanese legislation
International Invento Listed on the chemical i Australia (AICS) Canada (DSL) China (IECSC) Europe (EINECS) Mexico (INSQ) New Zealand (NZIoC)		ntries or qualifies for an exemption:
16. Other inform	ation	

Product name D 483 MSDS number 81006B Revision Number 3 <sup>***</sup> .01		Revision Date Issuing date		AGHS/EN
16. Other information HMIS: Health: 0	Flammability: 0	)	Physical Hazard: 0	
Prepared By Product Stewardship Department Celanese				
For further information, see: For more information, other material www.celanese.com).	safety data sheets or techr	nical data sheets ple	ase consult the Cela	anese homepage
Other Information: Observe national and local legal req	uirements.			
Changes against the previous versio	n are marked by ""			
Sources of key data used to comp information contained in this safety of acceptable. The absence of data ele requirements is available.""	lata sheet is based on Cela			
Further information	CANDERSE OF REAL	1949 B	12/2011 1122	fety requirement

### **CARRAGEENAN POWDER**

Б

DIA	ZHEJIANG TOP HYDROCOLLOIDS	CO. LTD
BLG	2299 Xinggong Road, Economic Development Za	
	201, Zhioang Province, R&, Chica	and a second
	Tel:+86 573 85905533	
	Fax:+86 573 85985522	
MATERIAL SAFETY DATA SHEET		
1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATE	m	1
PRODUCT NAME: REFINED KAPPA CARRAGEENAN		
CAS#: 9000-07-1		
CI#: Not available		
SYNONYM:		
Chemical Name: Not available		
Chemical Formula: Not available		
CONTACT INFORMATION:		
ZHEJIANG TOP HYDROCOLLOIDS CO., LTD.		
2299 Xinggong Road, Economic Development Zone, Pinghu	314200	
Zhejiang Province, P.R. China .	144200,	
FOR MORE INFORMATION CALL		
(Monday-Friday, 8:00am-5:00pm)		
+85 21 3329 2056		
IN CASE OF EMERGENCY CALL:		
(24 Hours/Day, 7Days/Week)		
+86 150 0566 8787		
ORDER ONLINE:		
E-mail: alex.chan@sh-blg.com		
eman: aex.changeroig.com		
2:COMPOSITION AND INFORMATION ON INGREDIENT		
INGREDINET NAME CAS#	% BY WEIGHT	
CARRAGEENAN 9000-07-1	. 100%	
TOXICOLOGICAL DATA ON INGREDIENTS: Not applicable		
3:HAZARDS IDENTIFICATION		
POTENTIAL ACUTE HEALTH EFFECTS:		
Hazardous in case of inhalation. Slightly hazardous in case of	skin contact (irritant), of eye contact (irr	itant), of
ngestion.		
POTENTIAL CHRONIC HEALTH EFFECTS:		133
tazardous in case of inhalation. Slightly hazardous in case of	kin contact (irritant), of eye contact (irrita	nt).
CARCINOGENIC EFFECTS: Not available.		
MUTAGENIC EFFECTS: Not available.		
TERATOGENIC EFFECTS: Not available.		
DEVELOPMENTAL TOXICITY: Not available.		
4:FIRST AID MEASURES		
	ton the second second	



# Konjac Gum

BLG <sup>®</sup> MATERIAL SAFETY D	ATA SHEET	浙江上方生物科技有限公司 Zhejiang Top Hydrocolloids Co., Ltd 2299 Xlonggong Road, Economic Development Zone Pinghu 314200, Zhejiang Province, P.R.Chin Tel:+86 573 8598553 Fax:+86 573 8598553
11 CHEMICAL PRO DUCT AND CO	MPANY IDENTIFICATION	
PRODUCT NAME: KONJAC GUM		
CAS#: 37220-17-0		
CI#: Not available		
SYNONYM: GLUCOMANNAN		
Chemical Name: Not available	24	
Chemical Formula: Not available		
CONTACT INFORMATION:		
ZHEJIANG TOP HYDROCOLLOIDS	CO., LTD.	
2299 Xinggong Road, Economic Deve	lopment Zone, Pinghu 314200,	
Zhejiang Province, P. R. China		
FOR MORE INFORMATION CALL:		
(Monday-Friday, 8:00am-5:00pm)		
+86 2133292056		
IN CASE OF EMERGENCY CALL:		
(24 Hours/Day, 7Days/Week) +86 15005668787		
(24 Hours/Day, 7Days/Week)		
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE:		
(24 Hours/Day, 7Days/Week) +86 15005668787	TION ON INGREDIENTS	
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com	TION ON INGREDIENTS CAS#	% BY WEIGHT
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT		% BY WEIGHT 100%
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN	CAS# 37220-17-0	
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRE	CAS# 37220-17-0	
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME	CAS# 37220-17-0 EDIENTS: Not applicable.	
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRE 3:HAZARDS IDENTIFICATION POTENTIAL ACUTE HEALTH EFFER Hazardous in case of inhalation. Slig	CAS# 37220-17-0 EDIENTS: Not applicable. CTS:	100%
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRE 3:HAZARDS IDENTIFICATION POTENTIAL ACUTE HEALTH EFFER Hazardous in case of inhalation. Slig ingestion, of inhalation.	CAS# 37220-17-0 EDIENTS: Not applicable. CTS: htly hazardous in case of skin	100%
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRO 3:HAZARDS IDENTIFICATION POTENTIAL ACUTE HEALTH EFFE Hazardous in case of inhalation. Slig ingestion, of inhalation. POTENTIAL CHRONIC HEALTH EF	CAS# 37220-17-0 EDIENTS: Not applicable. CTS: htly hazardous in case of skin FECTS:	100% contact (imitant), of eye contact (imitant), of
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRE 3:HAZARDS IDENTIFICATION POTENTIAL ACUTE HEALTH EFFER Hazardous in case of inhalation. Slig ingestion, of inhalation.	CAS# 37220-17-0 EDIENTS: Not applicable. CTS: htty hazardous in case of skin FECTS: ty hazardous in case of skin cor	100%
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRE 3:HAZARDS IDENTIFICATION POTENTIAL ACUTE HEALTH EFFE Hazardous in case of inhalation. Sligh ingestion, of inhalation. POTENTIAL CHRONIC HEALTH EFF Hazardous in case of inhalation. Sligh CARCINOGENIC EFFECTS: Not available	CAS# 37220-17-0 EDIENTS: Not applicable. CTS: htty hazardous in case of skin FECTS: ty hazardous in case of skin cor	100% contact (imitant), of eye contact (imitant), of
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRU 3:HAZARDS IDENTIFICATION POTENTIAL ACUTE HEALTH EFFE Hazardous in case of inhalation. Slig ingestion, of inhalation. POTENTIAL CHRONIC HEALTH EF Hazardous in case of inhalation. Sligh CARCINOGENIC EFFECTS: Not available.	CAS# 37220-17-0 EDIENTS: Not applicable. CTS: htty hazardous in case of skin FECTS: ty hazardous in case of skin cor ske.	100% contact (imitant), of eye contact (imitant), of
(24 Hours/Day, 7Days/Week) +86 15005668787 ORDER ONLINE: E-mail: alex.chan@sh-blg.com 2:COMPOSITION AND INFORMAT INGREDINET NAME GLUCOMANNAN TOXICOLOGICAL DATA ON INGRE 3:HAZARDS IDENTIFICATION POTENTIAL ACUTE HEALTH EFFE Hazardous in case of inhalation. Sligh ingestion, of inhalation. POTENTIAL CHRONIC HEALTH EFF Hazardous in case of inhalation. Sligh CARCINOGENIC EFFECTS: Not available	CAS# 37220-17-0 EDIENTS: Not applicable. CTS: htty hazardous in case of skin FECTS: ty hazardous in case of skin cor de.	100% contact (imitant), of eye contact (imitant), of

4:FIRST ALD MEASURES	suitable protective citching in case of insufficient vertilation, was suitable respiratory equipment if you feel unweil,
EYE CONTACT: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of	seek medical attention and show the label when possible.
water for at least 15 minutes. Get medical attention if initiation occurs.	STORAGE: Keep container dry: Keep in a cool place. Ground all equipment containing material. Keep container
SKIN CONTACT: Wash with soap and water. Cover the irritated skin with an enolient. Get medical attention if	tightly closed. Reep in a cool, well-vertilated place. Combustble materials should be stored away from extreme heat
initiation develops.	and away farm strong oxidizing agents.
