Technical Data Sheet

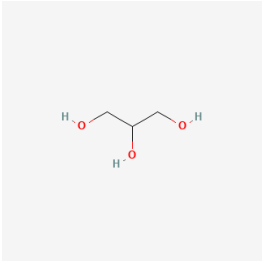
Glycerin USP Grade

USP Grade

Alliance Code	Revised	Revision
glycerin-usp-grade	2026-10-20	1.5

CAS number

56-81-5



Structure · PubChem

Grade

USP Grade

IDENTITY & COMPOSITION

PRODUCT NAME

Glycerin USP Grade

ALLIANCE CODE

glycerin-usp-grade

GRADE

USP Grade

CONCENTRATION

—

CAS NUMBER

56-81-5 PubChem

FORMULA

C3H8O3 PubChem

MOLECULAR WEIGHT

92.09 PubChem

PRODUCT TYPE

Pure substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (C3H8O3, anhydrous basis)	99.0 - 101.0 percent	—	USP periodate oxidation / sodium hydroxide titration (monograph Assay)	Interpreted
Chloride	NMT 0.001%	—	—	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chlorinated Compounds	NMT 0.003% of Cl	—	Morpholine reflux followed by silver-nitrate turbidity comparison	Interpreted
Color (APHA)	10 Max APHA	—	AMT-FGQ-G10	Interpreted
Diethylene Glycol	NMT 0.1%	—	Gas chromatography with flame-ionization detection	Interpreted
Ethylene glycol	0.10 Max %	—	USP 41 (Identification Test B, gas chromatography)	Interpreted
Fatty Acids and Esters	NMT 1 mL of 0.5 N sodium hydroxide	—	Titration of a 50 g sample with 0.5 N sodium hydroxide and 0.5 N hydrochloric acid	Interpreted
Heavy Metals	NMT 5 micro-gm per g	—	Heavy metals (as Pb), sulfide colour comparison against lead standard	Interpreted
Individual Impurities, excluding Diethylene Glycol	NMT 0.1%	—	Gas chromatography with flame-ionization detection	Interpreted
Related compounds (any individual impurity other than diethylene glycol)	not more than 0.1%	—	USP gas chromatography, area normalization	Interpreted
Related compounds (total impurities, including diethylene glycol)	not more than 1.0%	—	USP gas chromatography, area normalization	Interpreted
Residue on Ignition	NMT 0.01%	—	Ignition of a 50 g sample followed by sulfuric-acid treatment and ignition to constant weight	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Specific gravity, 25/25 °C	1.2612 Min	—	USP <841>	Interpreted
Sulfate	0.002 % max	—	USP <221>	Interpreted
Total Impurities, including Diethylene Glycol	NMT 1.0%	—	Gas chromatography with flame-ionization detection	Interpreted
Water	NMT 5.0%	—	—	Interpreted
Related compounds	0.1 % 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
Food	75% w/w	—	glycerin-75-food-grade
Food	50% w/w	—	glycerin-50-food-grade
Food	25% w/w	—	glycerin-25-food-grade
Technical Grade	—	—	glycerin-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	Clear, colorless, thick viscous liquid	Adjudicated
Form	Liquid	Published reference
Odor	Odorless	Adjudicated
pH	Neutral (5.5–8 in aqueous solution)	Adjudicated
Specific Gravity	1.263 at 20/20 °C (water = 1)	Adjudicated
Density	1.2606 g/cm^3 at 20 °C	Adjudicated
Boiling Point	290 °C (554 °F), with decomposition	Adjudicated
Melting Point	18–20 °C (64–68 °F); readily supercools and stays liquid	Adjudicated
Flash Point	160–199 °C (320–390 °F)	Adjudicated
Vapor Pressure	Below 0.001 hPa at 20 °C (negligible)	Adjudicated
Vapor Density	3.2 (air = 1)	Adjudicated
Solubility (water)	Completely miscible with water; hygroscopic	Adjudicated
Refractive Index (nD 20)	1.470-1.475	Interpreted
Viscosity	About 1,400 mPa·s at 20 °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)

15 mg/m^3 TWA total / 5 mg/m^3 TWA respirable

OSHA 29 CFR 1910.1000

ACGIH TLV

10 mg/m^3 TWA (mist) Adjudicated

NIOSH REL

5 mg/m^3 TWA (mist) NIOSH Pocket Guide

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

12,600 mg/kg (rat) Adjudicated

LD_{50} DERMAL (RABBIT)

> 10,000 mg/kg Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

APPLICATIONS

Pharmaceutical-grade glycerin used in food, personal care, cosmetic, pharmaceutical and other specialty applications

c1-preview.prosites.com

Applications are drawn from published manufacturer and supplier documentation; each is sourced. Suitability for a specific use is the buyer's to confirm.

STORAGE & HANDLING

RECOMMENDED STORAGE

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

Adjudicated

HANDLING PRECAUTIONS

Use standard chemical PPE — splash goggles, gloves, lab coat. Refer to SDS for hazard-specific PPE requirements.

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

INCOMPATIBILITIES

Strong oxidizing agents (violent reaction with potassium permanganate, chromium trioxide and similar); 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.
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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
1.5	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
1.4	2026-10-08	Canonical data updated: 23 fields changed via the provenance/adjudication pipeline. • synonyms · canonical change (coa.data_provenance / adjudication) • odor · canonical change (coa.data_provenance / adjudication) • pH · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • vaporDensity · 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) • autoIgnitionTemperature · canonical change (coa.data_provenance / adjudication) • explosiveLimits · canonical change (coa.data_provenance / adjudication) • partitionCoefficient · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · 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
1.3	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
1.2	2026-08-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • signalWord · canonical change (coa.data_provenance / adjudication)	canonical_change

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.