Technical Data Sheet

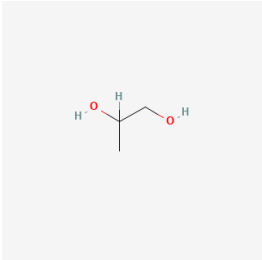
Propylene Glycol USP Grade

USP Grade

Alliance Code	Revised	Revision
propylene-glycol-usp-grade	2026-10-20	1.4

CAS number

57-55-6



Structure · PubChem

Grade

USP Grade

IDENTITY & COMPOSITION

PRODUCT NAME

Propylene Glycol USP Grade

ALLIANCE CODE

propylene-glycol-usp-grade

GRADE

USP Grade

CONCENTRATION

—

CAS NUMBER

57-55-6 PubChem

FORMULA

C3H8O2 PubChem

MOLECULAR WEIGHT

76.09 PubChem

PRODUCT TYPE

Pure substance

SPECIFICATIONS

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

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chloride	0.007%	—	USP <221>	Interpreted
Color, Pt-Co	10 APHA (maximum)	—	Platinum-cobalt (APHA) color scale	Interpreted
Heavy metals	5 ppm	—	Heavy metals (as Pb), sulfide colour comparison against lead standard	Interpreted
Identification A (Infrared Absorption)	Infrared Absorption 〈197F〉 on undried specimen	—	USP <197F>	Interpreted
Iron	0.50 weight ppm (maximum)	—	—	Interpreted
Limit of Diethylene Glycol	NMT 0.10%	—	GC, flame ionization detector, 0.53-mm x 30-m fused-silica G43 column, 2,2,2-trichloroethanol internal standard	Interpreted
Limit of Ethylene Glycol	NMT 0.10%	—	GC, flame ionization detector, 0.53-mm x 30-m fused-silica G43 column, 2,2,2-trichloroethanol internal standard	Interpreted
Odor	Pass	—	Sensory (odor) evaluation	Interpreted
Residual solvents	Pass	—	USP <467>	Interpreted
Residue on ignition	0.0070 wt% max (3.5 mg from 50 g)	—	Ignition of 50 g, residue moistened with 0.5 mL sulfuric acid and ignited to constant weight	Interpreted
Sulfate	0.006%	—	USP <221>	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Suspended matter	Pass	—	—	Interpreted
Water	not more than 0.2%	—	USP <921> Method I (Karl Fischer)	Interpreted
Elemental impurities	Meets USP <232> / ICH Q3D oral limits	—	USP <232> / <233>, ICP-MS	Interpreted
Arsenic	1 ppm max	—	—	Interpreted
Distillation, dry point	189 deg C max	—	—	Interpreted
Distillation, initial boiling point	185 deg C min	—	—	Interpreted
Dipropylene glycol (DPG)	0.1 %m/m max	—	—	Interpreted
Lead (Pb)	1 mg/kg max	—	—	Interpreted
Monoethylene glycol (MEG)	0.001 %m/m max	—	—	Interpreted
Oxidizing substances	0.2 ml max	—	—	Interpreted
Propylene oxide	0.001 %m/m max	—	—	Interpreted
Tripropylene glycol (TPG)	0.03 %m/m max	—	—	Interpreted

Values are reproduced from the current product reference. Source labels do not by themselves establish a supplier guarantee or a test result for your lot. Confirm applicable acceptance limits and request lot-specific documentation.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

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

Typical assay for each grade is the average of its recent lots. Confirm a grade meets your specification before substituting it.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Transparent, mobile, colorless glycol liquid	Adjudicated
Form	Liquid	Published reference
Odor	Odorless to mild	Adjudicated
Specific Gravity	1.038 at 20/20 °C (water = 1)	Adjudicated
Density	1.0363 g/cm^3 at 20 °C	Adjudicated
Boiling Point	184–188 °C (363–370 °F)	Adjudicated
Melting Point	About -60 °C (-76 °F); supercools to a glass rather than crystallizing	Adjudicated
Flash Point	103–107 °C (217–225 °F), closed cup	Adjudicated
Vapor Pressure	About 0.1–0.2 mmHg (20–30 Pa) at 25 °C	Adjudicated
Solubility (water)	Completely miscible with water	Adjudicated
Refractive Index (nD 20)	1.4310 - 1.4330	Interpreted
Viscosity	43–49 mPa·s at 25 °C	Adjudicated

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 HCS 2024

SIGNAL WORD

Not regulated Adjudicated

H-CODES (HAZARD STATEMENTS)

Not applicable ECHA C&L Inventory

P-CODES (PRECAUTIONARY STATEMENTS)

Not applicable ECHA C&L Inventory

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— no canonical

ACGIH TLV

10 mg/m^3 TWA (aerosol) Adjudicated

NIOSH REL

— no canonical

NIOSH IDLH

— no canonical

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

HEALTH & FIRE HAZARD

ACUTE TOXICOLOGY

LD_{50} ORAL

> 20,000 mg/kg (rat)

Adjudicated

LD_{50} DERMAL (RABBIT)

20,800 mg/kg Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

APPLICATIONS

USP grade: humectant, solvent and carrier in pharmaceutical, food, cosmetic and personal-care formulations; low-toxicity heat-transfer fluid.

Adjudicated

Restrictions on Use: USP grade: for use in drug, food and cosmetic products at levels permitted by the applicable regulations (21 CFR 184.1666).

STORAGE & HANDLING

RECOMMENDED STORAGE

Keep tightly closed (hygroscopic) in a cool, dry place away from oxidizers. Stainless steel, carbon steel, polyethylene or polypropylene containers.

Adjudicated

HANDLING PRECAUTIONS

Chemical-resistant gloves and splash goggles. Avoid contact with hot surfaces and hot process equipment. Inhibitor packages deplete in service — monitor rather than top up blindly.

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

INCOMPATIBILITIES

Strong oxidizing agents; strong acids; strong bases.

Adjudicated

SHELF LIFE

Consult Technical Services for product-specific shelf life

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.

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 2026-10-20 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-10-20	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • `density` · canonical change (coa.data_provenance / adjudication) • `specificGravity` · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-10-07	Canonical data updated: 19 fields changed via the provenance/adjudication pipeline. • synonyms · canonical change (coa.data_provenance / adjudication) • odor · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • viscosity · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · canonical change (coa.data_provenance / adjudication) • oel_other · canonical change (coa.data_provenance / adjudication) • incompatible_materials · canonical change (coa.data_provenance / adjudication) • conditions_to_avoid · canonical change (coa.data_provenance / adjudication) • hazardous_decomposition_products · canonical change (coa.data_provenance / adjudication) • storage_precautions · canonical change (coa.data_provenance / adjudication) • rcra_waste_codes · canonical change (coa.data_provenance / adjudication) • cercla_rq · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication) • restrictions_on_use · canonical change (coa.data_provenance / adjudication)	canonical_change
1.2	2026-09-30	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change
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.