SERIOUS SKIN CONTACT: Not available.	
INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult,	BASHOSHAR COMTROLS PRESIDENT PROTECTOR
give oxygen. Get medical attention.	
SERIOUS INHALATION: Not available	ENGINEERING CONTROLS: Use process enclosures, local extraust vertilation, or other engineering controls to
	keep arborne levels below recommended exposure limits. If user operations generate dust, have or mist, use
INGESTION: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth	vertilation to keep exposure to althome contaminants below the exposure limit.
to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen	PERSONAL PROTECTION: Selety gleases. Lab cast. Dust register: Be size to use an approved / certified
tight clothing such as a collar, tie, belt or waistband.	reprintor of equivalent. Goves.
SERIOUS INGESTION: Not available.	PERSONAL PROTECTON IN CASE OF A LARGE SPILL: Spilesh goggles. Full suit. Duct respirator Boots. Goves.
	A self contained breathing appendix should be used to excid infralation of the product. Suggested protective
SIFIRE AND EXPLOSION DATA	dothing might not be sufficient; consult a specialist before handling this product.
FLAMMABILITY OF THE PRODUCT: May be combustible at high temperature.	EXPOSURE LIMITS: Not available.
AUTO-LEGNITION TEMPERATURE: Not available.	12 N
FLASH POINTS: Not available.	INFITATION AND ORMICAL PROPERTIES
FLAMMABLE LIMITS: Not available.	PHYSICAL STATE AND APPEARANCE: Sold (Rowdend sold).
PRODUCTS OF COMBUSTION: Not available.	GDGR: Not available.
FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES: Slightly flammable to flammable in presence of	TASTE: Not available
hast. Non-fiammable in presence of shocks.	MOLECULAR WEIGHT: Not evaluate.
EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES:	COLOR: Ten or OF-white with dark species.
	PH (1% solution/water): Not available.
Risks of explosion of the product in presence of mechanical impact: Not available.	BOILING POINT: Not evaluate
Slightly explosive in presence of open flames and sparks.	MELTING POINT: Not available.
FIRE FIGHTING MEDIA AND INSTRUCTIONS:	CRETICAL TEMPERATURE: Not available.
SMALL FIRE: Use dry chemical powder.	SPECIFIC GRAVITY: Not available.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.	VAPOR DENSITY: Not available.
SPECIAL REMARKS ON FIRE HAZARDS: Not available.	VAPOR DENSITY: Not available. VAPOR PRESSURE: Not available.
SPECIAL REMARKS ON EXPLOSION HAZARDS:	VAPOR PRESSURE: Not averable. VOLATELITY: Not averable.
Fine (organic) dusts dispersed in air in sufficient concentrations, and in the presences of an ignition source is a	
potential dust explosion hazard.	ODOR THRESHOLD: Not evaluate
a (sa	WATER/OIL DIST. COEFF: Not evelable
6:ACCIDENTAL RELEASE MEASURES	10NUCITY (IN WATER): Not available.
	DESPERSION PROPERTIES: Not available.
SMALL SPILL:	SOLUBILITY: Not available
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading	
water on the contaminated surface and dispose of according to local and regional authority requirements.	LR-STABLETY AND HEACTIVITY DATA
LARGE SPILL:	STABLITY: The product is stable.
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on	INSTABILITY TEMPERATURE: Not available
the contaminated surface and allow evacuate through the sanitary system.	CONDITIONS OF INSTABILITY: Excess heat, dust generation.
	INCOMPATIBILITY WITH VARIOUS SUBSTANCES: Not evaluate
7:HANDLING AND STORAGE	CORROSIVITY: Not weighte
PRECAUTIONS: Keep away form heat. Keep away from sources of ignition. Empty containers pose a fire risk,	SPECIAL REMARKS ON REACTIVITY: Not evaluate
exponents the matchia under a firms boost. Ground all accomment motalision material. Do not beatha dust. Waar	SPECIAL REMARKS ON CORROSIVITY: Not evaluate.
evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Wear	SPECIAL REMARKS ON CORROSIVITY: Not available.
evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Wear POLYMERIZATION: Will not occur.	SPECIAL REMARKS ON CORROSEVENT: Not available. DSCL(EEC): The product is not classified according to the EU regulators.
POLYMERIZATION: Will not occur.	· · · · · · · · · · · · · · · · · · ·
POLYMERIZATION: Will not occue:	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.
POLYMERIZATION: Will not occur.  11.TOXICOLOGICAL INFORMATION  ROUTES OF ENTRY: Inhalation. Ingestion	DSCL(EEC): The product is not classified according to the BJ regulations.
POLYMERIZATION: Will not occur.  11:TOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhibition. Ingestion TOXICITY TO ANIMALS:	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.
