

SAFETY DATA SHEET (SDS)

in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II — Regulation (EU) 2020/878

Date: 07.09.2026 | Version: 4 | EN

glycidol

oxiran-2-ylmethanol

CAS 556-52-5

 $C_3H_6O_2$

EC 209-128-3

MOLAR MASS
74.08LOGP
-0.9

HAZARD CLASSIFICATION (GHS / CLP)



Danger

H350

H341

H360F

H331

H312

H302

H335

H315

H319

Hazard class scope limited to the harmonised classification (CLP Annex VI); classes outside the harmonised entry may require supplier self-classification (CLP Art. 4(3)) — verify with the supplier safety data sheet.

1. Identification of the substance/mixture and of the company/undertaking

1.1 Substance name	glycidol
1.1 IUPAC name	oxiran-2-ylmethanol
1.1 CAS number	556-52-5
1.1 EC number	209-128-3
1.1 PubChem CID	11164
1.1 InChIKey	CTKINSOISVBQLD-UHFFFAOYSA-N
1.1 SMILES	C1C(O1)CO
1.1 Molecular formula	$C_3H_6O_2$ ^[7]
1.1 Molar mass	74.08 g/mol ^[7]
1.1 Exact mass	74.0368 Da ^[7]

1.2 Uses

For laboratory and research purposes. Not for use in the production of food, medicines or cosmetics without appropriate authorisation.

1.3 Details of the supplier

REFERENCE COPY — NO
SUPPLIER DETAILS — NOT FOR
DISTRIBUTION

Supplier details are not included in this reference copy. The supplier placing the substance on the market must complete this section and remains responsible for the sheet under REACH. MolGod.org prepares documentation and is not the supplier of this substance.

1.4 Emergency telephone number

Emergency telephone

112 (EU-wide emergency number)

Contact the poison centre designated in the country of placing on the market (CLP Art. 45).

2. Hazards identification



Danger

Hazard statements (H) [3][4][10]

H350	May cause cancer
H341	Suspected of causing genetic defects
H360F	May damage fertility
H331	Toxic if inhaled
H312	Harmful in contact with skin
H302	Harmful if swallowed
H335	May cause respiratory irritation
H315	Causes skin irritation
H319	Causes serious eye irritation

Precautionary statements (P) [3][4][10]

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash 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
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302+P352	IF ON SKIN: Wash with plenty of water
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313	IF exposed or concerned: Get medical advice/attention
P311	Call a POISON CENTER or doctor/physician
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P321	Specific treatment
P330	Rinse mouth

P332+P313	If skin irritation occurs: Get medical advice/attention
P337+P313	If eye irritation persists: Get medical advice/attention
P403+P233	Store in a well-ventilated place: Keep container tightly closed
P405	Store locked up
P501	Dispose of contents/container to an approved waste collection point

NOTE: CMR substance — employment of pregnant and breastfeeding women in work harmful to health is prohibited (Polish Labour Code Art. 176 § 1; Council of Ministers Regulation of 3 April 2017, Journal of Laws 2017 item 796). ^{[14][15]}

Hazard class scope limited to the harmonised classification (CLP Annex VI); classes outside the harmonised entry may require supplier self-classification (CLP Art. 4(3)) — verify with the supplier safety data sheet.

3. Composition/information on ingredients

Substance type	pure substance
CAS Number	556-52-5
EC number	209-128-3
Molecular formula	C ₃ H ₆ O ₂
Concentration	≥99% (typical reagent-grade purity — to be confirmed by the supplier's specification)
Clp index no	603-063-00-8

4. First aid measures



Inhalation

Move the affected person to fresh air. Keep at rest. Call a physician. Semi-sitting position. Give oxygen if available. If not breathing: artificial respiration (qualified personnel only). ^{[1][2][12]}

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). Call a physician immediately. ^{[1][2][12]}

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. ^{[1][2][12]}

Ingestion

Do NOT induce vomiting (unless directed by a physician). Rinse mouth with water. Never give anything by mouth to an unconscious person. Emergency number: 112 (EU-wide). Contact the poison centre designated in your country (CLP Art. 45). ^{[1][2][12]}

Symptoms and effects

nausea, vomiting, diarrhoea; cough, shortness of breath, headache, dizziness; skin redness and irritation; eye irritation and watering. ^{[3][10]}

Notes for physician

Requires verification

**Emergency numbers: Emergency: 112 (EU-wide).
Poison centre: as designated in the country of
placing on the market (CLP Art. 45).**

5. Firefighting measures

Suitable extinguishing media	Adapt extinguishing media to surroundings. CO ₂ , dry powder, foam.
Unsuitable extinguishing media	No specific restrictions.
Specific hazards	Thermal decomposition products: CO, CO ₂ . ^[13]
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit.
Flash Point	72 [wartość z poprzedniej regeneracji, 2026-08-27]°C [PL] ^[9]
Auto-ignition temperature	415 [wartość z poprzedniej regeneracji, 2026-08-27]°C [PL] ^[9]

