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**ATLANTA WAREHOUSE**3939 Royal Drive, Ste 224 and 226  
Kennesaw, GA 30144**UTAH WAREHOUSE**647 West Billinis Road, Unit 1  
Salt Lake City, Utah 84119**Certificate of Analysis**CHEMWORLD  
3939 ROYAL DRIVE  
SUITE 226  
KENNESAW, GA 30144**Order Number:** 173544  
**Ship Date:** 05/27/2015  
**Production Date:** 05/20/2015  
**Estimated Quantity:** 80 Drums  
**Vehicle Number:****Product Name: Propylene Glycol USP Grade****Test Details**

Parameter	Results	Unit	Specifications	
			Min	Max
Lot 151382252				
Manufacturing Date	05/08/2015			
Expiration Date	05/08/2017			
Purity, Assay	99.94	Wt %	99.90	
Acidity, as Acetic Acid	0.0006	Wt. %		0.0020
Appearance	PASS		PASS	
Water	0.008	Wt. %		0.200
Color	5	Pt-Co		10
Heavy Metals as Pb	< 1	ppm		5
Residual Solvents	PASS		PASS	
Chlorides	< 0.5	mg/kg		0.5
Iron	0.02	mg./kg		0.50
Odor	PASS		PASS	
Limit on DEG	< 0.001	wt %		0.008
Limit on EG	< 0.001	wt %		0.008
Typical Values Shown Below				
Distillation IBP @ 760 mmHg	186.0	°C	186.0	
Distillation DP @ 760 mmHg	188.5	°C		189.0
Infrared Spectrum	PASS		PASS	
Oxidizing Substances	PASS		PASS	
Reducing Substances	PASS		PASS	
Refractive Index @20 C	1.4328	Deg C	1.4310	1.4330
Residue on Ignition	0.0010	ppm		0.0050
Solubility @25 C	PASS		PASS	
Specific Gravity @20/20 C	1.0387	Deg C	1.0377	1.0389
Specific Gravity @25/25 C	1.0358	Deg C	1.0352	1.0364
Sulfate	< 0.006	Wt. %		0.006

Product meets or exceeds all requirements of the United States Pharmacopeia (USP), European Pharmacopeia (EP) and the Food Chemicals Codex (FCC)

Lot Number and Traceability

Traceability may be maintained through the lot number indicated in this document.

Print Date: **05/27/2015**