

# Certificate of Analysis

**Customer**

CHEMWORLD  
3939 ROYAL DRIVE  
SUITE 226  
KENNESAW, GA. 30144

Customer PO Number: 3333  
Ship Date: 7/11/2013  
Vehicle Number:  
Estimated Quantity:  
Delivery No.:

Product Name **Propylene Glycol USP KOSHER**

## Test Details

Parameter	Results	Unit	Specifications	
			Min	Max
Lot	131702377			
Manufacturing Date	20130703			
Purity, Assay	99.91	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
Residue on Ignition	< 70	ppm		70
Distillation IBP @ 760 mmHg	187	°C	185	
Distillation DP @ 760 mmHg	188	°C		189
Refractive Index @20 C	1.4322	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: 7-11-13