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Material Safety Data Sheet

Effective Date: 06-23-08

I. CHEMICAL PRODUCT

Product: Tris-(hydroxymethyl)-aminomethane Hydrochloride
General Use: pH-Buffer
Emergency Number (Spills & Exposures: 800-424-9300
Non-Emergency Information: 716-731-5161

II. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Tris (hydroxymethyl)-aminomethane,≥ 99.0% — CAS No: 1185-53-1
MF: $C_4H_{11}NO_3 \cdot HCl$ — EINECS No: 214-684-5
M.W.: 157.6 — OSHA PEL: Not listed

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Alternate Names: Tris HCL, Tris-hydroxymethyl-aminomethane Hydrochloride; 1,3-Propanediol Hydrochloride; Tromethamine Hydrochloride; Trometamol Hydrochloride;, 2-Amino-2-(hydroxymethyl)-1,3-propanediol Hydrochloride; THAM Hydrochloride.

III. HAZARDS IDENTIFICATION

This material can be an irritant, contact with eyes and skin should be avoided. Inhalation of dust may be irritating to the respiratory tract.

Risk Phrases: R36/37/38 Irritating to eyes, respiratory system and skin.
Safety Phrases: S26 In case of contact with eyes, rinse immediately with large volumes of water and seek medical advice.
S 36 Wear suitable protective clothing.

IV. FIRST AID MEASURES

Eyes: Immediately flush with plenty of water for at least 15 minutes. If redness, itching or a burning sensation develops, have eyes examined by medical personnel.
Skin: Wash material off of skin with soap and plenty of water while removing contaminated clothing and footwear. If redness, itching or a burning sensation develops, get medical attention.
Ingestion: Give 1 or 2 glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel. Never give anything by mouth to an unconscious person.
Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

V. FIRE FIGHTING MEASURES

Extinguishing Media:	Water, dry chemical, foam, and carbon dioxide.
Thermal Decomposition Products:	CO, CO2, Nitrogen Oxides
Fire Fighting Procedures:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
General Hazards:	Does not burn; decomposes.
Explosions Hazards:	None.

VI. ACCIDENTAL RELEASE MEASURES

Ventilate spill area. Wear skin, eye and respiratory protection during cleanup. Mix spilled material with moist absorbent. Sweep up and shovel into a chemical waste container. Cover container and remove from work area. Wash residue from spill area with water and flush to sewer serviced by a waste water treatment facility.

VII. HANDLING AND STORAGE

Handling:	Do not enter storage area unless area is adequately ventilated.
Storage:	Store in a cool, dry and well ventilated area. Avoid strong light. Keep container sealed during storage.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Control:	Minimize dust formation. Use ventilation adequate to maintain safe levels. Provide eyewash station and safety shower in work area.
Respiratory Protection:	Use MSHA/NIOSH approved or equivalent dust respirator.
Eye Protection:	Chemical safety goggles with side shields.
Skin/Hand Protection:	Wear protective clothing including impervious gloves, apron and arm covers to avoid skin contact.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White crystalline
Boiling Point:	Not applicable
Bulk density:	52 lb/ft^3
pH (5% solution at 25°C.):	3.5-5.0
Solubility in water:	100 g/liter @ 25C
Vapor density (air =1):	Not applicable
Vapor pressure (mm Hg at 20°C.):	Not applicable
% Volatile by volume:	Not applicable

X. STABILITY AND REACTIVITY

Flash Point:	Not applicable.
Stability:	Stable under normal conditions.
Incompatibility:	Oxidizing agents and bases.
Hazardous decomposition products:	Thermal decomposition may produce carbon dioxide, carbon monoxide and nitrogen oxides.
Hazardous polymerization:	Will not occur.

XI. TOXICOLOGICAL INFORMATION

Toxicity: Slightly toxic by ingestion.

Irritation: Irritating to eyes and skin. May cause skin inflammation, risk of corneal clouding, especially in the presence of ethanol. Inhalation of dust may be irritating to respiratory tract. Ingestion may cause nausea, vomiting, nervousness, confusion, cyanosis, collapse, muscular spasms and coma. Risk of aspiration upon vomiting.

Note: The acute oral LD50 (rat) is 5,900 mg/kg.

XII. ECOLOGICAL INFORMATION

Water/AIR Pollution: No ecological problems are expected when the product is used with due care.

Biodegradability: Not known.

XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Discarded product is not a hazardous waste under RCRA, 40 CFR 261.

Container Disposal: Empty container retains product residue. Observe all hazard precautions. Do not distribute, make available, furnish, reuse empty container when once emptied of original product. Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

XIV. TRANSPORT INFORMATION

Not subject to international (ICAO/IATA/IMO), US DOT HM-181 or Canadian Transportation of Dangerous Goods regulations.

UN No: Not applicable.

XV. REGULATORY INFORMATION

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710: All ingredients are on the TSCA Chemical Substances Inventory.

CERCLA and SARA Regulations (40 CFR 355, 370 and 372): This product does not contain any chemicals subject to the reporting requirements of SARA Section 313.

Canadian WHMIS Hazard Class and Division: Class D, Division 2B - Eye, skin and respiratory irritant.

Symbol (European Union): Xi (Irritant, R36/37/38)

EEC Warning Label Statement: Irritant

Irritating to eyes, skin and respiratory system.

Water Pollution Class (Germany): 1 (slightly polluting substance)

XVI. OTHER INFORMATION

The information presented in this Material Safety Data Sheet is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide for safety precautions. The data does not reflect a guarantee of any product properties.