



**GEORGIA WAREHOUSE**  
3939 Royal Drive, Suite 139,  
Kennesaw, GA, 30144

**MICHIGAN WAREHOUSE**  
25991 Northline Commerce Dr.  
Unit 504 Taylor, MI 48180

**UTAH WAREHOUSE**  
647 West Billinis Road, Unit 1  
Salt Lake City, Utah 84119

### Certificate of Analysis

SHIP TO:	CLP CHEMICALS, L.P.	CUSTOMER PO #:	TK17-08280
EMAIL:	<a href="mailto:TKELLY@CLPCHEM.COM">TKELLY@CLPCHEM.COM</a>	EMCO ORDER #:	SO00473070
ATTN:	QC LAB	EMCO CUST #:	121260
BILL TO:	CLP CHEMICALS, L.P.	CODE:	
PRODUCT:	PROPYLENE GLYCOL USP-K	SHIP DATE:	8/29/2017
EPC #:	10241	LOT #:	250907A24

LOT TESTING:		
TEST DESCRIPTIONS	SPECIFICATIONS	TEST RESULTS
Specific Gravity @ 25°C	1.035 – 1.037	1.03597
Color (Apha)	10 Max	5.05
Appearance	Clear, Free	Pass
Purity	99.5 % Min.	99.911
Identification, by IR	Compare to Standard	Pass
Water	0.2 % Max	0.027321
VALIDATION TESTING:		
*Specific Gravity @ 25°C	1.035 – 1.037	1.03667
*Assay	99.5 % Min.	99.997
*Identification A, by IR	Pass/Fail	Pass
*Identificaion 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	0.00
*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	0.0163
TYPICAL VALUES:		
**Arsenic	1 wt ppm Max	1
**CONEG Metals	Pass/Fail	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/Fail	Pass

This product meets: U.S. Pharmacopoeia 40/National Formulary 35. This material is not intended for use as an Active Pharmaceutical Ingredient (API).