



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

PRODUCT: PROPYLENE GLYCOL USP-K	CUSTOMER PO #: 15-09048	PO# 1721
EPC #: 10241	FAX #: 281-558-4473	
	ATTN: QC LAB	
	CODE:	
	SHIP DATE: 9/8/2015	
	LOT #: 540902x10	

LOT TESTING:		
TEST DESCRIPTIONS	SPECIFICATIONS	TEST RESULTS
Specific Gravity @ 25°C	1.035 – 1.037	1.0359
Color (Apha)	10 Max	10
Appearance	Clear, Free	Pass
Purity	99.5 % Min.	100.0
Identification, by IR	Compare to Standard	Pass
Water	0.2 % Max	0.04363
VALIDATION TESTING:		
*Specific Gravity @ 25°C	1.035 – 1.037	1.0357
*Assay	99.5 % Min.	99.666
*Identification A, by IR	Pass/Fail	Pass
*Identification B, Limit of Diethylene Glycol	Pass/Fail	Pass
*Identification B, Limit of Ethylene Glycol	Pass/Fail	Pass
*Identification C	Pass/Fail	Pass
*Residue on Ignition (mg)	3.5 Max	0.0079
*Heavy Metals	0.0005 % Max	<=0.0005
*Chloride	0.007 % Max	<=0.007
*Sulfate	0.006 % Max	<=0.006
*Acidity (USP)	Pass/Fail	Pass
*Water	0.2 % Max	0.0176
TYPICAL VALUES:		
**Arsenic (as As)	1 wt ppm Max	1
**CONEG Metals	PASS	Pass
**Distillation, IBP@ 760 mmHg (°C)	186 Min.	186
**Distillation, DP@ 760 mmHg (°C)	189 Max	189
**Oxidiz Subst as ml thiosulfate	0.2 ml Max	0.2
**Refractive Index @ 20°C	1.4310 – 1.4340	1.4312
**Solubility @ 25°C	Pass	Pass

*Results listed represent typical values based off Emco Chemicals periodic testing.
 *Results listed represent typical manufacturer values.
 This product meets: U.S. Pharmacopoeia 38/National Formulary 33; European Pharmacopoeia 2008 (6th Edition); British Pharmacopoeia 2008; U.S. Federal Specification TT-I-735A Amendment 3, Notice 2, 19 April 2001 Grades A and B; ASTM Specification D 770-05.

BY: L. González
CHEMIST
9/8/2015