POLYMERIZATION: Will not occur.  SLITORICOLOGICAL INFORMATION ROUTES OF ENTRY: Inheliation. Ingestion TOXICITY TO ANIMALS: LD50: Not available.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1
POLYMERIZATION: Will not occur.  11.ITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhalation. Ingestion TOXICITY TO ANIMALS: LDS6: Not available. LCS0: Not available.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.):
POLYMERIZATION: Will not occur.  11;TOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhibition. Ingestion TOXICITY TO ANIMALS: LDSG: Not available. LCSG: Not available. CCSG Not available. CSG: Not available. CS	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1
POLYMERIZATION: Will not occur.  SILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhalation. Ingestion TOXICITY TO ANIMALS: LDS0: Not available. LCS0: Not available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hazardous in case of skin contact (irrfart), of ingestion, of	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1
POLYMERIZATION: Will not occur.  11.ITORICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhaldon. Ingestion TOXICITY TO ANIMALS: LD50: Not available. LD50: Not available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hasandous in case of skin contact (intrant), of ingestion, of inhaldon.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1
POLYMERIZATION: Will not occur.  SILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhalation. Ingestion TOXICITY TO ANIMALS: LDS0: Not available. LCS0: Not available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hazardous in case of skin contact (irrfart), of ingestion, of	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E
POLYMERIZATION: Will not occur.  11.ITORICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhaldon. Ingestion TOXICITY TO ANIMALS: LD50: Not available. LD50: Not available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hasandous in case of skin contact (intrant), of ingestion, of inhaldon.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0
POLYMERIZATION: Will not occur.  II:TOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhabition. Ingestion TOXICITY TO ANIMALS: LDS0: Not available. LCS0: Not available. CKRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hazardous in case of skin contact (instant), of ingestion, of inhalation. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhalation. Ingestion TOXICITY TO ANIMALS: LDS0: Not available. LCS0: Not available. CTRKONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hazardous in case of skin contact (initiant), of ingestion, of inhalation. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1
POLYMERIZATION: Will not occur.  11.ITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhaldon. Ingestion TOXICITY TO ANIMALS: LDSG: hot available. LDSG: hot available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hazandous in case of skin contact (intent), of ingestion, of inhaldon. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A):
POLYMERIZATION: Will not occur.  ILI:TOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhabition. Ingestion TOXICITY TO ANIMALS: LDSG: Not available. LCSG: Not available. CTREONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SEPCIAL REMARKS ON OTHER TOXIC SEPCIAL SEPCIAL REMARKS ON OTHER TOXIC SEPCIAL REMARKS	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhabition. Ingestion TOXICITY TO ANIMALS: LD50: Not available. LD50: Not available. CIRCHOLE EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: NOT available. SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: NOT AVAILABLE HEFTERS SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: NOT AVAILABLE HEFTERS SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: NOT AVAILABLE HEFTERS SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: NOT AVAILABLE HEFTERS SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: NOT AVAILABLE HEFTERS SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: NOT AVAILABLE HEFTERS SPECIAL REMARKS ON CHRONIC HEFTERS SPECIAL REMARKS ON CHRONIC HEFTERS SPECIAL REMA	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhalation. Ingestion TOXICITY TO ANIMALS: LDSG: hot available. LDSG: hot available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Sightly hazardous in case of skin contact (irritant), of ingestion, of inhalation. SPECIAL REMARKS ON OTIXETY TO ANIMALS: Not available. SPECIAL REMARKS ON OTIXETY TO ANIMALS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Set to unlikely to cause shin infration or injun; Eve: Dust can cause mechanical eye Infration.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Fiammability: 1
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POLYMERIZATION: Will not occur.  11./TOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhateton: Engestion TOXICTY TO ANIMALS: LDSG: hot available. LDSG: hot available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: SIGN: This united in Instation or Injury. Eyes: Dust can cause mechanical eye inflation. Inhateton: I	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Persional Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves. Lab Cost. Dust respirator. Be sure to use an approved/certified respirator or
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POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhaldon. Ingestion TOXICITY TO ANIMALS: LDSC: hot available. LDSC: hot available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hexerious in case of skin contact (intent), of ingestion, of inhalation. SPECIAL REMARKS ON OTOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTOXICITY FOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXICITY FOR TOXIC EFFECTS ON HUMANS: Acute Potential Health Effects: SMI:: It is unlikely to cause skin initiation or inju; Eyes: Dust can cause mechanical eye initiation. Inhalation:: Swallowing this material is not likely to be harmful. Ingestion:: Swallowing this material is not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.  Intercocological properties of this subtance have not been fully investigated.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Persional Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves. Lab Cost. Dust respirator. Be sure to use an approved/certified respirator or
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POLYMERIZATION: Will not occur.  ILITORICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhaldon: Ingestion TOXICITY TO ANIMALS: LDGC: Not available: LDGC: Not available: CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON CRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: NOT ANITAL INFORMATION LTA the toxicological properties of this subtance have not been fully investigated.  IZECOLOGICAL INFORMATION ECOTOXICITY: Not available. BODS NOT COD: Not available. BODS	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves. Lab Cost. Dust respirator. Be sure to use an approved/certified respirator or equivalent Safety glasses.
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION  ROUTES OF ENTRY: Inhaleton: Ingestion  TOXICITY TO ANIMALS: LDS0: Not available.  LDS0: Not available.  CHRONIC EFFECTS ON HUMANS: Not available.  OTHER TOXIC EFFECTS ON HUMANS: Not available.  SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available.  SPECIAL REMARKS ON TOXICITY FOR HUMANS: Not available.  SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available.  SPECIAL REMARKS ON TOXICITY FOR TOXIC FIFECTS ON HUMANS: Not available.  SPECIAL REMARKS ON TOXICITY FOR TOXIC FIFECTS ON HUMANS: Not available.  SPECIAL REMARKS ON TOXICITY FOR TOXIC FIFECTS ON HUMANS: Not available.  SPECIAL REMARKS ON TOXICITY FOR the Inhibition or injur. Experts Dust can available toxicity to be harmful. Industris: Swallowing this material is not likely to be harmful. Industris: Swallowing this material is not likely to be harmful. Industris: Swallowing this material is not likely to be harmful. Industris: Swallowing this material is not likely to be harmful. EXTERNATION ECOTOXICITY: Not available. BODS AND COS: Not available. PRODUCTS OF BIODEGRADATION: Proba	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Persional Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves: Lab Coat. Dust respirator: Be sure to use an approved/certified respirator or equivalent
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhaldon. Ingestion TOXICITY TO ANIMALS: LD50: Not available. LD50: Not available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHOR TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON GROUTE OF HOUSE OF ANTION. Inhaldon: This material is not likely to be harmful. Ingestion: Svalowing this material is not likely to be harmful. The toxicological properties of this substance have not been fully investigated. IZECOLOGICAL INFORMATION ECOTOXICTTY: Not available. BODS NOT COD: Not avai	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves. Lab Cost. Dust respirator. Be sure to use an approved/certified respirator or equivalent Safety glasses.
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL: INFORMATION ROUTES OF ENTRY: Inhaleton. Ingestion TOXICITY TO ANIMALS: LDSG: Not available. LDSG: Not available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly hazardous in case of skin contact (irritart), of ingestion, of inhalation. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON TOXICITY TOXIC TOXICITY ON HUMANS: Not available. SPECIAL REMARKS ON TOXICITY TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON THE SUBJECT SON HUMANS: SAUGUES OF DEIDEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves. Lab Cost. Dust respirator. Be sure to use an approved/certified respirator or equivalent Safety glasses.
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POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhabiton. Ingestion TOXICITY TO ANIMALS: LDSG: hot available. LDSG: hot available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON THER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON THER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON THE REVENUES OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE REVENUES OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPE	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves. Lab Cost. Dust respirator. Be sure to use an approved/certified respirator or equivalent Safety glasses. IdeoTHER INFORMANTION REFERENCES: Not available. OTHER SPECIAL CONSIDERATIONS: Not available. Created: Jan. 01, 2019 Last Updated: Jan. 01, 2020
POLYMERIZATION: Will not occur.  ILITORICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhaldon: Ingestion TOXICITY TO ANIMALS: LDGC: Not available: LDGC: Not available: CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM CEFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON ORFORM TOW: Description: Section of this subtatone have not been fully investigated.  IZECOLOGICAL INFORMATION ECOTOXICITY: Not available. BODS AND COD: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available.  ILIODISPOSAL: CONSIDERATIONS Waste must be disposed of in accordance with local environmental control regulations.  LARREMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available.  LIARREMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available.  LIARREMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available.  LIARREMARKS ON THE PRODUCTS OF BI	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.):         Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A):         Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard:         Protective Equipment:         Gloves: Lab Coat: Dust respirator: Be sure to use an approved/certified respirator or equivalent         Safety glasses.         IdeOTHER INFORMANTION         REFERENCES: Not available.         OTHER SPECIAL CONSIDERATIONS: Not available.         Created: Jan. 01, 2019         Last Updated: Jan. 01, 2020         The information above is believed to be accurate and represents the best information currently available