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing vapours. ^{[1][2][12]}
Environmental precautions	Prevent entry into sewers, groundwater and surface water. ^{[1][2][12]}
Methods for containment and cleaning up	Contain the spill with a barrier. Absorb with inert material (sand, vermiculite, diatomaceous earth). Collect into sealed, labelled containers. Do not release into drains. ^{[1][2][12]}
Related sections	8; 13

7. Handling and storage

Precautions	Work in a fume hood or with adequate ventilation. No eating, drinking or smoking in the work area. ^{[1][2][12]}
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. ^{[1][2][12]}
Humidity	Store in a dry place (<60% RH). ^{[1][2][12]}
Light	Protect from direct sunlight. ^{[1][2][12]}
Incompatible materials	Strong oxidizers. ^[13]

8. Exposure controls/personal protection

8.1 Control parameters

OEL — NDS (Poland)	No NDS (OEL) value in the available working list — verify in the current MRPiPS regulation before use; do not assume the absence of a limit value.
OEL (EU)	The EU OEL value has not been verified against the available dataset — check the IOELV/BOELV directives; do not assume the absence of a value.
DNEL	No data available.
PNEC	No data available.

8.2 Personal protective equipment (PPE) ^{[5][6][16]}



Chemical-resistant protective gloves
EN ISO 374-1:2016+A1:2018
nitrile (min. 0.11 mm)



Closed safety spectacles or goggles
EN ISO 16321-1:2022 / EN 166:2001



Respiratory protection
EN 14387:2004+A1:2008
type A2-P3 filter (organic vapours + particles)



Chemical-resistant protective clothing
EN 13034:2005+A1:2009 (typ 6) / EN 14126:2003 (bio)



Closed safety footwear with toe protection
EN ISO 20345:2022 (S2/S3)

9. Physical and chemical properties

Property (item 9.1)	Value	Source
Physical state	Liquid	
Colour	No data available.	
Odour	No data available.	
pH (1% aqueous solution)	No data available.	
Melting point	-45°C ^[9]	
Boiling point	160.6°C ^[8]	
Flash point	72 [wartość z poprzedniej regeneracji, 2026-08-27]°C [PL] ^[9]	
Flammability	No data available.	
Lower and upper explosion limit	No data available.	
Density (20°C)	1.118 g/cm ³ ^[9]	
Vapour pressure	0.12 kPa (0.9 mmHg, 25°C) [wartość z poprzedniej regeneracji, 2026-08-27] [PL] ^[9]	
Relative vapour density	2.56 ^[21]	
Kinematic viscosity	No data available.	
Refractive index n _D ²⁰	1.4287 [wartość z poprzedniej regeneracji, 2026-08-27] [PL] ^[9]	
Auto-ignition temperature	415 [wartość z poprzedniej regeneracji, 2026-08-27]°C [PL] ^[9]	
Decomposition temperature	Not applicable	
Rozpuszcz. w wodzie	Miscible with water in all proportions. ^[9]	
Particle characteristics	Not applicable (REACH 9.1(r))	
Partition coefficient n-octanol/water (log value)	-0.9 ^[9]	
Molar mass	74.08 g/mol ^[7]	
Molecular formula	C ₃ H ₆ O ₂ ^[7]	
Lipinski rule (RO5)	PASS	

Where a property above reads "No data available", no measured value was found in the public sources consulted for this substance. The property has not been determined by MolGod.org and no value is inferred. "Not applicable" means the property has no meaning for this substance in the form supplied.

10. Stability and reactivity

Reactivity	Stable under normal storage and handling conditions.
Chemical stability	Thermally stable under recommended conditions.
Hazardous reactions	No hazardous reactions known under normal conditions.
Conditions to avoid	High temperatures, direct sunlight, moisture.
Incompatible materials	Strong oxidizers.
Decomposition products	Thermal decomposition products: CO, CO ₂ .

11. Toxicological information

LD50 (oral)	LD50 420 mg/kg (rat, oral) ^[7]
LD50 (dermal)	No data available.
LC50 (inhalation)	LC50 580 ppm (8 h) (rat) ^[7]
Skin irritation	Category 2 — skin irritation.
Eye irritation	Category 2 — eye irritation.
Sensitisation	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) ^{[3][10]}
Mutagenicity	Category 2 (harmonised classification, Annex VI to CLP).
Carcinogenicity	Category 1A/1B (harmonised classification, Annex VI to CLP).
IARC classification (carcinogenicity)	IARC Group 2A — probably carcinogenic to humans. [local snapshot — not verified against the current IARC list] ^[19]
Reproductive toxicity	Category 1A/1B (harmonised classification, Annex VI to CLP).
STOT — single exposure	Category 3 (H335): May cause respiratory irritation. ^{[3][10]}
STOT — repeated exposure	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) ^{[3][10]}
Aspiration hazard	Not classified for this hazard (outside the scope of the harmonised classification in CLP Annex VI; verify supplier self-classification) ^{[3][10]}

