



SECTION 1 - Chemical Product and Company Identification

1.1 Product Identifiers

Product Name: : Tris/Tromethamine
 CAS #: : 77-86-1
 EC #: : 201-064-4
 RTECS #: : TY2900000
 REACH Registration Number : 01-2119957659-16-0037

1.2 Recommended Use of the Chemical and Restrictions of Use

Chemical Manufacturing

1.3 Supplier Details

Supplier BioSpectra, Inc.
 100 Majestic Way
 Bangor, PA 18013
 T: 610.599.3400
 ra@biospecta.us

1.4 Emergency Numbers

Emergency number: US & Canada: 1-800-424-9300
 Outside the US & Canada: +1 703-527-3887

SECTION 2 – Hazard Identification

2.1 Classification of Substance or Mixture

Not a hazardous substance or mixture per GHS nor EC 1272/2008

2.2 GHS Label Elements Including Precautionary Statements

Not a hazardous substance or mixture per GHS nor EC 1272/2008

2.3 Hazards not Classified or not Covered by the GHS

This substance is not considered to be Persistent, Bioaccumulating nor Toxic (PBT) nor Very Persistent or Very Bioaccumulating (vPBT) at levels of 0.1% or higher.

SECTION 3 – Composition, Information on Ingredients

Component	Classification	Concentration
Tris (Hydroxymethyl) Aminomethane	N/A	>99%

Synonyms : Trometamol; THAM; Tris (Hydroxymethyl) Aminomethane; Trisaminol; Trismethylolaminomethane; 2-Amino-2 (Hydroxymethyl) propane-1,3-diol, Tromethamine

EC Number : 201-064-4

CAS Number : 77-86-1

Molecular Formula : $\text{NH}_2\text{C}(\text{CH}_2\text{OH})_3$

Molecular Weight : 121.14 g/mol

SECTION 4 – First Aid Measures

4.1 Description of Necessary First Aid Measures

Eyes	:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids.
Skin	:	Wash off with soap and plenty of water.
Ingestion	:	DO NOT induce vomiting unless instructed to do so by a medical professional. Never give anything by mouth to an unconscious person. Drink plenty of water to dilute.
Inhalation	:	Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to Physician	:	Treat symptomatically and supportively.

4.2 Most Important Symptoms/Effects, Acute and Delayed

Refer to Section 2.2 for Precautionary Statements if any are applicable

4.3 Indication of Immediate Medical Attention and Special Treatment

No information available

SECTION 5 - Firefighting Measures

5.1 Extinguishing Media

Water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2 Specific Hazards Associated with this Chemical

Carbon Oxides, Nitrogen Oxides (NOx)

5.3 Special Equipment/Precautions for Firefighters

May be combustible at high temperatures. As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Explosion will appear as fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

5.4 Other Information

None available

SECTION 6 - Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Avoid dust formation. Avoid breathing vapors, mist or gas. Use proper personal protective equipment as indicated in Section 8.

6.2 Environmental Precautions

Do not allow to enter drains

6.3 Methods and Materials for Containment and Cleaning Up

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions.

6.4 Other Information

None available

SECTION 7 - Handling and Storage

7.1 Precautions for Safe Handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Discard contaminated shoes.

7.2 Conditions for Storage Including any Incompatibilities

Store in a cool, dry place. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from acids. Keep containers tightly closed.

7.3 Other Information

Hygroscopic.

SECTION 8 - Exposure Controls, Personal Protection

8.1 Control Parameters

Chemical does not contain any substances with occupational exposure limits

8.2 Engineering Controls

Use adequate ventilation to keep airborne concentrations low.

8.3 Personal Protective Equipment

Eyes

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin

Wear appropriate protective gloves to prevent skin exposure. Wear impervious gloves: Nitrile rubber with layer thickness 0.11mm.

Clothing

Wear appropriate protective clothing to prevent skin exposure

Respirators

Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

SECTION 9 - Physical and Chemical Properties

Physical State	: Solid
Appearance	: White Crystalline
Odor	: Not Available
pH	: 10.0-11.5 (5% aq. solution)
pK _a	: 8.07 @ 25 °C
Vapor Density	: Not available
Viscosity	: Not available
Melting Range	: 168-172 °C
Boiling Point	: 220 °C
Decomposition Temperature	: N/A
Specific Gravity/Density	: Not available
Solubility	: 550 mg/mL, 25 °C
Molecular Formula	: NH ₂ C(CH ₂ OH) ₃
Molecular Weight	: 121.14 g/mol

SECTION 10 - Stability and Reactivity

10.1 Chemical Stability

Stable under normal temperatures and pressures.

10.2 Conditions to Avoid

Incompatible materials.

10.3 Incompatibilities with Other Materials

Strong oxidizing agents

10.4 Hazardous Decomposition Products

Carbon Oxides, Nitrogen Oxides (NOx)

10.5 Hazardous Polymerization

Will not occur.

SECTION 11 - Toxicological Information

11.1 Toxicological Effects

LD50/LC50 Oral, rat	: LD50 => 5000 mg/kg
LD50/LC50 Dermal, rat	: LD50 => 5,000 mg/kg
Carcinogenicity	: CAS# 77-86-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA
Epidemiology	: No data available
Teratogenicity	: No data available
Reproductive Effects	: No data available
Neurotoxicity	: No data available
Mutagenicity	: No data available
Other Studies	: No data available

11.2 Additional Information

RTECS# : TY2900000

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

To the best of our knowledge the associated physical, chemical and toxicological properties of this chemical have not undergone thorough investigation, all known information is contained in this SDS.

SECTION 12 - Ecological Information

12.1 Ecotoxicity

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
Method	: OECD Test Guideline 301F

12.3 Bioaccumulative Potential

No information available

12.4 Mobility in Soil

No information 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 information available

SECTION 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

SECTION 14 - Transport Information

Regulations	US DOT	IATA	IMDG	ADR
Shipping Name	Not Dangerous Goods	Not Dangerous Goods	Not Dangerous Goods	Not Dangerous Goods
Hazard Class				
UN Number				
Packing Group				

SECTION 15 - Regulatory Information

15.1 EHS Chemical Specific Regulations

SARA:

Section 302 : Not Available
 Section 313 : Not Available
 SARA 311/312 Hazards : No SARA Hazards

STATE SPECIFIC:

Massachusetts Right To Know Components : No components are subject to the Massachusetts Right to Know Act.
 Pennsylvania Right To Know Components : Tris (hydroxymethyl) aminomethane
 New Jersey Right To Know Components : Tris (hydroxymethyl) aminomethane
 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

SECTION 16 - Additional Information

16.1 Hazard Ratings

NFPA Rating	
Health hazard	0
Fire Hazard	0
Reactivity Hazard	0

HMIS Classification	
Health hazard	0
Flammability	0
Physical Hazards	0

The information conveyed in this Safety Data Sheet is only a representation of what BioSpectra has found to be accurate based on the current information that is available in regards to this compound. BioSpectra makes no warranty, expressed or implied, with respect to such information, and therefore assumes no liability resulting from product usage. It is strongly recommended that users of this product perform their own investigations to determine the accuracy and suitability of the information for their specific purposes. In no way will BioSpectra assume liability for any claims, losses, damages to any third party, any lost profits or any special, indirect, incidental, consequential or exemplary damages that may arise, even if BioSpectra has been advised of the possibility of such damages.