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhabiton. Ingestion TOXICITY TO ANIMALS: LDSG: hot available. LDSG: hot available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON THER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON THER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON THE REVENUES OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE REVENUES OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPE	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.):         Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A):         Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard:         Protective Equipment:         Gloves: Lab Coat: Dust respirator: Be sure to use an         approved/coet/fied respirator or         equivalent         Safery glasses.         IdeOTHER INFORMANTION         REFERENCES: Not available.         OTHER SPECIAL CONSIDERATIONS: Not available.         Created: Jan. 01, 2019         Last Updated: Jan. 01, 2020         The information above is believed to be accurate and represents the best information currently available
POLYMERIZATION: Will not occur.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.):         Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A):         Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard:         Protective Equipment:         Gloves: Lab Coat: Dust respirator: Be sure to use an approved/certified respirator or equivalent         Safety glasses.         IdeOTHER INFORMANTION         REFERENCES: Not available.         OTHER SPECIAL CONSIDERATIONS: Not available.         Created: Jan. 01, 2019         Last Updated: Jan. 01, 2020         The information above is believed to be accurate and represents the best information currently available however, we make no warranty of merchantability or any other warranty, express or implied, with respect to
POLYMERIZATION: Will not occur.   ILITOXICOLOGICAL INFORMATION  ROUTES OF ENTRY: Inhalation: Ingestion TOXICITY TO ANIMALS: LIDSG: Not available. LIDSG: Not available. CHEORIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHICH TOXIC EFFECTS ON HUMANS: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation. SPECIAL REMARKS ON OTOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTOXICITY OF DEFECTS ON HUMANS: Not available. COTOXICITY: Not available. PODUCTS OF BIODEGRADATION: PODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE RODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE RODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON TH	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.):         Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A):         Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard:         Protective Equipment:         Gloves: Lab Coat. Dust reginator: Be sure to use an approved/certified regulator or equivalent         Safety glasses.         Information account of available.         OTHER SPECIAL CONSIDERATIONS: Not available.         Created: Jan. 01, 2019         Last Updated: Jan. 01, 2020         The information account of the bear and regresents the best information currently available followers: we make no warranty of merchantability or any other warranty, express or implied, with respect to information, and we assume no liability resubing from its use. Users should make their own investigation
POLYMERIZATION: Will not occur.  ILITOXICOLOGICAL INFORMATION ROUTES OF ENTRY: Inhalation. Ingestion TOXICITY TO ANIMALS: LDSG: Not available. LDSG: Not available. CHRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Slightly heardous in case of skin contact (intent), of ingestion, of inhalation. SPECIAL REMARKS ON OTOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTOXICITY TOXICITY EFFECTS ON HUMANS: Acute Indust mechanicid eye Inflation. Inhalation. The available casues skin inflation or injury. Even: Dua can casue mechanicid eye Inflation. Inhalation: This material is not likely to be harmful. Ingestion: Swellowing this material is not likely to be harmful. Ingestion: Swellowing this material is not likely to be harmful. Industoriogoid propeties of this subtance have not been fully investigated. III: ECOTOXICITY: Not available. BODS AND COD: Not available. BODS AND COD: Not available. BODS AND COD: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. IIII: SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.):         Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A):         Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard:         Protective Equipment:         Gloves: Lab Coat. Dust reginator: Be sure to use an approved/certified regulator or equivalent         Safety glasses.         Information account of available.         OTHER SPECIAL CONSIDERATIONS: Not available.         Created: Jan. 01, 2019         Last Updated: Jan. 01, 2020         The information account of the bear and regresents the best information currently available followers: we make no warranty of merchantability or any other warranty, express or implied, with respect to information, and we assume no liability resubing from its use. Users should make their own investigation
POLYMERIZATION: Will not occur.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.):         Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A):         Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard:         Protective Equipment:         Gloves. Lab Coat. Dust reginator. Be sure to use an approved/certified regulator or equivalent         Safety glasses.         Ideother SPECIAL CONSIDERATIONS: Not available.         OTHER SPECIAL CONSIDERATIONS: Not available.         Created: Jan. 01, 2019         Last Updated: Jan. 01, 2020         The information above is believed to be accurate and represents the best information currently available howevery, we make no warrantly of merchantability or any other warrantly, express or implied, with respect to information, and we assume no liability resulting from its use. Users should make their own investigation determine the suitability of the information for their particular purposes. In no event shal 22/EDMAGE
POLYMERIZATION: Will not occur.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.): Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard: Protective Equipment: Gloves. Lab Coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent         Sofety glasses.         Identified respirator or equivalent         Sofety glasses.         Identified not, 01, 2019         Last Updated: Jan. 01, 2020         The information above is believed to be accurate and represents the best information currently available. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to information, and we assume no liability resubing from its use. Users should make their own investigatod determine the suitability of the information for their particular purposes. In no event shall 2HEIMAN HYDROCOLLIDIES CO, LTD be liable for any claims, losses, or damages of any third party or for lost profits of the information for their particular purposes. In no event shall 2HEIMAN HYDROCOLLIDIES CO, LTD be liable for any claims, losses, or damages of any third party or for lost profits of the information for their particular purposes. In no event shall 2HEIMANG HYDROCOLLICIES CO, LTD be liable for any claims, losses, or damages of any third party or for lost profits of the information for their particular purposes. In no event shall 2HEIMANG
POLYMERIZATION: Will not occir.  ILITOXICOLOGICAL: INFORMATION ROUTES OF ENTRY: Inhaleton. Ingestion TOXICITY TO ANIMALS: LDSG: Not available. LDSG: Not available. CRRONIC EFFECTS ON HUMANS: Not available. OTHER TOXIC EFFECTS ON HUMANS: Not available. GRONIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXIC EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTROXICE EFFECTS ON HUMANS: Not available. SPECIAL REMARKS ON OTHER DOXIC EFFECTS ON HUMANS: Not available. Inhaleton: Inhaleton: This material and they broke heartful. Ingeston: Swallowing this material and they to be harmful. Ingeston: Swallowing this material shot they to be harmful. Ingeston: Swallowing this material shot they to be harmful. Ingeston: Swallowing this material shot they to be harmful. Ingeston: Swallowing this material shot they to be harmful. Ingeston: Swallowing the material shot they to be harmful. Ingeston: Swallowing the material shot they to be harmful. Ingeston: Swallowing the material shot they to be harmful. Ingeston: Swallowing the material shot they to be harmful. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: Not available. ILIOISTOSAL CONSIDERATIONS Wate must be disposed of in accordance with local environmental control regulations. ILIOISTOSAL CONSIDERATIONS POT LIASIFICATIONS: Not available. Special Provision for Transport:	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable. HMIS(U.S.A.): Health hazard: 1 Fire Hazard: 1 Reactivity: 0 Personal Protection: E NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1 Flammability: 1 Reactivity: 0 Specific hazard: Protective Equipment: Gloves. Lab Cost. Dust respirator. Be sure to use an approved/certified respirator or equivalent Safety glasses. IdeOTHER INFORMANTION REFERENCES: Not available. OTHER SPECIAL CONSIDERATIONS: Not available. Created: Jan. 01, 2019
POLYMERIZATION: Will not occur.	DSCL(EEC): The product is not classified according to the EU regulations. Not applicable.         HMIS(U.S.A.): Health hazard: 1         Fire Hazard: 1         Reactivity: 0         Personal Protection: E         NATIONAL FIRE PROTECTION ASSOCIATION(U.S.A): Heath: 1         Flammability: 1         Reactivity: 0         Specific hazard: Protective Equipment: Gloves. Lab Coat. Dust respirator: Be sure to use an approved/certified respirator or equivalent         Sofety glasses.         Iterent SPECIAL CONSIDERATIONS: Not available. Created: Jan. 01, 2019         Last Updated: Jan. 01, 2020         The information above is believed to be accurate and represents the best information currently available Howevery, we make no warrantly of merchantability or any other warrantly, express or implied, with respect to information, and we assume no liability resulting from its use. Users should make their own investigatio determine the suitability of the information for their particular purposes. In no event shall 2/HEIMAN HYDROCOLLIDIES COL, LTD be liable for any claims, losses, or damages of any third party or for lost profits:

#### Tartrazine

	TARTRAZINE CAS NO 1934-2			ETY DATA SHEET IMSDS	2.3	Supplemental Hazard Statements Other hazards	none	considered to the URL sector left	taat biraan milita aa
202	and a state state of the	50 533	17555 - 17555A	ce.		tisic (PBT), or very percisi	terit and very bloaccum	censidered to be either persist sulative (vPuB) at levels of 0.5°	tent, bioaccumulative and 5 or higher.
