



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 6087
Ship Date 11/17/15
Vehicle Number
Estimated Quantity
Delivery No. 184275

Product Name **Propylene Glycol USP Grade**

Test Details

Parameter	Results	Unit	Specifications	
			Min	Max
Lot 153174954				
Manufacturing Date	11/13/2015			
Expiration Date	11/12/2017			
Purity, Assay	99.93	Wt %	99.5	
Acidity, as Acetic Acid	0.008	Wt.%		0.002
Ash	<0.001	Wt.%	0.000	0.005
Water	0.002	Wt.%		0.2
Color	2	Pt-Co		10
Sulfate	<60	ppm		60
Heavy Metals as Pb	<1	ppm		5
Residual Solvents	Pass			
Chlorides	<0.1	mg/kg		1
Iron	<0.02	mg./kg		0.5
Infrared Spectrum	Pass		PASS	
Specific Gravity @20	1.0385	Deg C	1.0350	1.0370
Specific Gravity @25	1.0359	Deg C	1.0376	1.0389
Distillation IBP @ 760 mmHg	186	°C	185	
Distillation DP @ 760 mmHg	189	°C		189
Refractive Index @20 C	1.4329	Deg C	1.431	1.433
Oxidizing Substances	<0.02		PASS	
Reducing Substances	Pass		PASS	
Arsenic	<1	ppm	0.0	1.0
Limit on DEG	Pass			USP
Limit on EG	Pass			USP
Limit on PG	Pass			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.

Print Date: **11/17/2015**