SECTION 1 - Chemical Product and Company Identification

1.1 Product Identifiers

Product Name	:	Tris Hydrochloride
CAS #	:	1185-53-1
EC#	:	214-684-5
RTECS#	:	Not Applicable
REACH Registration No	:	01-2120301688-54-0009

1.2 Recommended Use of the Chemical and Restrictions of Use

Chemical manufacturing and laboratory use.

1.3 Supplier Details

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

1.4 Emergency Numbers

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

SECTION 2 – Hazard Identification

2.1 Classification According to Regulation (EC) No 1272/2008 (CLP) as Amended and GHS Classification in Accordance with 29 CFR 1910 (OSHA)

Based on available data, classifications are not met.

2.2 GHS Label Elements Including Precautionary Statements

Hazard Pictogram	:	None
Signal Word	:	None
Hazard Statement(s)	:	None
Precautionary Statement(s)	:	None

2.3 Other Hazards

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

SECTION 3 – Composition, Information on Ingredients

Component	Classification	Concentration
Tris (Hydroxymethyl) Aminomethane Hydrochloride	Not Applicable	>99%

Synonyms	:	2-Amino-2-(Hydroxymethyl)-1,3-Propanediol Hydrochloride; Tris (Hydroxymethyl) Aminomethane Hydrochloride
EC Number	:	214-684-5
CAS Number	:	1185-53-1

Molecular Formula	:	$NH_2C(CH_2OH)_3 \cdot HCl$
Molecular Weight	:	157.60 g/mol

SECTION 4 – First Aid Measures

4.1 Description of Necessary First Aid Measures

General Advice	:	Consult a physician. Show this Safety Data Sheet to the treating physician.
Eyes	:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Consult a physician irritation develops or persists.
Skin	:	Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Consult a physician if irritation develops or persists.
Ingestion	:	Do not induce vomiting. Never give anything by mouth to an unconscious person. If person is awake, rinse mouth out with water. Consult a physician.
Inhalation	:	Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician if cough or other symptoms appear.

4.2 Most Important Symptoms/Effects, Acute and Delayed

No information available.

4.3 Indication of Immediate Medical Attention and Special Treatment

Treat symptomatically

SECTION 5 - Firefighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media : Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media : Do not use a heavy water stream such as water jet.

5.2 Specific Hazards Associated with this Chemical

Hydrogen Chloride (HCl), Nitrogen Oxides (NOx), Carbon Monoxide (CO), Carbon Dioxide (CO_2).

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 vapours, 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. Cover drains. 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

Avoid dust formation. Wash thoroughly after handling. Use with adequate ventilation.

7.2 Conditions for Storage Including any Incompatibilities

Store in a cool, dry, well-ventilated area away from incompatible substances.

7.3 Specific End Uses

No Information Available.

SECTION 8 - Exposure Controls, Personal Protection

8.1 Control Parameters

Chemical does not have 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 (powder, crystalline)
Color	:	White
Odor	:	Odorless
Odor Threshold	:	No data available
pH	:	3.5-5.5 (0.5M)
Melting Point/Freezing Point	:	147 - 153 °C
Initial Boiling Point and Boiling Range	:	No data available
Flash Point	:	No data available
Evaporation Rate	:	No data available
Flammability (solid, gas)	:	No data available
Lower Explosion Limit (LEL)	:	No data available
Upper Explosion Limit (UEL)	:	No data available
Explosion Limits of Dust Clouds	:	No data available

Vapor Pressure	:	No data available
Density	:	No data available
Vapor Density	:	No data available
Relative Density	:	No data available
Water Solubility	:	101 g/100 mL
n-Octanol/Water (log KOW)	:	No data available
Auto-Ignition Temperature	:	No data available
Decomposition Temperature	:	No data available
Viscosity	:	No data available
Explosive Properties	:	None
Oxidizing Properties	:	None

SECTION 10 - Stability and Reactivity

10.1 Reactivity

This product is non-reactive under normal conditions of use, storage, and transport.

10.2 Chemical Stability

Stable under normal temperatures and pressures.

10.3 Possibility of Hazardous Reactions

Violent reaction with strong oxidizers

10.4 Conditions to Avoid

Incompatible materials.

10.5 Incompatibilities with Other Materials

Bases, oxidizing agents, water, humid air

10.6 Hazardous Decomposition Products

Not available.

SECTION 11 - Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity	:	Based on available data the classification criteria are not met.
Skin Corrosion/Irritation	:	Based on available data the classification criteria are not met.
Serious Eye Damage/Eye Irritation	:	Based on available data the classification criteria are not met.
Carcinogenicity	:	Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology	:	Based on available data the classification criteria are not met.
Teratogenicity	:	Based on available data the classification criteria are not met.
Reproductive Effects	:	Based on available data the classification criteria are not met.
Neurotoxicity	:	Based on available data the classification criteria are not met.
Mutagenicity	:	Based on available data the classification criteria are not met.
Other Studies	:	Based on available data the classification criteria are not met.

SECTION 12 - Ecological Information

12.1 Ecotoxicity

Toxicity to Daphnia and Other Aquatic Invertebrates	
EC50 - Daphnia	>100 mg/l - 48 h
Toxicity to Algae EC50 – Other Microorganisms	1000 mg/l - 3 h

12.2 Persistence and Degradability

Readily biodegradable

12.3 Bioaccumulative Potential

No information available.

12.4 Mobility in Soil

No information available.

12.5 Results of PBT and vPvB Assessment

PBT/vPvB classification criteria are not met.

12.6 Other Adverse Effects

No information available.

SECTION 13 - Disposal Considerations

Dispose of in a manner consistent with National, 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

European Union:

EU Regulations Regulation (EC) No. 2037/2000 Substances that deplete the ozone layer	:	None
Regulation (EC) No. 850/2004 on persistent organic pollutants	:	None
Regulation (EC) No. 689/2008 Import and export of dangerous chemicals	:	None
Regulation (EC) No. 1907/2006 REACH Annex XIV Substance subject to authorization, as amended	:	None
Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use	:	None
Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work	:	None
Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding	:	None
Directive 96/82/EC (Seveso III): on the control of major accident hazards involving dangerous substances	:	None
EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants	:	None
Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work	:	None

United States:

SARA:

Section 302 (RQ)	:	None of the chemicals in this material have an RQ.
Section 302 (TPQ)	:	None of the chemicals in this product have a TPQ.
Section 313	:	No chemicals are reportable under Section 313.
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 HCl CAS# 1185-53-1.
New Jersey Right To Know Components	:	Tris (hydroxymethyl) aminomethane HCl CAS# 1185-53-1.
California Prop. 65 Components	:	No Significant Risk Level: None of the chemicals in this product are listed.

SECTION 16 - Additional Information

16.1 Hazard Ratings

NFPA Rating	
Health Hazard	2
Fire Hazard	1
Reactivity Hazard	1