

TECHNICAL DATA SHEET

Propylene Glycol USP Grade

USP Grade

CAS NUMBER	ALLIANCE CODE	GENERATED
57-55-6	propylene-glycol-usp-grade	2026-08-31
REVISION	REVIEWED	
1.1	2026-06-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Propylene Glycol USP Grade	propylene-glycol-usp-grade
GRADE	CONCENTRATION
USP Grade	—
CAS NUMBER	FORMULA
57-55-6 PubChem	C3H8O2 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
76.09 PubChem	pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (C3H8O2)	not less than 99.5 percent	99.9 %	GC, thermal conductivity detector, 1-m x 4-mm column packed with 5% G16 on support S5, area normalization excluding air and water	USP monograph
Acidity	not more than 0.20 mL of 0.10 N sodium hydroxide is required	0.04	Titration of 10 mL with 0.10 N sodium hydroxide to phenolphthalein endpoint	USP monograph

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chloride	0.007%	0.00003 %	USP <221>	USP monograph
Heavy metals	5 ppm	0.5 ppm	USP <231>	USP monograph
Identification A (Infrared Absorption)	Infrared Absorption 197F on undried specimen	Passes test	USP <197F>	USP monograph
Iron	0.50 weight ppm (maximum)	0.05 ppm	HOC 0290	Supplier specification
Limit of Diethylene Glycol	NMT 0.10%	0.003%	GC, flame ionization detector, 0.53-mm x 30-m fused-silica G43 column, 2,2,2-trichloroethanol internal standard	USP monograph
Limit of Ethylene Glycol	NMT 0.10%	0.002%	GC, flame ionization detector, 0.53-mm x 30-m fused-silica G43 column, 2,2,2-trichloroethanol internal standard	USP monograph
Residual solvents	Pass	Passes test	USP <467>	Supplier specification
Residue on ignition	0.0070 wt% max (3.5 mg from 50 g)	0.0005 wt%	Ignition of 50 g, residue moistened with 0.5 mL sulfuric acid and ignited to constant weight	USP monograph
Sulfate	0.006%	0.0005 %	USP <221>	USP monograph

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Suspended matter	Pass	Passes test	HOC 0171	Supplier specific ation
Water	not more than 0.2%	0.03 %	USP <921> Method I (Karl Fischer)	USP monograph
Elemental impurities	Meets USP <232> / ICH Q3D oral limits	Passes test	USP <232> / <233>, ICP-MS	Interpreted
Microbial enumeration	TAMC $\leq$ 100 CFU/g; TYMC $\leq$ 10 CFU/g	Passes test	USP <61>	Interpreted
arsenic	1 ppm max	0.02 ppm	—	Supplier specific ation
dp	189 Deg.C max	188.2 °C	—	Supplier specific ation
dpg	0.1 %m/m max	0.03 %m/m	—	Supplier specific ation
ibp	185 Deg.C min	186.8 °C	—	Supplier specific ation
pb	1 mg/kg max	0.01 ppm	—	Supplier specific ation
meg	0.001 %m/m max	0.0005 %m/m	—	Supplier specific ation
oxidizing substances	0.2 ml max	0.03	—	Supplier specific ation

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
po	0.001 %m/m max	0.0002 %m/m	—	 Supplier specific ation
tpg	0.03 %m/m max	0.006 %m/m	—	 Supplier specific ation

Specification values are guaranteed limits. Typical values are representative of production lots and are not guaranteed. Lot-specific certificates of analysis ship with every order.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
 USP Grade	—	—	current
—	60%	—	propylene-glycol-60-inhibited
Technical	60%	—	propylene-glycol-60-technical-grade
USP	60%	—	propylene-glycol-60-usp-grade
USP Grade	50%	—	50-propylene-glycol-usp-grade
Technical Grade	40%	—	40-propylene-glycol-technical-grade
USP Grade	40%	—	40-propylene-glycol-usp-grade
—	20%	—	propylene-glycol-20-inhibited
Technical	20%	—	propylene-glycol-20-technical-grade
USP	20%	—	propylene-glycol-20-usp-grade

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
Technical Grade	—	—	propylene-glycol-technical-grade

Typical assay shown is the rolling-window mean from the sibling product's most recent lots. Grade selection drives downstream end-use — verify the sibling grade matches your specification before substitution.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Thick odorless colorless liquid. Mixes with water. (USCG, 1999)	Published reference
Form	Liquid	Published reference
Color	10 APHA (maximum)	Supplier specification
Odor	Pass	Supplier specification
Specific Gravity (20 °C)	between 1.035 and 1.037	USP monograph
Density	1.04 at 68 °F (USCG, 1999) – Denser than water; will sink	Published reference
Boiling Point	189 deg C max	Supplier specification
Melting Point	–76 °F (NTP, 1992)	Published reference
Flash Point	210 °F (NTP, 1992)	Published reference
Vapor Pressure	0.08 mmHg at 68 °F ; 0.13 mmHg at 77 °F (NTP, 1992)	Published reference
Solubility (water)	greater than or equal to 100 mg/mL at 70 °F (NTP, 1992)	Published reference
Refractive Index (nD 20)	1.4310 – 1.4330	Supplier specification

Polar solvent — purity vs. intended end-use (electronics, pharma, general industrial) is the dominant grade consideration. See application guidance for grade selection.

