

BRENNTAG MID-SOUTH

PURCHASE ORDER #:

802310

Material ID: REFINED GLYCERINE USP 99.7%

PICK UP #:

1025018560

CONTENTS FROM TANK 331 WERE TRANSFERRED TO EMPTY TANK 904 ON 6/09/2018



Factory Address:
P.L.D 428, Jalan Beei Satu
Kawasan Perindustrian Pasir Gudang
81700 Pasir Gudang
Johor, Malaysia

Wilmar Oleo North America LLC
11200 Broadway
Suite 2338
Pearland, Texas 77584

CERTIFICATE OF ANALYSIS

Lot#
20149018211001

Product: GLYCERIN 99.7%, USP
Trade Name: WILFARIN™ USP-997
Vessel/Voyage: "Ginga Leopard" Voyage # 1801
Terminal/Location: Hudson Tank, Port Newark, NJ
Sample Drawn From: Close Shore Tank 331 (after discharge of "Ginga Leopard")
Date: May 15, 2018
Lot Number: 331-18-135
Date of Manufacture: April 5, 2018
LSI WO Number: CM180174-32

<u>TEST</u>	<u>SPECIFICATION</u>	<u>RESULT</u>
Description	To Pass	Passes
Water Miscibility	To Pass	Passes
Color (Color, Pt-Co)	To Pass (10 max)	Passes (2)
Identification (A) - IR	To Pass	Passes
Identification (B) - Limit of EG and DEG		
Diethylene Glycol, wt. %	0.10 max	Less than 0.10
Ethylene Glycol, wt. %	0.10 max	Less than 0.10
Identification (C) - Confirmation of Glycerin by GC	To Pass	Passes
Related Compounds	To Pass	Passes
Total Impurities, wt. %	1.0 max	Less than 1.0
Individual Impurities, wt. %	0.10 max	Less than 0.10
Specific Gravity @25/25°C	1.2612 min	1.2613
Residue on Ignition	5.0 mg/50 gm max	0.8
Residue on Ignition, wt%	0.01 max	0.002
Sulfuric Acid Heat Test, APHA	80 max	15
Water, wt. %	0.3 max	0.08
Chloride, ppm	< 10	Passes
Sulfate, ppm	< 20	Passes
Heavy Metals	< 5 µg/g (ppm)	Passes
Chlorinated Compounds, ppm	< 30	Passes
Assay, Anhydrous Basis, wt. %	99.0 - 101.0	99.8
Fatty Acids and Esters (mL of 0.5 N NaOH)	< 1 mL	Passes
Residual Solvents	Compliant	Compliant
Fatty Acids and Esters, wt. %	Report	0.002
Appearance	Clear and free of suspended matter	Passes
Odor	Characteristic	Passes

"Product tested per customer in reference to USP 40th Edition Monograph for Glycerin."

Christopher LaGrassa
Laboratory Associate

Laboratory Service Inc., Main Office and Lab: 85 Lafayette Street, Carteret, NJ 07008 (732) 541-5151
Port of Houston Lab: 11731 Port Road, Seabrook, TX 77586 (281) 474-1300
Port of Savannah Lab: 1084 West Lathrop, Savannah, GA 31415 (912) 234-4499

IMPORTANT: All information provided is believed to be accurate and complete. The data provided is representative of the product quality on the date of analysis for the lot number indicated. This certificate of analysis may not include all of the constituents of the product. Persons using this information should make their own determination regarding its suitability for their particular application. This certificate of analysis shall not in any way limit or preclude the operation and effect of the applicable terms and conditions of sale.