	TION 1: Identification of the si	ubstanceiminture an	d of the companylunderta	king	SECT	ION 3: Composition/infom	mation on impredients		
1.1	Product identifiers Product name	Tartazine			3.1	Substances			
	1 Joseph Harrie	<ul> <li>Tartazne</li> </ul>				Synodyms	Acid Yellow 23		
	CAS-No.	: 1834-21-0				Formula Molecular seight	C.,H,N,Na,O,S 534,37 almai	1	
12	Relevant identified uses of	the substance or mia	ture and uses advised ag	ainst		CAS-No.	1934-21-0		
	Identified uses	: Laboratory chemic	als, Industrial & for profess	onal use only.		EC-No.	217-008-0		
1.1	Details of the supplier of the	e safety data sheet				Razardous ingredients a Component	ocording to Regulatio	classification	Concentration
	Company	Central Drug House	(P) Ltd		6		sulphophenyl)-6-(6-	sulphophenylazojpyrazole-3	
		7/29 Vardaan Hou New Delhi -110002 INDIA				CAS-No EC-No	1934-21-0 217-099-0	Resp. Sens. 1; Skin 9 H334; H317	ens. 1; 4# 100 %
	Telephone	+91 11 49404040			0.02	For the full lead of the H-St	atements mentioned in	this Section, see Section 16.	
	Email	care @cdhfinecher	ical.com		SEC	10N 4. First aid measures	1		
1.4	Emergency telephone numb	ber			4.1	Description of first aid m	Head all res		
	Emergency Phone #	÷ +91 11 49404040 (9	00am - 6 00 pm) (Office ho	urs]		General advice	they update their share!	to the stocks in alterdance.	
						If inhaled	CALE FRAME CALE ICAME	to the pocket of administration.	
SEC	TION 2: Hazards identification	ŝ.					n into Resilt air, Minor to	nating, give artificial respirat	fort. Consult a physician
					1	In case of skin contact	and a star from the	a nitrosiminan	
21	Classification of the substa	ance or mixture			1	Wash off with scap and pill in case of eye contact	enty or water. Consult a	e bullement	
	Classification according to		272(2008		1	Flush syss with salar as a	precaution.		
	Respiratory sensitisation (Cat Skin sensitisation (Category 1				1	If swallowed		same line	
	For the full text of the H-State		is Section see Section 16		47	Never give anything by ma Most important symptom		person. Rinse mouth with wat suite and delayed	er. Consurt a physician
22	Label elements		in the local sector in			The most important known		are described in the labelling	(see section 2.2) and/or
-	Labelling according Regula	tion (EC) No 4373/94	14		43	section 11 Indiantian of any immedi	ate made of street	and special treatment needs	ent .
	Pictogram	A 12/20				No data available	and metalogical attentions	and special nearbest need	517.1
					38171	10N 5: Firefighting measu			
	Signal word	Danger				Entropuishing media	2.0		
	Hazard statement(s)				112330	Soitable entinguishing m	eda .		
	H317	May cause an aller	gie skin reaction			Use water spray, alcohol-r			
	H334	May cause allergy	or asthma symptoms or bre	athing difficulties if inhaled.	52	Special hazards arising for Carbon oxides, Nitrogen or			
	Precautionary statement(s) P261	Avoid breathing du	ct		5.3	Advice for firefighters			
	P280	Wear protective glo				Wear self-contained breath	ring apparatus for firefy	ghting it necessary.	
	P342 + P311	If experiencing res	piratory symptoms: Call a F	OISON CENTER/doctor.	5.4	Further information No data available			
- 10	W S. Arcidental relation man			Page 5 of 6					Page 2 1
Ę	N & Accidental release mea vesorial precautions, protection equipm	tive equipment and nent. Avoid dust form	ation. Avoid breathing val	ooura, mistorgas Ensure	54 8.1		hysical and chemical	properties	Page 2 o
PU a	ersonal precautions, protect	tive equipment and next. Avoid dust form personnel to safe an	ation. Avoid breathing val	ooura, mistorgas Ensure	- C.2.5.				Page 2 1
E D AL W	ersonal precautions, protect se personal protective equipm dequate ventilation. Evacuate or personal protection see sec invironmental precautions	tive equipment and next. Avoid dust form personnel to safe an	ation. Avoid breathing val	ooura, mistorgas Ensure	- C.2.5.	Information on basic p     a) Appearance     b) Odour     c) Odour Threehold	hysical and oternical Form: powder No data availab No data availab		Page 2 1
PO AL MD	ersonul precautions, protect se personal protective equipm dequate ventilation. Evacuate or personal protection see sec invironmental greesautions is not let product enter drains.	tive equipment and next Award dust form personnel to safe an ction 8.	ation. Avoid breathing sa eas. Avoid breathing dust	ooura, mistorgas Ensure	- C.2.5.	<ul> <li>Information on basic p</li> <li>a) Appearance</li> <li>b) Odour</li> <li>c) Odour Threehold</li> <li>d) pH</li> </ul>	hysical and chemical Form: powder No data availab No data availab No data availab	in In	Fage 2 1
ROAL BD AR	ersonal precautions, protect to personal protective excipt departs vertilation. Evacuate to personal protection see ser invironmental precautions to not let product enter drame. Nethods and materials for co- to up and arrange disposal is	Sive equipment and nent. Avoid dust form personnel to safe an otion 8.	ation. Avoid breathing va was. Avoid breathing dust	nours, mietorgas, Emun	- C.2.5.	Information on basic p     a) Appearance     b) Odour     c) Odour Threehold	hysical and chemical Form: powder No data availab No data availab No data availab	in In	Fage 2 1
ROAL WD AP 0	ersonal precautions, proted to personal protective exuptor departe vertificion. Evacuate or personal protection see ser invironmental precautions to not let product enter drains. Nethods and materials for co tick up and arrange disposal or ordames for disposal.	Sive equipment and nent. Avoid dust form personnel to safe an otion 8.	ation. Avoid breathing va was. Avoid breathing dust	nours, mietorgas, Emun	- C.2.5.	Information on basis y     a) Appearance     a) Goour     Coour Threehold     d) pH     e) Meting pointheach     point     f) Instal boiling point	hysical and chemical Form: powder No data availab No data availab No data availab No data availab		- <b>1</b>
RUAL BU BLOB	ersonal precautions, protect to personal protective excipt departs vertilation. Evacuate to personal protection see ser invironmental precautions to not let product enter drame. Nethods and materials for co- to up and arrange disposal is	Sive equipment and nent. Avoid dust form personnel to safe an otion 8.	ation. Avoid breathing va was. Avoid breathing dust	nours, mietorgas, Emun	- C.2.5.	Information on Itable p     a) Appearance     b) Odour     Coour Threehold     d) pH     e) Making point/headr     point     initial boiling same     boiling same	hysical and chemical Form: powder No data availab No data availab No data availab not No data availabb	ter ter ter ter	*up.1
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SECT	ION 11: Toxicological in	formation
11.1	Information on toxicolo	ogical effects
	Acute toxicity LD50 Oral - Mouse - 12,7 sulphophenylazo)pyrazo	750 mg/kg(Trisodium 5-hydroxy-1-(4-sulphophenyl)-4-(4- ie-3-carboxylate)
	Skin corrosion/irritation No data available(Trisod	n ium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate)
	Serious eye damage/ey No data available(Trisod	re irritation ium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate)
	Respiratory or skin sen	sitisation
	Germ cell mutagenicity No data available(Trisod	, ium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate)
	Carcinogenicity	
		ent of this product present at levels greater than or equal to 0.1% is identified as ssible or confirmed human carcinogen by IARC.
