

**Analytical Laboratory of Oleochemicals and Specialty Fats**

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MEDAN, 08 SEPTEMBER 2017

CERTIFICATE OF ANALYSIS**DESCRIPTION OF GOODS**

: 16 X 20FT FCL : 320 MT = 1,280 DRUMS
 FOR CONTRACT NO. MMGLY/20170731-01:
 NAME OF COMMODITY: MASCEROL GLYCERINE 99.7PCT USP
 QUANTITY: 320.00MT
 PACKING: STANDARD MUSIM MAS 250KG NEW STEEL LINED DRUMS, LOOSE STUFFED

L/C NO. : LC11100B703196 DATE OF ISSUE : 170815
 VESSEL NAME : KOTA RATNA V.024S T/S KOTA NANHAI V.KNHI0018E
 SHIPMENT FROM : BELAWAN, INDONESIA
 SHIPMENT TO : HUANGPU, CHINA
 SHIPMENT DATE : 08 SEPTEMBER 2017
 MANUFACTURE DATE : 2807HME3L : 15 AUGUST 2017
 2817HME3L : 16 AUGUST 2017
 2827HME3L : 17 AUGUST 2017
 EXPIRY DATE : 2807HME3L : 15 FEBRUARY 2019
 2817HME3L : 16 FEBRUARY 2019
 2827HME3L : 17 FEBRUARY 2019
 (STORE UNDER COOL, DRY AND SHADED WAREHOUSE.
 AVOID DIRECT HEAT AND SUNLIGHT)

TEST PARAMETER	UNIT	TEST METHOD	RESULTS			SPECIFICATION
			LOT NO.			
			2807HME3L	2817HME3L	2827HME3L	
GLYCERINE CONTENT	%	AOCS Ea 7-95	99.9	99.9	99.9	99.7 MIN
SPECIFIC GRAVITY	25/25°C	USP 39	1.2617	1.2617	1.2617	1.2612 MIN
COLOUR	APHA	AMT-FGQ-G10	<10	<10	<10	10 MAX
IDENTIFICATION TEST A* ¹		USP 39	PASSED	PASSED	PASSED	PASSES USP 39
IDENTIFICATION TEST B* ¹						
- DIETHYLENE GLYCOL	%	USP 39	<0.01	<0.01	<0.01	0.10 MAX
- ETHYLENE GLYCOL	%	USP 39	<0.01	<0.01	<0.01	0.10 MAX
IDENTIFICATION TEST C* ¹		USP 39	PASSED	PASSED	PASSED	PASSES USP 39
RESIDUE ON IGNITION	%	USP 39	<0.01	<0.01	<0.01	0.01 MAX
WATER	%	USP 39	0.02	0.03	0.07	0.3 MAX
CHLORIDE	ppm	USP 39	<10	<10	<10	10 MAX
SULFATE	ppm	USP 39	<20	<20	<20	20 MAX
HEAVY METALS* ¹	ppm	USP 39	<5	<5	<5	5 MAX
LIMIT OF CHLORINATED COMPOUNDS	ppm	USP 39	<30	<30	<30	30 MAX
FATTY ACID & ESTERS	ml 0.5N NaOH	USP 39	0.24	0.28	0.24	1.0 MAX
RELATED COMPOUNDS (INDIVIDUAL IMPURITY)* ¹	%	USP 39	<0.1	<0.1	<0.1	0.1 MAX
RELATED COMPOUNDS (TOTAL IMPURITIES)* ¹	%	USP 39	<1.0	<1.0	<1.0	1.0 MAX
ASSAY	%	USP 39	99.9	99.9	99.9	99.0 - 101.0

Note : * = not accredited under ISO/IEC 17025
 † = Based on periodic testing results

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LEONG HOW WAN
 QA MANAGER
 REF NO. MMGLY/20170731-01(1)
 PT. MUSIM MAS
 (AS MANUFACTURER)
 (SNM)