



TRIS (D11, 98%)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 12/6/2010 Revision date: 9/27/2023 Supersedes: 8/18/2021 Version: 4.1

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Substance name	: TRIS (D11, 98%)
CAS-No.	: 77-86-1
Product code	: DLM-1814
Formula	: C ₄ H ₁₁ NO ₃
Synonyms	: 2-Amino-2-(hydroxymethyl)-1,3-propanediol; Tris(hydroxymethyl)aminomethane

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
01810
ANDOVER, MA, 01810
USA
T 1-800-322-1174
cilsales@isotope.com - www.isotope.com

1.4. Emergency telephone number

Emergency number : 1-703-741-5970
Chemtrec 1-800-424-9300 24 hours

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	GHS US classification
TRIS (D11, 98%) (Main constituent)	CAS-No.: 77-86-1	100	Not classified

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Repeated dose toxicity - rat - Oral - No observed adverse effect level - 1,000 mg/kg.
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO₂). Nitrogen oxides.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Avoid dust formation. Avoid breathing vapors, mist or gas. Use personal protective equipment as required.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

For containment : Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide appropriate exhaust ventilation at places where dust is formed.
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a cool, dry and well-ventilated place.
Storage conditions : Store at room temperature away from light and moisture.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.

Hand protection:

Wear suitable protective clothing and gloves

Eye protection:

Wear safety glasses with side shields (or goggles) and a face shield.

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Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection:

When appropriate, use NIOSH/CEN approved respirator.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline.
Color	: Colorless to white
Odor	: No data available
Odor threshold	: No data available
pH	: 10.5 – 12
Melting point	: 169 °C (336 °F)
Freezing point	: No data available
Boiling point	: 288 °C (550 °F) at 1,013 hPa (760 mmHg) - Decomposes below the boiling point.
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Molecular mass	: 132.2 g/mol (Labeled)
Solubility	: Water: 678 g/l
Partition coefficient n-octanol/water (Log Pow)	: -2.31 at 20 °C (68 °F)
Auto-ignition temperature	: The substance is not classified as self heating.
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: Not explosive.
Oxidizing properties	: The substance is not classified as oxidizing.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

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10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

hygroscopic.

10.5. Incompatible materials

Strong oxidizing agent.

10.6. Hazardous decomposition products

carbon oxides. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

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LD50 oral rat	> 3000 mg/kg
LD50 dermal rat	> 5000 mg/kg

Skin corrosion/irritation : Not classified
pH: 10.5 – 12

Serious eye damage/irritation : Not classified
pH: 10.5 – 12

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Potential Adverse human health effects and symptoms : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Repeated dose toxicity - rat - Oral - No observed adverse effect level - 1,000 mg/kg.

Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/effects after skin contact : May be harmful if absorbed through skin. May cause skin irritation.

Symptoms/effects after eye contact : May cause eye irritation.

Symptoms/effects after ingestion : May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

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TRIS (D11, 98%) (77-86-1)	
EC50 - Crustacea [1]	> 980 mg/l 48 h
EC50 - Other aquatic organisms [1]	397 ml/l Algae - 72 h
NOEC chronic algae	100 mg/l 72 h

12.2. Persistence and degradability

TRIS (D11, 98%) (77-86-1)	
Persistence and degradability	Biodegradability: Result - Readily biodegradable.

12.3. Bioaccumulative potential

TRIS (D11, 98%) (77-86-1)	
Partition coefficient n-octanol/water (Log Pow)	-2.31 at 20 °C (68 °F)
Bioaccumulative potential	No bioaccumulation is to be expected (log Pow <= 4).

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : Disposal must be done according to official regulations.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable

Proper Shipping Name (TDG) : Not applicable

Proper Shipping Name (IMDG) : Not applicable

Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not applicable

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TDG

Transport hazard class(es) (TDG) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Not dangerous goods.

DOT

No data available

TDG

No data available

IMDG

No data available

IATA

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

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SARA Section 302 Threshold Planning Quantity (TPQ)

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

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
TRIS (D11, 98%)	77-86-1	Not present	-	

15.2. International regulations

CANADA

TRIS (D11, 98%) (77-86-1)

Listed on the Canadian DSL (Domestic Substances List)

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EU-Regulations

No additional information available

National regulations

TRIS (D11, 98%) (77-86-1)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

No additional information available

SECTION 16: Other information

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Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Safety Data Sheet (SDS), USA

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