	Reproductive toxicity No data available(Trisod	ium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate)
		oxicity - single exposure ium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate)
	Specific target organ to No data available	oxicity - repeated exposure
	Aspiration hazard No data available(Trisod	lium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate
	Additional Information RTECS: UQ6400000	
		edge, the chemical, physical, and toxicological properties have not been (Trisodium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-
SECT	TION 12: Ecological infor	mation
12.1	Toxicity	
	Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia (water flea) - 5,706.55 mg/l - 48 h[Trisodium 5-hydroxy-1-(4- sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate)
12.2	Persistence and degra No data available	dability
12.3	Bioaccumulative poter No data available	itial
12.4		ium 5-hydroxy-1-(4-sulphophenyl)-4-(4-sulphophenylazo)pyrazole-3-carboxylate)
12.5		vB assessment contains no components considered to be either persistent, bioaccumulative and istent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6	20 03 S278	양 전 전 환
	No data available	



## CARMOISINE

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SSUE DATE: 01/07/2001			DATE: 01.06.20	and the second second
STATUS: CONTROLLED		NEXT REVIEW	W ON: THREE	YEARS
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CHEMICAL PRODUCT	I IDENTIFICA T	ION		
C.L. N. Synonymous Name Chemical Name Chemical Formula	: Diodium 4-h naphthalene : C <sub>20</sub> H <sub>12</sub> N <sub>2</sub> Na <sub>2</sub>			rlazo) j
The mical Class	: Monoazo			
COMPOSITION / INFO		INGREDIENTS		
ngredients Name: Carmoisine	% compound 100	EINECS No. 222-657-4	CAS No. 3567-69-9	EC No E-122
None of the ingredient of thi	is material meet th	e definition of hazau		
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5.4 Universal First Explosion Hages	ards: Fire or excentre	nent recommended best produce carbon di oxide ,carbon	7. HANDLING AND STORAGE		
5.5 Hazardow Thermol (dc) com 5.6 Projection of Firstlighters	be formed. aposition Products: N	un identified organic compounds may one, manaraded, Does not support	7.1.3i-milling		and gloves, dust mask while remov e, using clean dry spoor. Avoid it
15	contrastion.		7.2.Storage 7.3.Saitable packaging materials 7.4.Not suitable packaging materia	± Story in a tight	ontainer at amhient temp. & Homi r malad container.
6, ACCIDENTAL RELEASE MI	BASURES		<b>REXPOSURE CONTROLSPERS</b>	SONAL PROTECT	10N
6.1.Personal Pre-configure	stupestel	rotection required, but dust masks are			
6.2.Enviormental Precastions 6.3.Methods of Cleaning up Small Spill	This product can collection would     For dry powder a	n generate dust. Ventilation or dust be helpful, but not necessary. gdby dolor malerial such as sand may	8.1.Respiratory System Protection	: No adverse effect	la l
	industrial grade v	of dasting prior to dean up . nocum sweeper are also recommended ferial into appropriate designated or disposal.	8.3. Hand Protection 8.4. Eye Protection	temperarily stati 1 Rabber gloves u	eskin. ay he ward, Wash hands before and with water and soap.
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ICOULT DATE OF STORAGE	REVISION NO.: 07
ISSUE DATE: 01/07/2001	EFFECTIVE DATE: 01.06.2017
STATUS: CONTROLLED	NEXT REVIEW ON: THREE YEARS
13. DISPOSAL CONSIDERAT	IONS
1. Methods of Disposal	: Can be disposed to an incineration plant in accord with local regulations.
14. TRANSPORT INFRMATIO	
1 UN Number	: N/A
2. Land-Road/Railway	
3. ADR/RID Class 4. ADR/RID Item Number	: N/A : N/A
,Inland Waterways	
6. ADNR Class 7. Sea	: N/A
8. IMDG Class	: N/A
. IMDG Page No.	: N/A
10.Air 11. IATA-DGR Class	: N/A
2. National Transport Regulati	
13. Comments	
15. REGULATORY INFORMA	ATION
I. EC Regulations	: Permitted food colour as per rules & regulations.
2. EC classification	: Classified as E122
3. Label Name 4. Hazard Symbols	: Carmoisine : Not Applicable, It is a permitted food colour & no
	hazardous, it used as per regulations.
Prepared by	Approved by
	44450 - 000 - 00 - 24
Q.A. Chemist	Q.A. Manag
	Page 7 of 8
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STATUS: CONTROLLED	NEXT REVIEW ON: THREE YEARS
	: Not Applicable.
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### Probenz SG Sodium Benzoate (P-BZA)

S	AFETY DATA SHEET	Hazard Statement(s):	May form	auses serious eye imitation. I combustible dust concent		
SECTION 1- Identification of	f the substance/mixture and of the company/undertaking	Precautionary Statem Prevention:				
Product identifier	P Powder Sodium Berzzate, Food Grade, Kosher	rievelout.	P243: Ta P264: W	ep away from heatisparks) we precautionary measures ash hands thoroughly after ear protective gloves/protec	s against static discha handling.	rge.
Product No.: EAN 985138. 326	177-00, P326770G, P3267701, P3267703, P3267702, P3267704		protection	E.		
Additional identification Chemical name	softum bentrate	Response:	minutes, rinsing	851+P338: IF IN EYES: Rin Remove contact lenses, if	present and easy to d	o. Continue
CAS-No.:	532-32-1	Disposal:		113: If eye initiation persists spose of contents/container		
	ubstance or mixture and uses advised against mixxicant (food grade), cosmetic component nown.		disposal	facility in accordance with a characteristics at time of dis	applicable laws and re	gulations, and
Details of the supplier of the saf Manufacturer / Supplier Eastman Chemical Comp		Hazard(s) not otherwise classified (HNOC):	None kno	own		
200 South Wilcox Drive Kingsport, TN 37660-525 +14232282000		SECTION 3: Composition	informatio	n on ingredients		
	EASTMAN.com or email emmisids@eastman.com	Substances / Mixtures				
Emergency telephone numbe For emergency health sa	r. Tety, and environmental information, call 1-423-229-4511 or 1-423-229-2000.	General information:				hate
	tion information, in the United States: call CHEMTREC at 800 424-8300 or call	Chemical name sodum bergoate	>32%	dion Additional Identificati CAO-No : 530-30-1	121	inkotee.
423-229-2000	Ya	All contentiations are percentity w #This substance has workplace exp	<76 eight unless inge soure limitial	CASHO:: 7732-18-6 edient is a gas. Gas concentration	s are in percent by volume.	
SECTION 2: Hazards identif Hazard Classification	ication	SECTION 4: First aid mea	10000100			
Health Hazards Serious Eye DamagelEy	e Initation Category 2A	Description of first aid measu Inhalation:		hesh air. Treat symptomati	cally. Get medical atte	ntion if symptom
OSHA Specified Hazards: Combustible dust	May form combustible dust concentrations in air.	Eye contact:	Immedia	tely flush with plenty of wat contact lenses. Get medical	er for at least 15 minu Lattention.	tes. If easy to do
Warning label items including po Pictogram:	recautionary statement:	Skin contact.		th scap and water. Get me		onis occur.
Pictogram:	0	Ingestion:	Seek me	dical advice.		
</td <td><math>\rangle</math></td> <td>Most important symptoms an effects, both acute and delayed:</td> <td>d Mayimta</td> <td>te and cause redness and</td> <td>pain.</td> <td></td>	$\rangle$	Most important symptoms an effects, both acute and delayed:	d Mayimta	te and cause redness and	pain.	