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Fair	60	Acceptable for alcohols; poor for ketones.	Parker O-ring Chemical Compatibility
EPDM Elastomer	Fair	—	Good for alcohols, poor for esters	Cole-Parmer Chemical Compatibility
Viton (FKM) Elastomer	Fair	80	Swells in acetone and esters; avoid for those.	Parker O-ring Chemical Compatibility
FFKM (Kalrez) Fluoropolymer	Excellent	200	Premium ester / ketone sealing	Cole-Parmer Chemical Compatibility
PTFE Fluoropolymer	Excellent	200	Universal solvent compatibility.	Cole-Parmer Chemical Compatibility
Borosilicate Glass Glass Ceramic	Excellent	100	Universally inert.	Cole-Parmer Chemical Compatibility
Glass (borosilicate) Glass Ceramic	Excellent	100	Inert	Cole-Parmer Chemical Compatibility
316L Stainless Steel Metal	Excellent	80	Inert; preferred for high-purity solvent service.	Cole-Parmer Chemical Compatibility
Aluminium Metal	Good	40	Acceptable; avoid prolonged wet contact	Cole-Parmer Chemical Compatibility
Carbon Steel Metal	Fair	50	Trace moisture causes rust; flash-rust prevention required.	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Fair	40	Swells with many polar solvents; verify per solvent.	Cole-Parmer Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
PP Thermoplastic	Good	50	Acceptable but watch swelling with esters	Cole-Parmer Chemical Compatibility
PVC Thermoplastic	Fair	25	Esters soften PVC; avoid for esters	Cole-Parmer Chemical Compatibility

Ratings reflect the service envelope (concentration × temperature) shown. Always confirm against your specific duty cycle and contact-time before equipment selection. The most cautious rating across overlapping references is shown.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

Not regulated **Adjudicated**

HAZARD CLASS

Not regulated **Adjudicated**

PACKING GROUP

Not regulated **Adjudicated**

PROPER SHIPPING NAME

Not regulated **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Not regulated **Adjudicated**

H-CODES (HAZARD STATEMENTS)

Not applicable **ECHA CLP Annex VI**

P-CODES (PRECAUTIONARY STATEMENTS)

Not applicable **ECHA CLP Annex VI**

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— **no canonical**

ACGIH TLV

— **no canonical**

NIOSH REL

— **no canonical**

NIOSH IDLH

— **no canonical**

Transport descriptions reflect 49 CFR 172.101 lookup at time of publication. Sourced data: ECHA CLP Annex VI for harmonised classifications, NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

APPLICATION GUIDANCE

Propylene Glycol USP Grade (USP Grade) is a polar solvent. Grade selection (technical, ACS, electronics, USP) determines acceptable residue and impurity levels for the intended end-use.

- Cleaning and degreasing (technical-grade)
- Coatings, inks, and adhesives formulation
- Reaction solvent for chemical synthesis
- Pharmaceutical manufacturing (USP-grade)
- Electronics-grade cleaning and rinse applications

Flammable. Bond and ground equipment during transfer. Verify grade matches end-use specification before substitution.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, well-ventilated flammable-liquid storage area. Tightly sealed original containers. Segregate from oxidizers and acids. Bond and ground bulk storage.

Class-level guidance — not product-specific; the SDS controls.

INCOMPATIBILITIES

Strong oxidizers, strong acids, isocyanates, anhydrides. Hygroscopic — protect from atmospheric moisture for water-sensitive end uses.

Class-level guidance — not product-specific; the SDS controls.

For full hazard, PPE, and emergency response guidance, refer to the Safety Data Sheet (SDS) for this product. The SDS controls in all cases where guidance differs.

HANDLING PRECAUTIONS

Use chemical-resistant gloves and splash goggles. Bond and ground during transfer to prevent static accumulation. Eliminate ignition sources within vapor envelope.

Class-level guidance — not product-specific; the SDS controls.

SHELF LIFE

Consult Technical Services for product-specific shelf life

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

Not regulated for transport.

Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS
55

REVISION HISTORY

Last reviewed 2026-06-17 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-06-17	Canonical data re-verified: 3 fields updated against independent vendor SDSs, CLP Annex VI, 49 CFR, and OSHA HazCom 2024 (GHS classification, hazard/precautionary codes, signal word, physical properties as applicable). - countryOfOrigin · canonical adjudication / reground (coa.data_provenance) - dotSubsidiaryHazardClass · canonical adjudication / reground (coa.data_provenance) - hsCode · canonical adjudication / reground (coa.data_provenance)	canonical_change
1.0	2026-05-20	Initial URL-first TDS published from canonical chemistry registry.	initial

This Technical Data Sheet is provided for technical reference. The Safety Data Sheet (SDS) controls in all cases where guidance differs. Values reflect Alliance Chemical canonical data at time of generation; subsequent revisions are recorded in the Revision History above.