

LOTE: F820M4QPD1

af 11/10/2022

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 DOW EUROPE GMBH		Ship From: Stade PO/PG STADE Germany			
Certificate of Analysis			Customer Information		
Product Number 00000302367 Product Name Propylene Glycol USP/EP Delivery No. 823230040 / 000010 Order Number 113683525 Shipping Units 18920.000 KG Date Shipped 2022-04-27 (YYYY-MM-DD) Shipment No. 40725510			Customer Name Customer PO number 4500601630 Customer Product Code 000000000001004600 Container ID PB 5102 EB Vehicle# PB 9029 TA Specification Number 000000059518		
Batch Number F820M4QPD1 Expiration Date 2024-04-25 (YYYY-MM-DD) Manufacturing Date 2022-04-26 (YYYY-MM-DD) Quantity 18920.000 KG Net Weight 18920.000 KG Manufacturing Plant Stade PO/PG Manufacturer Address BURTZFLETHERSAND STADE Niedersachsen 21683					
It is hereby certified that the material indicated above has been inspected and tested in accordance with the conditions and requirements of the contract or purchase order and, unless agreed otherwise conforms in all respects to the specification relevant thereto and it meets all requirements of the current United States Pharmacopoeia, current Food Chemical Codex, current European Pharmacopoeia and current Pharmacopoeia of Japan.					
Test	Unit	Lower Limit	Upper Limit	Value	Method
Assay	%	99,80	-	99,95	Current USP
M Acidity	ml	-	0,20	0,02	Current USP
M Chlorides	ppm	-	70	< 70	Current USP
M Residue on Ignition per 50g	mg	-	3,50	1,03	Current USP
M Specific Gravity @ 25/25degC		1,035	1,037	1,036	Current USP
Spec. Grav. @ 20C		1,0376	1,0389	1,0380	ASTM D4052
M Sulfate	ppm	-	60	< 60	Current USP
Water Content	%	-	0,200	0,002	Current USP
M ID Test A matches IR scan	-	-	-	Pass	Current USP

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ID Test B	-	-	-	Pass	Current USP
Limit of Ethylene Glycol	-	-	-	Pass	Current USP
ID Test B	-	-	-	Pass	Current USP
Limit of Diethylene Glycol	-	-	-	Pass	Current USP
ID Test C	-	-	-	Pass	Current USP
Matches GC Scan	-	-	-	Pass	Current USP
M Acidity	ml	-	0,05	0,01	Current EP
M Boiling Point	°C	184	189	184	Current EP
M Clarity	-	-	-	Pass	Current EP
M Color	-	-	-	Pass	Current EP
O Melting Point	°C	121	128	126	Current EP
M Oxidizing Substances	ml	-	0,20	0,04	Current EP
0.05M sodium thiosulfate	-	-	-	Pass	Current EP
M Reducing Substances	-	-	-	Pass	Current EP
M Refractive Index		1,431	1,433	1,433	Current EP
@ 20degC	-	-	-	-	-
M Relative Density		1,035	1,040	1,038	Current EP
@ 20/20degC	-	-	-	-	-
M Sulfated ash	%	-	0,0100	0,0018	Current EP
Water Content	%	-	0,200	0,002	Current EP
Assay	%	99,80	-	99,95	Current FCC
M Acidity	-	-	-	Pass	Current FCC
M Appearance	-	-	-	Pass	Current FCC
clear & colorless	-	-	-	-	-
M Distillation, IBP	°C	185,0	-	186,6	Current FCC
M Distillation, DP	°C	-	189,0	188,0	Current FCC
O Lead (Pb)	ppm	-	1,0	< 1,0	Current FCC
M Identification	-	-	-	Pass	Current FCC
matches IR scan	-	-	-	-	-
M Residue on Ignition	%	-	0,0070	0,0030	Current FCC
M Specific Gravity		1,035	1,037	1,036	Current FCC
@ 25/25degC	-	-	-	-	-
Water Content	%	-	0,200	0,002	Current FCC
M Acidity	-	-	-	Pass	Current JP

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M Arsenic	ppm	-	2,0	< 2,0	Current JP
M Chlorides	%	-	0,007	< 0,007	Current JP
M Distilling Range 184 - 189 degC	% vol	95	-	97	Current JP
M Glycerine (Odor)	-	-	-	Pass	Current JP
M Heavy Metals	ppm	-	5,0	< 5,0	Current JP
O Melting Point	°C	174	178	176	Current JP
M Odor	-	-	-	Pass	Current JP
M Residue on Ignition	%	-	0,0050	0,0022	Current JP
M Specific Gravity @ 20/20degC		1,035	1,040	1,038	Current JP
M Sulfate	%	-	0,002	< 0,002	Current JP
Water Content	%	-	0,500	0,002	Current JP
Acidity as acetic acid	%	-	0,0020	0,0002	DOWN 101370
Appearance clear, free of suspended matter	-	-	-	Pass	Visual
Chlorides	ppm	-	1,0	< 1,0	DOWN 101867
Color, Pt-Co	-	-	10	2	ASTM D5386
Dimer, Trimer & Higher Polymers	%	-	0,100	0,055	DOWN 100687
Ethylene Glycol	%	-	0,0080	< 0,0080	DOWN 100687
Diethylene Glycol	%	-	0,0080	< 0,0080	DOWN 100687
Odor practically odorless	-	-	-	Pass	Olfactory
Iron	ppm	-	0,30	0,02	ASTM E394
Note 1: Values reported for Assay, Ethylene Glycol and Diethylene Glycol under USP and for Assay under FCC are obtained using the validated equivalent Dow GC Method DOWN 100687. M:Quarterly Sample O:Annual Sample					
Plant Quality Coordinator					



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