

## SAFETY DATA SHEET

Version 4.14  
Revision Date 06/25/2014  
Print Date 09/09/2014

---

**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Trizma® base  
  
Product Number : T4661  
Brand : Sigma  
  
CAS-No. : 77-86-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

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

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

---

**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**

Not a hazardous substance or mixture.

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

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

---

**3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Synonyms : 2-Amino-2-(hydroxymethyl)-1,3-propanediol  
THAM  
Trometamol  
Tris base  
Tris(hydroxymethyl)aminomethane

Formula : C<sub>4</sub>H<sub>11</sub>NO<sub>3</sub>  
Molecular Weight : 121.14 g/mol  
CAS-No. : 77-86-1  
EC-No. : 201-064-4  
Registration number : 01-2119957659-16-XXXX

No ingredients are hazardous according to OSHA criteria.  
No components need to be disclosed according to the applicable regulations.

---

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

#### **In case of skin contact**

Wash off with soap and plenty of water.

#### **In case of eye contact**

Flush eyes with water as a precaution.

#### **If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water.

### 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

---

## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4 Further information

no data available

---

## 6. ACCIDENTAL RELEASE MEASURES

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

Avoid dust formation. Avoid breathing vapours, mist or gas.

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

Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

---

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place.

### 7.3 Specific end use(s)

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

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

General industrial hygiene practice.

#### 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).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

##### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

##### Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

Do not let product enter drains.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |                           |  |
|---------------------------|--|
| a) Appearance             | Form: crystalline<br>Colour: colourlesswhite |
| b) Odour                  | no data available                            |
| c) Odour Threshold        | no data available                            |
| d) pH                     | 10.5 - 12                                    |
| e) Melting point/freezing | Melting point/range: 169 °C (336 °F)         |

point

- |   |   |
|---|---|
| f) Initial boiling point and boiling range      | 288 °C (550 °F) at 1,013 hPa (760 mmHg) - Decomposes below the boiling point. |
| g) Flash point                                  | no data available   |
| h) Evaporation rate                             | no data available   |
| i) Flammability (solid, gas)                    | no data available   |
| j) Upper/lower flammability or explosive limits | no data available   |
| k) Vapour pressure                              | no data available   |
| l) Vapour density                               | no data available   |
| m) Relative density                             | no data available   |
| n) Water solubility                             | 678 g/l at 20 °C (68 °F)  |
| o) Partition coefficient: n-octanol/water       | log Pow: -2.31 at 20 °C (68 °F)   |
| p) Auto-ignition temperature                    | The substance or mixture is not classified as self heating.                   |
| q) Decomposition temperature                    | no data available   |
| r) Viscosity                                    | not applicable  |
| s) Explosive properties                         | Not explosive   |
| t) Oxidizing properties                         | The substance or mixture is not classified as oxidizing.                      |

## 9.2 Other safety information

- |                       |                       |
|-----------------------|-----------------------|
| Bulk density          | 800 kg/m <sup>3</sup> |
| Dissociation constant | 8.22 at 25 °C (77 °F) |

---

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

hygroscopic

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Other decomposition products - no data available  
In the event of fire: see section 5

---

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - rat - > 3,000 mg/kg

Inhalation: no data available

LD50 Dermal - rat - > 5,000 mg/kg  
(OECD Test Guideline 402)

no data available

**Skin corrosion/irritation**

Skin - rabbit

Result: No skin irritation  
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - rabbit

Result: No eye irritation  
(OECD Test Guideline 405)

**Respiratory or skin sensitisation**

Buehler Test - guinea pig

Does not cause skin sensitisation.  
(OECD Test Guideline 406)

**Germ cell mutagenicity**

Result: Not mutagenic in Ames Test.

in vitro assay

Result: negative

In vitro tests did not show mutagenic effects

Result: In vivo tests did not show any chromosomal changes.

**Carcinogenicity**

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component 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 identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

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

**Additional Information**

Repeated dose toxicity - rat - Oral - No observed adverse effect level - 1,000 mg/kg

RTECS: TY2900000

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

---

**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia - > 980 mg/l - 48 h

Toxicity to algae EC50 - Algae - 397 mg/l - 72 h  
NOEC - Algae - 100 mg/l - 72 h

## 12.2 Persistence and degradability

Biodegradability Result: - Readily biodegradable.  
(OECD Test Guideline 301F)

## 12.3 Bioaccumulative potential

No bioaccumulation is to be expected (log Pow <= 4).

## 12.4 Mobility in soil

no data available

## 12.5 Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

## 12.6 Other adverse effects

no data available

---

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Contaminated packaging

Dispose of as unused product.

---

## 14. TRANSPORT INFORMATION

### DOT (US)

Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

---

## 15. REGULATORY INFORMATION

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

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.

### SARA 311/312 Hazards

No SARA Hazards

### Massachusetts Right To Know Components

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

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Tris (hydroxymethyl) aminomethane	77-86-1	

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Tris (hydroxymethyl) aminomethane	77-86-1	

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

---

## 16. OTHER INFORMATION

### HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

### NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

### Further information

Copyright 2014 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. 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.

### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

Version: 4.14

Revision Date: 06/25/2014

Print Date: 09/09/2014