



**ChemWorld.com**  
Specialty Chemical Solutions

885 Woodstock Rd, Ste 430-111, Roswell,  
(800) 658-7716

### Certificate of Analysis

**Customer**  
CHEMWORLD  
CUSTOMER PICKUP

**Order Number** 3603  
**Ship Date** 11/25/2013  
**Vehicle Number**  
**Estimated Quantity**  
**Delivery No.**

**Product Name** Propylene Glycol USP Kosher

### Test Details

Parameter	Results	Unit	Specifications	
			Min	Max
Lot	133194589			
Manufacturing Date	11/18/2013			
Purity, Assay	99.92	Wt %	99.5	
Acidity, as Acetic Acid	0.0008	Wt.%		0.005
Water	0.00	Wt.%		0.2
Color	1	Pt-Co		10
Sulfate	< 60.0	ppm		60
Heavy Metals as Pb	< 1.0	ppm		5
Residual Solvents	PASS			
Chlorides	< 0.10	mg/kg		1
Iron	< 0.02	mg./kg		0.5
Infrared Spectrum	PASS		PASS	
Specific Gravity @25	1.0358	Deg C	1.0350	1.0370
Distillation IBP @ 760 mmHg	187.0	°C	185	
Distillation DP @ 760 mmHg	188	°C		189
Refractive Index @20 C	1.4329	Deg C	1.431	1.433
Oxidizing Substances	PASS		PASS	
Reducing Substances	PASS		PASS	
Lead	(1)	mg/kg		1
Limit on DEG	< 0.001	wt%		0.10
Limit on EG	< 0.001	wt%		0.10

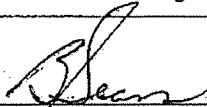
**Notes:** (1) Agreed Specification limits – no results reported

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.

The shelf life of propylene glycol USP when stored and handled under appropriate conditions is at least one year from manufacturing date. Subsequent handling and/or repackaging by intermediates may affect shelf life. In general, the user should determine the suitability of any chemical, no matter what the shelf life or length of time of storage. Each user should establish the suitability of any product for his intended use.

  
Quality Assurance

Print Date: 11-21-13