12. Ecological information

Aquatic toxicity	EC ₅₀ (algae): 53.3 mg/L (Raphidocelis subcapitata, 96 h) ^[20]
Persistence / biodegradability	No data available.
Bioaccumulative potential	log Kow = -0.9 ^[9] . Low bioaccumulation potential (log Kow < 4.5 — PBT/vPvB screening criterion per ECHA Guidance R.11). ^{[17][18]}
Mobility in soil	No data available.
PBT/vPvB assessment	Insufficient data to assess PBT/vPvB.
Endocrine disrupting properties	No information.

13. Disposal considerations

Disposal method	Hand over for disposal to licensed contractors in accordance with national and local regulations. Do not discharge into sewers.
Waste code (EWC)	16 05 06* — Laboratory and analytical chemicals (np. chemical reagents) zawierające substancje niebezpieczne. EWC code verification required. ^[11]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information



Class 6.1 — Toxic substances

UN number	VERIFICATION REQUIRED — no verified UN assignment.
Transport hazard class	Suggested from GHS classification — VERIFICATION REQUIRED.
Environmental hazard	Not classified as environmentally hazardous for transport (no H400/H410/H411 in CLP Annex VI; no marine pollutant mark required) ^[3]
Special precautions	Handle as dangerous goods according to the assigned class (ADR/IMDG/IATA); apply the precautions appropriate to that class.
CN/HS code	CN/HS code: verification required in the Eurostat Combined Nomenclature.

Notes

NOTE: the GHS classification indicates the substance may be subject to dangerous goods transport regulations (ADR/IMDG/IATA). Do NOT assume absence of restrictions — verify the UN number before shipping.

15. Regulatory information

SVHC status	SVHC status not verified against the available dataset — check the current ECHA Candidate List; do not assume absence. [1]
REACH Annex XIV	Not verified against the ECHA Authorisation List — check REACH Annex XIV. [1]
REACH Annex XVII	Subject to general entries 28–30 of REACH Annex XVII (CMR substance cat. 1A/1B): sale to the general public prohibited — supply to professional users only. [1]
IARC classification (carcinogenicity)	IARC Group 2A — probably carcinogenic to humans.

16. Other information

Legal status of classification: harmonised under CLP Annex VI — Reg. (EC) No 1272/2008 (as at the date of issue). Entries with an entry-into-force date after 07.09.2026 were omitted as future (not yet applicable).

Data aggregated automatically from public reference databases (PubChem, ECHA, NIST and others).

Scientific citations (10)

Toxicology and carcinogenesis study of glycidol (CAS No. 556-52-5) in genetically modified haploinsufficient p16(Ink4a)/p19(Arf) mice (gavage study).. (2007).
 Bakhiya N, Abraham K, Gürtler R et al.. Toxicological assessment of 3-chloropropane-1,2-diol and glycidol fatty acid esters in food.. Molecular nutrition & food research (2011). DOI: 10.1002/mnfr.201000550
 Andres S, Schultrich K, Monien B et al.. [Heat-induced contaminants in foodstuffs : Acrylamide, furan, and fatty acid esters of monochloropropanediols and glycidol].. Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz (2017). DOI: 10.1007/s00103-017-2564-3
 Pagnacco CA, Kravicz MH, Sica FS et al.. In Vitro Biocompatibility and Endothelial Permeability of Branched Polyglycidols Generated by Ring-Opening Polymerization of Glycidol with B(C(6)F(5))(3) under Dry and Wet Conditions.. Biomacromolecules (2024). DOI: 10.1021/acs.biomac.4c00210
 Pagnacco CA, Alvarez-Fernandez A, Maestro A et al.. Varying the Core Topology in All-Glycidol Hyperbranched Polyglycerols: Synthesis and Physical Characterization.. Macromolecular rapid communications (2025). DOI: 10.1002/marc.202400791

Full text of H statements

H350	May cause cancer
H341	Suspected of causing genetic defects
H360F	May damage fertility
H331	Toxic if inhaled
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Full text of P statements

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P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing
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P501	Dispose of contents/container to an approved waste collection point

