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**ATLANTA OFFICE**

885 Woodstock Rd, Ste 430-111,  
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647 West Billinis Road, Unit 1  
Salt Lake City, Utah 84115

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Hotlines: **1 (800) 658-7716**

### Certificate of Analysis

**Order Number:** 4545  
**Ship Date:** 10/30/2014  
**Vehicle Number:**  
**Estimated Quantity:** 160 Drums

**Delivery No.:** 160415

Product Name **Propylene Glycol USP**

### Test Details

Parameter	Results	Unit	Specifications	
			Min	Max
Lot # 142894741				
Manufacturing Date	10/28/14			
Purity, Assay	100	Wt %	99.5	
Appearance	PASS		Pass	
Acidity, as Acetic Acid	0.0005	Wt.%		0.005
Water	0.002	Wt.%		0.200
Color	4	Pt-Co		10
Sulfate	< 60	ppm		60
Heavy Metals as Pb	< 1	ppm		5
Identification, matches IR scan	PASS		PASS	
Residual Solvents	PASS		PASS	
Chlorides	< 0.10	ppm		1
Iron	< 0.02	ppm		0.5
Infrared Spectrum	PASS		PASS	
Specific Gravity @ 25	1.0359	Deg C	1.035	1.037
Residue on Ignition	0.001	ppm		70
Distillation IBP @ 760 mmHg	186	°C	185	
Distillation DP @ 760 mmHg	189	°C		189
Refractive Index @20 C	1.4324	Deg C	1.4310	1.4340
Oxidizing Substances	PASS		PASS	
Reducing Substances	PASS		PASS	
Lead (1)		ppm (1)		1
Limit on DEG	PASS	wt%		0.10
Limit on EG	PASS	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.