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BCOPHRIGHT 2015 BY EACTMAN CHEM	rick, courwr 1/10 Trest symptomatically.	COPYRIGHT 2018 BY EACTION OF	EIRCAL CONFA	MY		2
асорнязыт закан екопичи снем Treatment	rick, courwr 1/10 Trest symptomatically.	BOOPYRIGHT 2015 BY EADTHIAN CH	ence.cours ntrois/pers mits Country :	onal protection	ve not been establish	
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Physical state:		old	Ingestion:	None known
Form:	0	Crystalline Powder.	Skin contact	None known.
Color:		Vhite	35 20.07	
Odor: Odor Threshold:		Idantess Not determined.	Eye contact	Causes eye initation.
pH:		alculated 8	100000000000000000000000000000000000000	20)
Melting Point	1	0° 00	Information on toxicological eff	ects
Boiling Point:		decomposes	Oral Product:	No data available.
Flash Point:		not applicable	Specified substance(s):	
Evaporation Rate: Flammability (solid, gas):		Not determined. Iot applicable	sodium benzoale	Oral LD-80: (Raf) > 2.000 mg/kg
Flammability (solid, gas): Flammability Limit - Upper (%		or applicable lo data available	Dermal	
Flammability Limit - Lower (%		ko data available	Product	No data available.
Vapor pressure:		not applicable	Specified substance(x):	
Vapor density (air=1):		lo data available	sodium berzbałe	Dema LD-60: (Rabot) > 2,000 mg/kg
Specific Gravity:		(44 (25 °C)	12222	
Solubility(ies)			Inhalation Product	No data avallable.
Solubility in Water:		50 gl	Specified substance(s):	
Solubility (other): Partition coefficient (n-octano		Complete. to Powr2.27	sodium berzzałe	LCSD (Rat, ); > 2069 ppm
Autoignition Temperature:	7.0	tg ≓tw: -2.27 not applicable		
Decomposition Temperature:		Them all stability not tested. Low stability hazard	Repeated dose toxicity Product	No data available.
		expected at normal operating temperatures.	Specified autofance(x):	in the second
Dynamic viscosity:		sot applicable	sodium berzoale	NOAEL (Rat, Oral Study), 1,000 mg/kg
Kinematic viscosity:		ot applicable		WOAEC (Rat, inhalation study.): 250 mg/l Read-across from a similar mater NOAEL (Rat, Demai Study): 2,500 mg/kg
Explosive properties:		lot classified.	10200028 0000000000	the restored could show the
Oxidizing properties:	. 8	kot classified.	Skin Corresion/Imitation Product	No data avallative.
ECTION 10: Stability and re	eactivity			ine and definition.
			Specified substance(s): sodium berzoale	(Rator), 24 Nr. Skipt
leactivity:	None known:		cours of Lode	11/10/04/10/07/2011
hensical Stability:	Stable			
Possibility of Hazardous	None known		Serious Eye Damage/Eye Irrital Product:	ion No data available
Reactions:	None known.		Specified substance(s):	
			sodium berzoałe	(Rabolt, 24 It): moderate
Conditions to Avoid:	None at ambient	temperatures.		
ncompatible Materials:	Strong exidizing a	agents.	Respiratory or Skin Sensitizati Product	on No data avallable
Azardous Decomposition		20042 24	Specified substance(s);	
Products:	Carbon Lickipe.	Cation Monoxide	sodium berzoate	OECD 429: LLNA (Mouse): non-sensitizing
ECTION 11: Toxicological i		12	Carcinogenicity	
ICOPYRIGHT 2015 BY EACTMAN CHEMI	CAL CONFANT	5/10	OCOPYRIGHT 3015 BY EASTMAN CHEM	IICAL COMPANY
Specified subelance(8): sodium benzoale		510 lot suspected as a human carcinogen.	Ecotoxicity: Acute hazards to the aquatic	
Specified substance(8): sodum berzsate Toxicity to reproduction	Rat: Ingestion N	iot suspected as a human carcinogen.	Ecotoxicity.	
Specified subelance(8): sodium benzoale		iot suspected as a human carcinogen.	Ecotoxicity: Acute hazards to the aquatic Fish	environment. No data available.
Specified sobetance(s); sodum berzszle Toxicity to reproduction Product:	Rat: Ingestion N	iot suspected as a human carcinogen.	Ecotoxicity: Acute hazards to the aquatic Fish Product:	environment
Specified substance(s): sodum benzarie Toxicity to reproduction Product: Specified substance(s):	Rat Ingestion N No data availab	lot suspected as a human carcinogen. le	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(s): sodum berzate	environment. No data available.
Specified sobetance(s); sodum berzszle Toxicity to reproduction Product:	Rat Ingestion N No data availab	iot suspected as a human carcinogen.	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(s): sodum berzzate Aquatic Invertebrates	environment. No data avaliable. LC-50 (Fathead Minnow, 96 h): 484 mgil
Specified substance(s): sodum benzarie Toxicity to reproduction Product: Specified substance(s):	Rat: Ingestion N No data availab (Rat): NOAEL: 1	lot suspected as a human carcinogen. le	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(s): sodum berzzate Aquatic Invertebrates Product:	environment. No data available.
Specified sobetance(s); sodum benzate Toxicity to reproduction Product: Specified substance(s); sodum benzate	Rat: Ingestion N No data availab (Rat): NOAEL: 1	lot suspected as a human carcinogen. le	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified subtance(s): sodum terzzate Aquatic therefebrates Product: Specified subtance(s):	environment No data available. LC-80 (Fathead Minnox, 96 h): 484 mg/l No data available.
Specified substance(s): sodum benzarie Toxicity to reproduction Product: Specified substance(s):	Rat: Ingestion N No data availab (Rat): NOAEL: 1	lot suspected as a human carcinogen. le 500 mg/kg: Ingestion; Remarks: Read-across from a similar	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(s): sodum berzzate Aquatic Invertebrates Product:	environment. No data avaliable. LC-50 (Fathead Minnok, 96 h): 484 mgil
Specified substance(s): sodum bettoate Toxicity to reproduction Product: Specified substance(s): sodum bettoate Developmental toxicity	Rat: Ingestion N No data availab (Rat): NOAEL: 1 material	lot suspected as a human carcinogen. le 500 mg/kg: Ingestion; Remarks: Read-across from a similar	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified subtance(s): sodum terzzate Aquatic therefebrates Product: Specified subtance(s):	ehvironment. No data available. LC-80 (Fathead Minnow, 96 h): 484 mgil No data available. LC-80 (Matter Fiea, 96 h): > 100 mgil
Specified substance(s): sodum bettoate Toxicity to reproduction Product: Specified substance(s): sodum bettoate Developmental toxicity	Rat: Ingestion N No data availab (Rat): NOAEL: 5 material No data availab	lot suspected as a human carcinogen. le 500 mg/kg: Ingestion; Remarks: Read-across from a similar le.	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(s): sodum bermate Aquatic Invertebrates Product: Specified substance(s): sodum bermate Chronic hazards to the aqual Fish	envinonment: No data available. LC-80 (Fathead Minnox, 96 h): 484 mg/l No data available. LC-80 (Water Flea, 56 h): > 100 mg/l bic environment:
Specified substance(s); sodum benzate Texicity to reproduction Product: Specified substance(s); sodum benzate Developmental toxicity Product:	Rat: Ingestion N No data availab (Rat): NOAEL: 5 material No data availab	lot suspected as a human carcinogen. le 500 mg/kg: Ingestion; Remarks: Read-across from a similar	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified subtance(s): sodum terzoate Aquatic Invertebrates Product: Specified subtance(s): sodum terzoate Chronic hazards to the aqual	ehvironment. No data available. LC-80 (Fathead Minnow, 96 h): 484 mgil No data available. LC-80 (Matter Fiea, 96 h): > 100 mgil
Specified sobetance(ii): addum herztszte Toxicity to reproduction Product: Specified sobetance(ii): addum herztszte Developmental toxicity Product: Specified sobetance(ii):	Rat: Ingestion N No data availab (Rat): NOAEL: 5 material No data availab	lot suspected as a human carcinogen. le 500 mg/kg: Ingestion; Remarks: Read-across from a similar le.	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified sublance(s): sodum terzzate Aquatic Invertebrates Product: Specified sublance(s): sodum terzzate Chronic hazards to the aquat Fish Product: Specified sublance(s):	environment. No data available. LC-80 (Fathead Minnow, 96 h); 484 mg/l No data available. LC-80 (Intaler Flea, 96 h); > 100 mg/l fic environment. No data available.
