

THE DOW CHEMICAL COMPANY
SALES SPECIFICATION

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Date Printed: 4 APR 2011

SPECIFIED MATERIAL: 00111814-S

Effective: 02 APR 2011

Supersedes: 26 JAN 2010

NAME: PROPYLENE GLYCOL USP/EP

MATERIAL DESCRIPTION:

Color: colorless

Odor: odorless

Appearance/Physical State: liquid

GOVERNMENT/INDUSTRY STANDARDS:

COMMISSION DIRECTIVE 2008/84/EC (food additives)

EUROPEAN PHARMACOPOEIA (EP)

FOOD CHEMICALS CODEX (FCC)

THE JAPANESE PHARMACOPOEIA (JP)

THE UNITED STATES PHARMACOPEIA (USP)

TEST REQUIREMENTS

TEST ITEM AND CONDITION	LIMIT	UNIT	METHOD	N
Assay	99.80 Min	%	Current USP	
Acidity	0.20 Max	mL	Current USP	
Chlorides	0.007 Max	%	Current USP	
Heavy Metals	5.0 Max	ppm	Current USP	
Residue on Ignition, per 50g	3.50 Max	mg	Current USP	
Residue on Ignition	70 Max	ppm	Current USP	
Specific Gravity	1.035-1.037		Current USP	
Sulfate	0.006 Max	%	Current USP	
Water Content	0.200 Max	%	Current USP	

IDENTIFICATION TEST A

Identification, matches IR scan	Pass		Current USP
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IDENTIFICATION TEST B

Ethylene Glycol	Pass	%	Current USP
Diethylene Glycol	Pass	%	Current USP

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TEST REQUIREMENTS (CONTINUED)

TEST ITEM AND CONDITION	LIMIT	UNIT	METHOD	N
IDENTIFICATION TEST C				
Identification, Matches GC Scan	Pass		Current USP	
Acidity	0.05 Max	mL	Current EP	
Boiling Point	184-189	degC	Current EP	
Clarity	Pass		Current EP	
Color	Pass		Current EP	
Heavy Metals	5.0 Max	ppm	Current EP	
Melting Point	121-128	degC	Current EP	
Oxidizing Substances, 0.05M sodium thiosulfate	0.20 Max	mL	Current EP	
Reducing Substances	Pass		Current EP	
Refractive Index	1.431-1.433		Current EP	
Relative Density	1.035-1.040		Current EP	
Sulfated Ash	0.0100 Max	%	Current EP	
Water Content	0.200 Max	%	Current EP	
Assay	99.80 Min	%	Current FCC	
Acidity	Pass		Current FCC	
Appearance, clear & colorless	Pass		Current FCC	
Distillation, IBP	185.0 Min	degC	Current FCC	
Distillation, DP	189.0 Max	degC	Current FCC	

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TEST REQUIREMENTS (CONTINUED)

TEST ITEM AND CONDITION	LIMIT	UNIT	METHOD	N
Lead (Pb)	1.0 Max	ppm	Current FCC	
Identification, matches IR scan	Pass		Current FCC	
Residue on Ignition	0.0070 Max	%	Current FCC	
Specific Gravity	1.035-1.037		Current FCC	
Water Content	0.200 Max	%	Current FCC	
Acidity	Pass		Current JP	
Arsenic	2.0 Max	ppm	Current JP	
Chlorides	0.007 Max	%	Current JP	
Distillation, IBP	184.0 Min	degC	Current JP	
Distillation, DP	189.0 Max	degC	Current JP	
Glycerine (Odor)	Pass		Current JP	
Heavy Metals	5.0 Max	ppm	Current JP	
Melting Point	174-178	degC	Current JP	
Odor	Pass		Current JP	
Residue on Ignition	0.0050 Max	%	Current JP	
Specific Gravity, @ 20/20degC	1.035-1.040		Current JP	
Sulfate	0.002 Max	%	Current JP	
Water Content	0.500 Max	%	Current JP	
Acidity, as acetic acid	0.0020 Max	%	DOWM 101370	

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TEST REQUIREMENTS (CONTINUED)

TEST ITEM AND CONDITION	LIMIT	UNIT	METHOD	N
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 E202	
Odor, practically odorless	Pass		Olfactory	
Spec. Grav. @ 20C	1.0376-1.0389		ASTM D4052	

SHELF LIFE

CONTAINER	SHELF LIFE
Bulk	24 month
STORAGE: Normal storage temperature, 0-40degC (equiv. to 32-104degF)	
Drum	24 month
STORAGE: Normal storage temperature, 0-40degC (equiv. to 32-104degF)	

NOTES

- 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.

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