



ECO ORGANICS

An ISO 9001 : 2008 Certified Company

- Flavours
- Fragrances
- Ingredients

SAFETY DATA SHEET

(R)-(+)-GLYCIDOL

(As per GHS / SDS 16-Section Format)

SDS Version: 1.0 | Date of Issue: 15 August, 2026

DANGER: This material is classified as a Category 1B Carcinogen and Category 1B Reproductive Toxicant, and is Acutely Toxic (Fatal if Inhaled). See Section 2 and Section 11.

SECTION 1: IDENTIFICATION

Product Name: (R)-(+)-Glycidol

Synonyms: (R)-Glycidol; (R)-Oxiranylmethanol; (R)-2,3-Epoxy-1-propanol

CAS No.: 57044-25-4 | **MDL No.:** MFCD00074873 | **HSN Code:** 29103000

Molecular Formula: C₃H₆O₂

Recommended Use: Chiral building block / synthon for asymmetric synthesis of pharmaceutical and fine chemical intermediates. This document does not certify any pharmaceutical/API grade — see Section 15.

Supplier: Eco Organics, B-5/C-5 to C-7, D-20, Ajeetpur Indl. Estate, Rampur – 244901, U.P., India

Contact / Emergency Telephone: +91 94122 51810, +91 97209 99980 | Email: sales@ecorganics.org

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification: Acute Tox. 2 (Inhalation); Acute Tox. 4 (Dermal); Acute Tox. 4 (Oral); Carcinogenicity – Category 1B; Eye Irrit. 2; Muta. 2; Reproductive Toxicity – Category 1B; Skin Irrit. 2; STOT SE 3

Signal Word: DANGER

Hazard Statements:

H330 – Fatal if inhaled. H312 – Harmful in contact with skin. H302 – Harmful if swallowed. H350 – May cause cancer. H319 – Causes serious eye irritation. H341 – Suspected of causing genetic defects. H360 – May damage fertility or the unborn child. H315 – Causes skin irritation. H335 – May cause respiratory irritation.

Precautionary Statements:

P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash exposed skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection. P284 Wear respiratory protection. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313 IF exposed or concerned: Get medical advice/attention. P310 Immediately call a POISON CENTER/doctor. P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P501 Dispose of contents/container in accordance with local, state and central regulations.

Other Hazards: Sensitive to moisture and light; may polymerize (with fire/explosion hazard) if heated above room temperature or on prolonged storage. Decomposes on contact with strong acids, strong bases, metal salts, or metals — generates fire and explosion hazard. Attacks plastics and rubber. This classification is based on data for glycidol generally (CAS 556-52-5); specific data for the (R)-enantiomer alone is limited, but is assumed to share the same hazard profile.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture: Substance (single enantiomer)

Component: (R)-(+)-Glycidol – CAS No. 57044-25-4

Concentration: >98.0% (per Certificate of Analysis); S-Isomer <1%

SECTION 4: FIRST-AID MEASURES

Inhalation: Remove to fresh air immediately. Keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor immediately — this material is fatal if inhaled.



ECO ORGANICS

An ISO 9001 : 2008 Certified Company

- Flavours
- Fragrances
- Ingredients

Skin Contact: Remove contaminated clothing immediately. Wash off with soap and plenty of water. Take victim to hospital. Consult a physician.

Eye Contact: Rinse thoroughly with plenty of water for at least 15 minutes, including under the eyelids. Get medical attention immediately.

Ingestion: Do NOT induce vomiting. Rinse mouth. Call a POISON CENTER or doctor immediately. Show this SDS to the physician.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, CO₂, foam, water spray/fog.

Unsuitable Media: Do not use a direct/solid water jet, as it may spread the fire.

Specific Hazards: Combustible; may polymerize and generate a fire/explosion hazard if heated or contacted with strong acids, bases, or metal salts. Toxic fumes may be released on combustion.

Firefighter Protection: Wear self-contained breathing apparatus (SCBA) and full chemical-protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate non-essential personnel. Ensure adequate ventilation. Wear full PPE including respiratory protection (see Section 8) — do not enter a spill area without appropriate protection given the acute inhalation hazard.

Environmental Precautions: Prevent entry into drains, water courses, or soil.

Containment / Clean-up: Absorb with inert material and collect in closed, labelled containers for disposal by a licensed hazardous waste contractor. Do not allow to enter sewers or waterways.

SECTION 7: HANDLING AND STORAGE

Handling: Handle only in a well-ventilated area or fume hood, using full PPE. Avoid breathing vapour/mist. Avoid all skin and eye contact. Do not eat, drink, or smoke while handling. Set up emergency exits and a risk-elimination area before use.

Storage: STORE REFRIGERATED at 0°C, in a tightly closed, light-protected container, in a well-ventilated, access-controlled (locked) area, away from moisture, heat, ignition sources, and incompatible materials (strong acids, strong bases, metals, metal salts).

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits: OSHA PEL (TWA): 50 ppm (150 mg/m³). NIOSH REL (TWA): 25 ppm (75 mg/m³). IDLH: 150 ppm. ACGIH TLV: 2 ppm (TWA), A3 classification (literature values for glycidol generally – verify current limits applicable in your jurisdiction).

Engineering Controls: Use only with dedicated local exhaust ventilation or in a fume hood. Do not rely on general ventilation alone.

PPE – Eyes/Face: Chemical safety goggles plus face shield.

PPE – Skin/Hands: Chemical-resistant gloves and protective clothing; avoid any skin contact.

