



**THE DOW CHEMICAL COMPANY
SALES SPECIFICATION**

Date Printed: 2016-11-22

Effective Date: 2016-10-03

Supersedes Date: 2016-09-12

Name: PuraGuard™ Propylene Glycol USP/EP

Specification Number: 000000133084

Previous Specified Material: 00111814

Shelf Life				
Container Type	Conditions of Handling	Conditions of Storage	Shelf Life	Deterioration Characteristics
Drum			24 Months	
Bulk			24 Months	

Government and Industry Standards

COMMISSION REGULATION (EU) No 231/2012 (food additives)
EUROPEAN PHARMACOPUEIA (EP)
FOOD CHEMICALS CODEX (FCC)
THE JAPANESE PHARMACOPUEIA (JP)
THE UNITED STATES PHARMACOPUEIA (USP)
21CFR Part 117

Final Testing Requirements				
Test and Test Condition	Limit	Unit	Method	Note
Assay	99.80 Min	%	Current USP	
Acidity	0.20 Max	ml	Current USP	
Test Frequency:	quarterly			
Chlorides	70 Max	ppm	Current USP	
Test Frequency:	quarterly			
Heavy Metals	5.0 Max	ppm	Current USP	
Test Frequency:	quarterly			
Residue on Ignition, per 50g	3.50 Max	mg	Current USP	
Test Frequency:	quarterly			

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Test and Test Condition	Limit	Unit	Method	Note
Specific Gravity, @ 25/25degC Test Frequency: quarterly	1.035 — 1.037		Current USP	
Sulfate Test Frequency: quarterly	60 Max	ppm	Current USP	
Water Content	0.200 Max	%	Current USP	
ID Test A, matches IR scan Test Frequency: quarterly	Pass		Current USP	
ID Test B, Limit of Ethylene Glycol	Pass		Current USP	
ID Test B, Limit of Diethylene Glycol	Pass		Current USP	
ID Test C, Matches GC Scan	Pass		Current USP	
Acidity Test Frequency: quarterly	0.05 Max	ml	Current EP	
Boiling Point Test Frequency: quarterly	184 — 189	°C	Current EP	
Clarity Test Frequency: quarterly	Pass		Current EP	
Color Test Frequency: quarterly	Pass		Current EP	
Heavy Metals Test Frequency: quarterly	5.0 Max	ppm	Current EP	
Melting Point Test Frequency: annually	121 — 128	°C	Current EP	
Oxidizing Substances, 0.05M sodium thiosulfate Test Frequency: quarterly	0.20 Max	ml	Current EP	

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Test and Test Condition	Limit	Unit	Method	Note
Reducing Substances Test Frequency:	Pass quarterly		Current EP	
Refractive Index, @ 20degC Test Frequency:	1.431 — 1.433 quarterly		Current EP	
Relative Density, @ 20/20degC Test Frequency:	1.035 — 1.040 quarterly		Current EP	
Sulfated ash Test Frequency:	0.0100 Max quarterly	%	Current EP	
Water Content	0.200 Max	%	Current EP	
Assay	99.80 Min	%	Current FCC	
Acidity Test Frequency:	Pass quarterly		Current FCC	
Appearance, clear & colorless Test Frequency:	Pass quarterly		Current FCC	
Distillation, IBP Test Frequency:	185.0 Min quarterly	°C	Current FCC	
Distillation, DP Test Frequency:	189.0 Max quarterly	°C	Current FCC	
Lead (Pb) Test Frequency:	1.0 Max annually	ppm	Current FCC	
Identification, matches IR scan Test Frequency:	Pass quarterly		Current FCC	
Residue on Ignition Test Frequency:	0.0070 Max quarterly	%	Current FCC	
Specific Gravity, @ 25/25degC Test Frequency:	1.035 — 1.037 quarterly		Current FCC	

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Test and Test Condition	Limit	Unit	Method	Note
Water Content	0.200 Max	%	Current FCC	
Acidity	Pass		Current JP	
Test Frequency:	quarterly			
Arsenic	2.0 Max	ppm	Current JP	
Test Frequency:	quarterly			
Chlorides	0.007 Max	%	Current JP	
Test Frequency:	quarterly			
Distilling Range, 184 - 189 degC	95 Min	% vol	Current JP	
Test Frequency:	quarterly			
Glycerine (Odor)	Pass		Current JP	
Test Frequency:	quarterly			
Heavy Metals	5.0 Max	ppm	Current JP	
Test Frequency:	quarterly			
Melting Point	174 — 178	°C	Current JP	
Test Frequency:	annually			
Odor	Pass		Current JP	
Test Frequency:	quarterly			
Residue on Ignition	0.0050 Max	%	Current JP	
Test Frequency:	quarterly			
Specific Gravity, @ 20/20degC	1.035 — 1.040		Current JP	
Test Frequency:	quarterly			
Sulfate	0.002 Max	%	Current JP	
Test Frequency:	quarterly			
Water Content	0.500 Max	%	Current JP	
Acidity, as acetic acid	0.0020 Max	%	DOWM 101370	

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Aldehydes	10 Max	ppm	DOWM	1
	1		101478	
Test Frequency:	on request			
Appearance, clear, free of suspended matter	Pass		Visual	
Chlorides	1.0 Max	ppm	DOWM	
			101867	
Color, Pt-Co	10 Max		ASTM	
			D5386	
Dimer, Trimer, & Higher Polymers	0.100 Max	%	DOWM	
			100687	
Ethylene Glycol	0.0080 Max	%	DOWM	
			100687	
Diethylene Glycol	0.0080 Max	%	DOWM	
			100687	
Iron	0.30 Max	ppm	ASTM E394	
Odor, practically odorless	Pass		Olfactory	
Spec. Grav. @ 20C	1.0376 — 1.0389		ASTM	
			D4052	
Test Frequency:	quarterly			

Final Testing Requirements Notes:

1 As acetaldehyde

General Notes

1 Values reported for Assay, Ethylene Glycol and Diethylene Glycol under USP and for Assay under FCC are obtained using the validated Dow GC Method DOWM 100687.

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General Notes

- 2 Concerning Regulation (EU) No 231/2012: Distillation range of 185 – 189°C is covered by current FCC; Purity of 99.5% is covered by GC analysis (DOWM 100687)

READ PRECAUTIONARY INFORMATION AND MATERIAL SAFETY SHEETS. THIS PRODUCT IS SHIPPED IN COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING CLASSIFICATION, PACKAGING, SHIPPING AND LABELING.