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ATLANTA WAREHOUSE3939 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****Order Number 5949****Ship Date 10/26/15****Vehicle Number****Estimated Quantity 80 Drums****Delivery No.****Product Name Propylene Glycol USP Grade****Test Details**

Parameter	Results	Unit	Specifications	
			Min	Max
Lot 152924521				
Manufacturing Date	09302015			
Expiration Date	09292017			
Purity, Assay	99.93	Wt %	99.5	
Acidity, as Acetic Acid	0.001	Wt.%		0.002
Ash	<0.001	Wt.%	0.000	0.005
Water	0.003	Wt.%		0.2
Color	1	Pt-Co		10
Sulfate	<60	ppm		60
Heavy Metals as Pb	<1	ppm		5
Residual Solvents	Passes			
Chlorides	<0.1	mg/kg		1
Iron	0.02	mg./kg		0.5
Infrared Spectrum	Passes		PASS	
Specific Gravity @20	1.0384	Deg C	1.0350	1.0370
Specific Gravity @25	1.0359	Deg C	1.0376	1.0389
Distillation IBP @ 760 mmHg	187	°C	185	
Distillation DP @ 760 mmHg	188	°C		189
Refractive Index @20 C	1.4316	Deg C	1.431	1.433
Oxidizing Substances	Passes		PASS	
Reducing Substances	Passes		PASS	
Arsenic	<1	ppm	0.0	1.0
Limit on DEG	Passes			USP
Limit on EG	Passes			USP
Limit on PG	Passes			USP

Notes: (1) Agreed Specification limits – no results reported

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.