PPE – Respiratory: Given the H330 (fatal if inhaled) classification, use a properly fitted respirator with organic vapour cartridge, or supplied-air respirator, whenever there is any potential for airborne exposure. Periodic medical examination of exposed personnel is recommended.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless to slightly yellow, transparent liquid
Molecular Formula	C ₃ H ₆ O ₂
Molecular Weight	74.08 g/mol
Specific Optical Rotation (20°C, Neat)	+13.0° to +18.0° (per COA)
Refractive Index at 20°C	Approx. 1.433 (literature, racemic glycidol)
Melting Point	Approx. -54°C (literature, racemic glycidol)
Boiling Point	Approx. 167°C (decomposes); 61–62°C @ 15 mmHg (literature, racemic glycidol)
Flash Point	Approx. 66°C, Closed Cup (literature, racemic glycidol)



ECO ORGANICS

An ISO 9001 : 2008 Certified Company

- Flavours
- Fragrances
- Ingredients

Vapour Pressure	Approx. 0.9 mmHg @ 25°C (literature, racemic glycidol)
Solubility in Water	Miscible
Water Content (K.F.)	<1% W/V (per COA)
Purity	>98.0% (by GC, per COA); S-Isomer <1%

SECTION 10: STABILITY AND REACTIVITY

Stability: Sensitive to moisture and light. May polymerize if heated above room temperature or on prolonged storage; may darken on storage. Refrigerated storage (0°C) is required.

Conditions to Avoid: Heat, light, moisture, sparks, open flames.

Incompatible Materials: Strong acids, strong bases, metal salts, and metals — contact generates fire and explosion hazard. Attacks plastics and rubber.

Hazardous Decomposition: Carbon monoxide, carbon dioxide, and irritant/toxic fumes on combustion or decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Oral LD50 (rat): approx. 420 mg/kg. Dermal LD50 (rabbit): approx. 1,980 mg/kg. Inhalation LC50: approx. 450 ppm (mouse, 4 hr) / 580 ppm (rat, 8 hr) (literature values for glycidol generally). Classified Acute Tox. 2 (Inhalation) – fatal if inhaled.

Skin / Eye Contact: Causes skin irritation. Causes serious eye irritation.

Mutagenicity: Suspected of causing genetic defects (Muta. 2). Glycidol has tested positive in the Ames (histidine reversion) mutagenicity assay and reacts with DNA to form adducts — considered genotoxic without requiring metabolic activation.

Carcinogenicity: Category 1B – may cause cancer. IARC Group 2A (probably carcinogenic to humans). NTP: clear/some evidence of carcinogenic activity in multiple rodent studies. Listed on the OSHA Hazard Communication carcinogen list.

Reproductive Toxicity: Category 1B – may damage fertility or the unborn child.

Enantiomer-Specific Data: The toxicological data above is drawn from studies on glycidol generally (predominantly racemic material, CAS 556-52-5); dedicated toxicology studies isolating the (R)-enantiomer specifically are limited. In the absence of enantiomer-specific data, this document conservatively applies the same hazard classification to the (R)-form.

Chronic Effects: Given the above classifications, repeated or prolonged exposure by any route must be strictly avoided.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: No specific aquatic hazard classification consistently identified across sources reviewed; given the substance's toxicity profile, release to the environment should be strictly avoided.

Persistence / Degradability: Limited specific data available; the substance is reported to be unstable and may decompose over time.

Bioaccumulation: Low bioaccumulation potential expected given high water miscibility, but specific data is limited.

Mobility: Miscible with water – high mobility in aqueous environments if released.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of only through a licensed hazardous waste contractor, in accordance with applicable local, state and central pollution control regulations, given the carcinogenicity, mutagenicity, reproductive toxicity, and acute toxicity classifications. Do not discharge into drains or water courses under any circumstances. Contaminated packaging must be handled and disposed of as hazardous waste.

SECTION 14: TRANSPORT INFORMATION

Given the Acute Tox. 2 (Inhalation, H330 – Fatal if inhaled), Carc. 1B, and Repr. 1B classifications, this material is very likely to meet the criteria for a regulated Dangerous Good for transport under ADR/IMDG/IATA, and will require refrigerated/temperature-controlled transport given the 0°C storage requirement. A specific UN number, packing group, and refrigerated-transport (cold-chain) arrangement have not been confirmed here — this MUST be arranged with a qualified Dangerous Goods / cold-chain freight forwarder before any shipment; do not assume this material can be shipped by standard means.



ECO ORGANICS

An ISO 9001 : 2008 Certified Company

- Flavours
- Fragrances
- Ingredients

SECTION 15: REGULATORY INFORMATION

This document does not certify that this material meets any pharmaceutical, API, or other regulated-grade specification. Eco Organics does not hold a Drug Manufacturing License and does not represent this material as suitable for pharmaceutical or medicinal use. Any buyer intending to use this material for a pharmaceutical, food-contact, or other regulated application is solely responsible for independently verifying regulatory suitability, required licensing, and compliance with the Drugs and Cosmetics Act, 1940 (India) or equivalent legislation in the destination market, and for obtaining any necessary import/export authorisations given this material's hazard classification.

SECTION 16: OTHER INFORMATION

This Safety Data Sheet has been compiled using the Certificate of Analysis for this batch (received from our raw material supplier) together with published scientific and regulatory literature for glycidol (including IARC, NTP, and multiple independent SDS sources), to the best of our knowledge, and is provided in good faith. Toxicological data specific to the isolated (R)-enantiomer is limited; this document applies the hazard profile established for glycidol generally as a conservative assumption. Given the severity of the hazard classification identified for this material (Category 1B carcinogen and reproductive toxicant, acutely toxic by inhalation), we strongly recommend this document be reviewed by a qualified EHS/regulatory/toxicology professional — and verified against a current manufacturer SDS — before any handling, storage, transport, or regulatory decision is made based on it. This SDS is subject to revision as new information becomes available.

Date: 15 August, 2026

Authorized Signatory

For Eco Organics


Partner

(Company Seal)