Abbreviations

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging (Reg. (EC) 1272/2008)
CMR	Carcinogenic, Mutagenic, toxic to Reproduction
DNEL	Derived No-Effect Level
EC	European Community number
EPI	Personal protective equipment
GHS	Globally Harmonized System
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
SDS	Safety Data Sheet
LC50	Lethal Concentration, 50%
LD50	Lethal Dose, 50%
NDS	Maximum admissible concentration (workplace, PL)
NDSCh	Short-term exposure limit (PL)
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Reg. (EC) 1907/2006)
STOT	Specific Target Organ Toxicity
SVHC	Substance of Very High Concern
TPSA	Topological Polar Surface Area
vPvB	very Persistent and very Bioaccumulative

Version history

v4 (07.09.2026)	Based on ECHA harmonised classification (Annex VI to CLP, ATP 23).
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References

[1] EP and Council. Reg.(EC) No 1907/2006 (REACH). Art.31, Annex II. OJ EU L 396/2006. URL: <https://eur-lex.europa.eu/eli/reg/2006/1907/oj> Accessed: 2026-09-07.

- [2] European Commission. Reg.(EU) 2020/878 — amending Annex II REACH. OJ EU L 203/2020. From 01.01.2023. URL: <https://eur-lex.europa.eu/eli/reg/2020/878/oj> Accessed: 2026-09-07.
- [3] EP and Council. Reg.(EC) 1272/2008 (CLP) + ATP 23. OJ EU L 353/2008. (2026-07-07) URL: <https://eur-lex.europa.eu/eli/reg/2008/1272/oj> Accessed: 2026-09-07.
- [4] United Nations. GHS Rev.9. ST/SG/AC.10/30/Rev.9. New York and Geneva: United Nations, 2021. URL: <https://unece.org/transport/dangerous-goods/ghs-rev9-2021> Accessed: 2026-09-07.
- [5] ISO. ISO 7010:2019 — Graphical symbols. Safety signs. URL: <https://www.iso.org/standard/72424.html> Accessed: 2026-09-07.
- [6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: <https://www.iso.org/standard/51021.html> Accessed: 2026-09-07.
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- [8] NIST. Chemistry WebBook, SRD 69. National Institute of Standards and Technology. URL: <https://webbook.nist.gov/cgi/cbook.cgi?ID=556-52-5>
- [9] Rumble, J.R., ed. CRC Handbook of Chemistry and Physics. 105th ed. Boca Raton: CRC Press, 2024. URL: <https://hbcpc.chemnetbase.com>
- [10] ECHA. European Chemicals Agency — harmonised classification inventory (CLP Annex VI). URL: <https://echa.europa.eu>
- [11] European Commission. Decision 2000/532/EC establishing a list of wastes (European Waste Catalogue). OJ EU L 226/3. URL: <https://eur-lex.europa.eu/eli/dec/2000/532/oj>
- [12] European Chemicals Agency (ECHA). Guidance on the Compilation of Safety Data Sheets. Version 4.0. Helsinki: European Chemicals Agency, 2020. URL: https://echa.europa.eu/documents/10162/2324906/sds_en.pdf
- [13] Urban, P.G., ed. Bretherick's Handbook of Reactive Chemical Hazards. 8th ed. Oxford: Academic Press.
- [14] Act of 26 June 1974 — Labour Code (Poland), Art. 176 § 1. Journal of Laws 2023 item 1465. URL: <https://isap.sejm.gov.pl>
- [15] Council of Ministers of the Republic of Poland. Regulation of 3 April 2017 on the list of arduous, hazardous or health-harmful work for pregnant and breastfeeding women. Journal of Laws 2017 item 796. URL: <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20170000796>
- [16] CEN. Personal protective equipment standards (EN ISO 374-1, EN 166, EN 149, EN 14387, EN ISO 20345). Brussels: European Committee for Standardization.
- [17] ECHA. Guidance on Information Requirements and Chemical Safety Assessment, Chapter R.11: PBT/vPvB Assessment. Helsinki: European Chemicals Agency. URL: <https://echa.europa.eu/guidance-documents/guidance-on-information-requirements-and-chemical-safety-assessment>
- [18] European Parliament and Council. Regulation (EC) No 1907/2006 (REACH), Annex XIII — Criteria for the identification of PBT and vPvB substances. OJ EU L 396/2006 (consolidated). URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02006R1907-20140410>
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- [21] MOL-GOD. Value obtained by calculation from the molecular formula/molecular weight (the specific quantity and its formula are indicated at the respective field). Calculated value, not an experimental measurement. URL: <https://www.nist.gov/pml/atomic-weights-and-isotopic-compositions-relative-atomic-masses>
- [22] MRIPS Regulation of 12.06.2018 — NDS/NDN. Journal of Laws 2024 item 1017. URL: <https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20240001017> Accessed: 2026-09-07.

External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=556-52-5>

Wikidata: <https://www.wikidata.org/wiki/Q418265>

ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL1530150

NFPA 704 (supplementary information — NFPA/USA system; not a required element of an EU safety data sheet under REACH Annex II)



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Issue date: 07.09.2026 | Document version: 4