

## SAFETY DATA SHEET

Version 6.7  
Revision Date 09/19/2021  
Print Date 05/28/2022

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Glycidol

Product Number : G5809  
Brand : Aldrich  
CAS-No. : 556-52-5

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 4), H227  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 2), H330  
Acute toxicity, Dermal (Category 4), H312  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Germ cell mutagenicity (Category 2), H341  
Carcinogenicity (Category 1B), H350  
Reproductive toxicity (Category 1B), H360  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Aldrich - G5809

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Pictogram



Signal word

Danger

Hazard statement(s)

H227	Combustible liquid.
H302 + H312	Harmful if swallowed or in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash 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.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
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.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Rapidly absorbed through skin.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : 2,3-Epoxy-1-propanol  
(±)-Glycidol  
(±)-Oxirane-2-methanol  
Glycerolglycide

Formula : C<sub>3</sub>H<sub>6</sub>O<sub>2</sub>  
Molecular weight : 74.08 g/mol  
CAS-No. : 556-52-5

Component	Classification	Concentration
<b>(±)-Glycidol</b>		
	Flam. Liq. 4; Acute Tox. 4; Acute Tox. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Muta. 2; Carc. 1B; Repr. 1B; STOT SE 3; H227, H302, H330, H312, H315, H319, H341, H350, H360, H335	<= 100 %
<b>2,2'-[oxybis(methylene)]bisoxirane</b>		
	Acute Tox. 4; Acute Tox. 2; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; H302, H330, H311, H314, H318	>= 1 - < 5 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

#### **4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### **4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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### **SECTION 5: Firefighting measures**

#### **5.1 Extinguishing media**

##### **Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

##### **Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

#### **5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

#### **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### **5.4 Further information**

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### **SECTION 6: Accidental release measures**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

#### **6.2 Environmental precautions**

Do not let product enter drains.

#### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g.

Chemizorb®). Dispose of properly. Clean up affected area.

#### **6.4 Reference to other sections**

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

#### Storage stability

Recommended storage temperature

2 - 8 °C

Moisture sensitive. Handle and store under inert gas.

#### Storage class

Storage class (TRGS 510): 6.1A: Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
(±)-Glycidol	556-52-5	TWA	2 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Confirmed animal carcinogen with unknown relevance to humans		

		TWA	50 ppm 150 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	25 ppm 75 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	2 ppm 6.1 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
2,2'-[oxybis(methylene)]bisoxirane	2238-07-5	TWA	0.1 ppm 0.5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	0.5 ppm 2.8 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.01 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Not classifiable as a human carcinogen		
		TWA	0.1 ppm 0.5 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		
		PEL	0.1 ppm 0.5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

required

#### Body Protection

protective clothing

#### Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	Form: liquid Color: colorless
b) Odor	odorless
c) Odor Threshold	Not applicable
d) pH	No data available
e) Melting point/freezing point	Melting point: -45 °C (-49 °F) at ca.1,013.25 hPa
f) Initial boiling point and boiling range	61 - 62 °C 142 - 144 °F at 20 hPa - lit.
g) Flash point	72 °C (162 °F) at ca.1,013.25 hPa
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	1.2 hPa at 25 °C (77 °F)
l) Vapor density	2.97
m) Density	1.117 g/mL at 25 °C (77 °F) - lit.
Relative density	No data available
n) Water solubility	completely miscible
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	415 °C (779 °F) at 1,013.25 hPa
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	none

### 9.2 Other safety information

Relative vapor density	2.97
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

## 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

## 10.3 Possibility of hazardous reactions

No data available

## 10.4 Conditions to avoid

Strong heating.

## 10.5 Incompatible materials

Strong acids, Strong bases, Heavy metals, Strong oxidizing agents

## 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Acute toxicity estimate Oral - 454.43 mg/kg

(Calculation method)

LD50 Oral - Rat - male and female - 463.8 mg/kg

Remarks: (ECHA)

Acute toxicity estimate Inhalation - 4 h - 1.2 mg/l

(Calculation method)

LC50 Inhalation - Mouse - male - 4 h - 1.37 mg/l

Remarks: (ECHA)

LC50 Inhalation - Rat - 4 h - 2.22 mg/l

Remarks: (ECHA)

LC50 Inhalation - Rat - 4 h - 1.26 mg/l

Remarks: (RTECS)

LC50 Inhalation - Rat - male - 4 h - 2.20 mg/l

Remarks: (ECHA)

LC50 Inhalation - Mouse - 4 h - 1.46 mg/l

Remarks: (ECHA)

Acute toxicity estimate Dermal - 1,905 mg/kg

(Calculation method)

LD50 Dermal - Rabbit - 1,980 mg/kg

Remarks: (RTECS)

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Skin irritation

Remarks: (RTECS)

(Regulation (EC) No 1272/2008, Annex VI)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation. - 48 h

Remarks: (ECHA)

(Regulation (EC) No 1272/2008, Annex VI)

#### Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse



Result: negative  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Suspected of causing genetic defects.

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: positive

Remarks: (ECHA)

Test Type: dominant lethal test

Species: Rat

Application Route: Inhalation

Result: Positive results were obtained in some in vivo tests.

Remarks: (ECHA)

**Carcinogenicity**

Presumed to have carcinogenic potential for humans

IARC: 2A - Group 2A: Probably carcinogenic to humans ((±)-Glycidol)

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

May damage fertility.

**Specific target organ toxicity - single exposure**

May cause respiratory irritation.

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - LOAEL (Lowest observed adverse effect level) - 25 mg/kg

Remarks: Subchronic toxicity

Central nervous system depression

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

Toxicity to algae                      static test ErC50 - Pseudokirchneriella subcapitata (green algae) -  
144.7 mg/l - 96 h  
Remarks: (ECHA)  
((±)-Glycidol)

### 12.2 Persistence and degradability

Biodegradability                      aerobic - Exposure time 28 d  
Result: 94 % - Readily biodegradable.  
Remarks: (ECHA)

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

### DOT (US)

UN number: 2810    Class: 6.1                      Packing group: III  
Proper shipping name: Toxic, liquids, organic, n.o.s. ((±)-Glycidol)  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

### IMDG

UN number: 2810    Class: 6.1                      Packing group: III                      EMS-No: F-A, S-A  
Proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S. ((±)-Glycidol)

### IATA

UN number: 2810    Class: 6.1                      Packing group: III  
Proper shipping name: Toxic liquid, organic, n.o.s. ((±)-Glycidol)

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## SECTION 15: Regulatory information

### SARA 302 Components

2,2'-[oxybis(methylene)]bisoxirane

CAS-No.  
2238-07-5

Revision Date  
1993-04-24

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

(±)-Glycidol

CAS-No.  
556-52-5

Revision Date  
1993-04-24

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

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## SECTION 16: Other information

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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