

# SAFETY DATA SHEET

Version 6.9  
Revision Date 09/08/2024  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Triethanolamine  
Product Number : 90279  
Brand : Sigma  
CAS-No. : 102-71-6

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

Identified uses : Laboratory chemicals, Synthesis of substances  
Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 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

Not a hazardous substance or mixture.

### 2.2 GHS Label elements, including precautionary statements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Synonyms : 2,2',2''-Nitrilotriethanol  
Tris(2-hydroxyethyl)amine

Formula : C<sub>6</sub>H<sub>15</sub>NO<sub>3</sub>  
Molecular weight : 149.19 g/mol  
CAS-No. : 102-71-6  
EC-No. : 203-049-8

Component	Classification	Concentration
<b>Triethanolamine</b>		<= 100 %

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### SECTION 4: First aid measures

#### 4.1 Description of first-aid measures

##### If inhaled

After inhalation: fresh air.

##### In case of skin contact

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

##### In case of eye contact

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

##### If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

#### 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

Nitrogen oxides (NO<sub>x</sub>)

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**

In the event of fire, wear self-contained breathing apparatus.

### **5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. 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. 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 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**

For precautions see section 2.2.

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

#### **Storage conditions**

Tightly closed.

Hygroscopic.

#### **Storage class**

Storage class (TRGS 510): 10: Combustible liquids

### **7.3 Specific end use(s)**

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

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Triethanolamine	102-71-6	TWA	5 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		PEL	5 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

### 8.2 Exposure controls

#### Appropriate engineering controls

Change contaminated clothing. Wash hands 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

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Latex gloves

Minimum layer thickness: 0.6 mm

Break through time: 480 min

Material tested:Lapren® (KCL 706 / Aldrich Z677558, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 60 min

Material tested:KCL 741 Dermatril® L

##### Respiratory protection

Not required; except in case of aerosol formation.

##### 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: viscous Color: colorless
b) Odor	amine-like
c) Odor Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point: 20.5 °C (68.9 °F)
f) Initial boiling point and boiling range	335.4 °C 635.7 °F at 1,013 hPa - (ECHA)
g) Flash point	179 °C (354 °F) - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 7.2 %(V) Lower explosion limit: 1.3 %(V)
k) Vapor pressure	No data available
l) Vapor density	5.15 - (Air = 1.0)
m) Density	1.124 g/cm <sup>3</sup> at 20 °C (68 °F)
Relative density	No data available
n) Water solubility	149 g/l at 20 °C (68 °F) - completely soluble
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	No data available
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

Dissociation constant	7.86 at 25 °C (77 °F)
Relative vapor density	5.15 - (Air = 1.0)

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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

Violent reactions possible with:

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!

Exothermic reaction with:

anhydrides

halogenating agents

Nitriles

Oxidizing agents

acids

A risk of explosion and/or of toxic gas formation exists with the following substances:

Acid chlorides

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

nonferrous metals, Light metals

### 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

LD50 Oral - Rat - male and female - 6,400 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

Acute toxicity estimate Dermal - 2,500 mg/kg

(Calculation method)

LD50 Dermal - Rabbit - > 2,000 mg/kg

(OECD Test Guideline 402)

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

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(OECD Test Guideline 405)

### **Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

### **Germ cell mutagenicity**

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

### **Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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**

No data available

### **Specific target organ toxicity - single exposure**

No data available

### **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 - 91 Days - NOAEL (No observed adverse effect level) - 1,000 mg/kg

Repeated dose toxicity - Rat - male - Dermal - 90 Days - NOAEL (No observed adverse effect level) - 125 mg/kg

RTECS: KL9275000

Kidney injury may occur., Dermatitis

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

Liver - Irregularities - Based on Human Evidence

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 11,800 mg/l - 96 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Ceriodaphnia dubia (water flea) - 609.88 mg/l - 48 h Remarks: (ECHA)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - 216 mg/l - 72 h (DIN 38412) Remarks: (ECHA)
Toxicity to bacteria	static test IC50 - activated sludge - > 1,000 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Daphnia magna (Water flea) - 16 mg/l - 21 d (OECD Test Guideline 211)

### 12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 5 d Result: ca.100 % - rapidly biodegradable Remarks: (ECHA)
Theoretical oxygen demand	2,040 mg/g Remarks: (IUCLID)

### 12.3 Bioaccumulative potential

Bioaccumulation	Cyprinus carpio (Carp) - 6 Weeks at 25 °C - 0.25 mg/l(Triethanolamine)
	Bioconcentration factor (BCF): < 3.9 (OECD Test Guideline 305)

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Cyprinus carpio (Carp) - 6 Weeks  
at 25 °C - 2.5 mg/l(Triethanolamine)

Bioconcentration factor (BCF): < 0.4  
(OECD Test Guideline 305)

#### **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 Endocrine disrupting properties**

No data available

#### **12.7 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.

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### **SECTION 14: Transport information**

#### **DOT (US)**

Not dangerous goods

#### **IMDG**

Not dangerous goods

#### **IATA**

Not dangerous goods

#### **Further information**

Not classified as dangerous in the meaning of transport regulations.

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**SECTION 15: Regulatory information****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**US State Regulations****Massachusetts Right To Know**

Triethanolamine 102-71-6

**Pennsylvania Right To Know**

Triethanolamine 102-71-6

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**The ingredients of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16: Other information

### Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. 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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