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Specified sobelance(w): sodum benzate Texicity to reproduction Product: Specified substance(w): sodum benzate Developmental toxicity Product: Specified sobelance(w): sodum benzate Germ Cell Mutagenicity	Rat: Ingestion N No data availab (Rat): NOAEL: 5 material No data availab	lot suspected as a human carcinogen. le 500 mg/kg: Ingestion; Remarks: Read-across from a similar le.	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(x): sodum termate Aquatic Invertebrates Product: Specified substance(x): sodum termate Chronic hazards to the aquat Fish Product: Specified substance(x): sodum termate	environment. No data available. LC-80 (Fathead Minnow, 96 h); 484 mg/l No data available. LC-80 (Intaler Flea, 96 h); > 100 mg/l fic environment. No data available.
Specified substance(s); sodum benzate Texicity to reproduction Product: Specified substance(s); sodum benzate Developmental toxicity Product: Specified substance(s); sodum benzate	Rat: Ingestion N No data availab (Rat): NOAEL: 5 material No data availab	lof suspected as a human carcinogen. le. 500 mg/kg: Ingestion, Remarks: Read-across from a similar le. 15 mg/kg: Ingestion	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified subtance(s): sodum berzoate Aquatic Invertebrates Product: Specified subtance(s): sodum berzoate Chronic hazards to the aquat Fish Product: Specified subtance(s): sodum berzoate Aquatic Invertebrates Product:	environment: No data available. LC-80 (Fathead Minnow, 96 h): 484 mg/l No data available. LC-80 (intaler Flea, 56 h): > 100 mg/l Eic environment: No data available. NOEC: (Zebra Fleb, 6 d): 10 mg/l
Specified subsitance(k): sodum bettaate Product: Specified subsitance(k): sodum bettaate Developmental toxicity Product: Specified subsitance(k): sodum bettaate Germ Cell Mutagenicity In vitro	Rat: Ingestion N No data availab (Rat: NOAEL: 1 No data availab Rat: NOAEL: 11	lof suspected as a human carcinogen. le. 500 mg/kg: Ingestion, Remarks: Read-across from a similar le. 15 mg/kg: Ingestion	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(s): sodum berzarae Aquatic Invertebrates Product: Specified substance(s): sodum berzards to the aqual Fish Product: Specified substance(s): sodum berzarae Aquatic Invertebrates Product: Specified substance(s): sodum berzarae	environment: No data available. LC-80 (Fathead Minnow, 96 h): 484 mg/l No data available. LC-80 (Water Flea, 56 h): > 100 mg/l Bic environment: No data available. NOEC: (Zebra Fleb, 6 d): 10 mg/l No data available.
Specified substance(ii): sodum becaute Product: Specified substance(ii): sodum becaute Developmental toxicity Product: Specified substance(ii): sodum becaute Germ Cell Mutagenicity In vitro Product:	Rat: Ingestion N No data availab (Rat; NOAEL: 1 No data availab Rat; NOAEL: 17 No data available Sattonela typtit	lof suspected as a human carcinogen. le. 500 mg/kg: Ingestion, Remarks: Read-across from a similar le. 15 mg/kg: Ingestion	Ecotoxicity: Acute hazards to the aquatic Fish Product: Specified substance(s): codum termsta Aquafic Invertebrates Product: Specified substance(s): sodum termsta Chronic hazards to the aquat Fish Product: Specified substance(s): sodum termsta Aquafic Invertebrates Product: Testicity to Aquatic Plants Product:	environment: No data available. LC-80 (Fathead Minnow, 96 h): 484 mg/l No data available. LC-80 (intaler Flea, 56 h): > 100 mg/l Eic environment: No data available. NOEC: (Zebra Fleb, 6 d): 10 mg/l
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ste treatment methods	
General information:	No data available.
Disposal methods:	Dispose of waste and residues in accordance with local authority requirements. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.
CTION 14: Transport in	nformation
	descriptions may vary based on mode of transport, quantities, package size, on. Consult your company's Hazardous Materials/Dangerous Goods expert for r situation.
DOT Class not regula	ted
IMDG - International Mari Class not regula	time Dangerous Goods Code ted
IATA Class not regula	ted
TION 15: Regulatory	information
ety, health and environme	ntal regulations/legislation specific for the substance or mixture.:
SARA 311-312 Hazard C immediate (acute) h	
immediate (acute) h	III) Section 313 - Toxic Chemical List

	ces Control Act): All components of this product are listed on the TSCA inventory. is product are exempt from listing.
	Substances List) and CEPA (Canadian Environmental Protection Act): All t are listed on the DSL. Any impurities present in this product are exempt from
	In Inventory of Chemical Substances and National Industrial Chemicals nent Scheme): All components of this product are listed on AICS or otherwise
	k of Existing and New Chemical Substances): All components of this product are ave been approved in Japan by new substance notification.
	tances Control Act): All components of this product are listed on the Korean ply with the Korean Toxic Substances Control Act.
Philippines Inventory (Pli otherwise comply with PIC	CCS): All components of this product are listed on the Philippine inventory or CS.
	enical Substances in China: All components of this product are listed on the ical Substances in China (IECSC).
SECTION 16: Other inform	ation
SECTION 16: Other inform	Health - 2, Flammability - 1, Chemical Reactivity - 0
HMIS® Hazard Ratings: HMIS® rating involves data interpret	Health - 2. Flammability - 1, Chemical Reactivity - 0 ations that may vary from company to company. They are intended only for rapid, general specific hazard. To deal adequately with the safe handling of this material, all the information
HMIS® Hazard Ratings: HMIS® rating involves data interpret identification of the magnitude of the	Health - 2. Flammability - 1, Chemical Reactivity - 0 ations that may vary from company to company. They are intended only for rapid, general specific hazard. To deal adequately with the safe handling of this material, all the information
HMIS® Hazard Ratings: HMIS® rating involves data interpret identification of the magnitude of the contained in this MSDS must be con	Health - 2, Flammability - 1, Chemical Reactivity - 0 ations that may vary from company to company. They are intended only for rapid, general specific hazard. To deal adequately with the safe handling of this material, all the information sidered.
HMIS® Hazard Ratings: HMIS® rating involves data interpret identification of the magnitude of the contained in this MSDS must be con Revision Information: Key literature references and	Health - 2, Flammability - 1, Chemical Reactivity - 0 ations that may vary from company to company. They are intended only for rapid, general specific hazard. To deal adequately with the safe handling of this material, all the information sldered. Not relevant.
HMIS® Hazard Ratings: HMIS® rating involves data interpret Identification of the magnitude of the contained in this MSDS must be con Revision Information: Key literature references and sources for data:	Health - 2, Flammability - 1, Chemical Reactivity - 0 ations that may vary from company to company. They are intended only for rapid, general specific hazard. To deal adequately with the safe handling of this material, all the information sldered. Not relevant. No data available.