

TECHNICAL DATA

Propylene Glycol USP/EP

Pharmacopeial Specifications of Propylene Glycol USP/EP

Property	Unit of Measure	Typical Lyondell Limits*	USP (United States Pharmacopeia)	EP (European Pharmacopeia)	JP (Japanese Pharmacopeia)	FCC (Food Chemicals Codex)
Acidity	ml 0.1N NaOH/10 ml	0.05 max	Not more than 0.2 ml of 0.1N NaOH/10 ml	Not more than 0.05 ml of 0.1M NaOH/10	Not more than 0.3 ml of 0.1M NaOH/10 ml	NR
Acidity (FCC)	ml 0.01N NaOH/50 g	1.67 max	NR	NR	NR	Not more than 1.67 ml of 0.01N NaOH/50g
Assay as PG, dry basis	Wt. %	99.7 min	Not less than 99.5 wt% min	NR	NR	Not less than 99.5wt% min
Chlorides	Wt. %	0.007 max	Not more than 0.007%	NR	Not more than 0.007%	NR
Color	APHA	10 max	NR	NR	NR	NR
Heavy Metals as Pb	Wt. ppm	5 max	Not more than 5ppm	Not more than 5ppm	Not more than 5ppm	Not more than 5mg/kg
Iron	Wt. ppm	0.5 max	NR	NR	NR	NR
Odor		Pass	NR	NR	NR	NR
Appearance		Pass	NR	Clear and colorless	NR	NR
Water	Wt. %	0.2 max	Not more than 0.2%	Not more than 0.2%	Not more than 0.5%	Not more than 0.2%
Arsenic as As	Wt. ppm	2 max	NR	NR	Not more than 2 ppm	NR
Oxidizing Substances	ml	0.2 max	NR	Not more than 0.2ml of 0.05M sodium thiosulfate/10ml	NR	NR
Reducing Substances		No color change	NR	No color change	NR	NR
Organic Volatile Impurities		Pass	Does not exceed specified limits	NR	NR	NR
Residue on Ignition	mg/50 g	3.5 max	Not more than 3.5 mg/50 g	NR	NR	NR
Residue on Ignition	Wt. %		NR	NR	Not more than 0.005%	Not more than 0.007%
Sulphated Ash	mg/50 g			Not more than 5mg/50g	NR	NR
Sulphate	Wt. %	0.002 max	Not more than 0.006%	NR	Not more than 0.002%	NR
Glycerin		No odor of acrolein	NR	NR	No odor of acrolein	NR

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Identification Tests

Property	Unit of Measure	Typical Lyondell Limits*	USP (United States Pharmacopeia)	EP (European Pharmacopeia)	JP (Japanese Pharmacopeia)	FCC (Food Chemical Codex)
IR Spectrum		Pass	Matches standard	NR	NR	Matches standard
Specific Gravity @ 25/25C		1.035-1.037	Between 1.035 and 1.037	NR	NR	1.035-1.037
Specific Gravity @ 20/20C		1.038-1.041	NR	NR	1.038-1.041	NR
Refractive Index @ 25C		1.431-1.432	NR	1.431 to 1.433	NR	NR
Distillation Range	Deg. C	186.0-189.0	NR	NR	184-189	185-189
Boiling Point	Deg. C		NR	184 to 189	NR	NR
Relative Density		1.0350-1.0400	NR	1.0350-1.0400	NR	NR
Melting Point of Nitrobenzoate	Deg. C	123-128	NR	123-128	NR	NR
Melting Point of Triphenylmethyate	Deg. C	174-178	NR	NR	174-178	NR
Odor by Bisulfate		Characteristic	NR	NR	Characteristic	NR

* These are typical Lyondell limits only and are not to be used as product specifications.

- All tests performed in accordance with relevant test methods.
- NR =No Requirement.

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