

TECHNICAL DATA SHEET

Glycerin USP Grade

USP Grade

CAS NUMBER	ALLIANCE CODE	GENERATED
56-81-5	glycerin-usp-grade	2026-08-31
REVISION	REVIEWED	
1.2	2026-06-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Glycerin USP Grade	glycerin-usp-grade
GRADE	CONCENTRATION
USP Grade	—
CAS NUMBER	FORMULA
56-81-5 PubChem	C3H8O3 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
92.09 PubChem	pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (C3H8O3, anhydrous basis)	99.0 – 101.0 percent	100.0 percent	USP periodate oxidation / sodium hydroxide titration (monograph Assay)	USP monograph
Chloride	NMT 0.001%	0.0001 %	—	USP monograph

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chlorinated Compounds	NMT 0.003% of Cl	0.0002 %	Morpholine reflux followed by silver–nitrate turbidity comparison	USP monograph
Diethylene Glycol	NMT 0.1%	0.005 %	Gas chromatography with flame–ionization detection	USP monograph
Ethylene glycol	0.10 Max %	0.004 %	USP 41 (Identification Test B, gas chromatography)	Supplier specification
Fatty Acids and Esters	NMT 1 mL of 0.5 N sodium hydroxide	0.2	Titration of a 50 g sample with 0.5 N sodium hydroxide and 0.5 N hydrochloric acid	USP monograph
Heavy Metals	NMT 5 micro–gm per g	1	—	USP monograph
Individual Impurities, excluding Diethylene Glycol	NMT 0.1%	0.02 %	Gas chromatography with flame–ionization detection	USP monograph
Related compounds (any individual impurity other than diethylene glycol)	not more than 0.1%	0.02 %	USP gas chromatography, area normalization	USP monograph
Related compounds (total impurities, including diethylene glycol)	not more than 1.0%	0.05 %	USP gas chromatography, area normalization	USP monograph

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Residue on Ignition	NMT 0.01%	0.002 %	Ignition of a 50 g sample followed by sulfuric-acid treatment and ignition to constant weight	USP monograph
Sulfate	0.002 % max	0.0002 %	USP <221>	USP monograph
Total Impurities, including Diethylene Glycol	NMT 1.0%	0.05 %	Gas chromatography with flame-ionization detection	USP monograph
Water	NMT 5.0%	0.20 %	—	USP monograph

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
THIS GRADE USP Grade	—	—	current
Food	75%	—	glycerin-75-food-grade
Food	50%	—	glycerin-50-food-grade
Food	25%	—	glycerin-25-food-grade
Technical Grade	—	—	glycerin-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	Glycerine appears as a colorless to brown colored liquid. Combustible but may require some effort to ignite.	Published reference
Form	Liquid	Published reference
Color	Not darker than a standard made from 0.40 mL of ferric chloride CS diluted to 50 mL	USP monograph
Odor	MILD ODOR	Published reference
pH	5.5–8.0	Supplier specification
Specific Gravity (20 °C)	1.2612 Min	Supplier specification
Density	1.261 at 68 °F (USCG, 1999) – Denser than water; will sink	Published reference
Boiling Point	554 °F at 760 mmHg (decomposes) (NTP, 1992)	Published reference
Melting Point	64 °F (NTP, 1992)	Published reference
Flash Point	320 °F (NTP, 1992)	Published reference
Vapor Pressure	0.0025 mmHg at 122 °F ; 40 mmHg at 388 °F (NTP, 1992)	Published reference
Solubility (water)	greater than or equal to 100 mg/mL at 64 °F (NTP, 1992)	Published reference
Refractive Index (nD 20)	1.470–1.475	Supplier specification

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

Not regulated **Adjudicated**

PACKING GROUP

Not regulated **Adjudicated**

HAZARD CLASS

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)

15 mg/m³ TWA total / 5 mg/m³ TWA respirable

OSHA 29 CFR 1910.1000

ACGIH TLV

— **no canonical**

NIOSH REL

5 mg/m³ TWA (mist) **NIOSH Pocket Guide**

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.

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

Cool, dry, well-ventilated area in original sealed containers. Refer to product SDS for material-specific guidance.

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

INCOMPATIBILITIES

Consult the SDS for material-specific incompatibilities.

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 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.

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
1.2	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.