CALEDON LABORATORY CHEMICALS

MATERIAL SAFETY DATA SHEET

TRIS(HYDROXYMETHYL)AMINOMETHANE

PRODUCT CODE NUMBER(S): 8980-1, 8982-5

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Tris(hydroxymethyl)-aminomethane; Tromethamine, 1,2-Propanediol; TRIS*
Chemical Family: *Amines*
Chemical Formula: $NH_2.C(CH_2OH)_3$
Product Use: *Laboratory reagent*
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9
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HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	*%*	*TLV Units*	*CAS No.*
Tris(hydroxymethyl) methylamine	*99*	*10 mg/m^3 (nuisance dust)*	*77-86-1*

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *White crystalline powder; slight characteristic amine odour*
Odour Threshold (ppm): *Not available*
Vapour Pressure (mm Hg): *Low at ambient temperatures*
Vapour Density (Air = 1): *4.2*
Evaporation Rate: *Not applicable*
Boiling Point (degrees C): *~220°C*
Melting Point (degrees C): *171.2 - 172.3°C*
pH: *10.4 (0.1M aqueous solution)*
Specific Gravity: *Not available*
Coefficient of Water/Oil distribution: *logP (oct)= -3.67 (calculated)*

SHIPPING DESCRIPTION

UN: *Not regulated*
T.D.G. Class: *Not regulated*
Pkg. Group: *Not regulated*

REACTIVITY DATA

Chemical Stability: *Stable; hygroscopic*
Incompatibility with other substances: *Reacts vigorously or violently with strong bases, strong acids, or oxidizing agents. Reacts with aldehydes to form bicyclic oxazolidines. Attacks copper, brass, aluminum, but not steel or iron.*
Reactivity: *Avoid excessive heat, ignition sources, exposure to moist air or water, generation of dust, all incompatible mateirals.*
Hazardous Decomposition Products: *CO_x, NO_x*

FIRE AND EXPLOSION DATA

Flammability: *May be combustible if strongly heated. As with most organic compounds, fine dust dispersed in air in the presence of an ignition source is a potential dust explosion hazard.*
Extinguishing Media: *Water fog or spray, alcohol-resistant foam, dry chemical, carbon dioxide. Water or foam may cause frothing, which will blanket and smother the fire. Water spray can also be used to cool containers, prevent dust formation, flush chemcial away from fire. Fight fire from upwind direction, from a safe distance. Firefighters must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes.*
Flash Point (Method Used): *Not available*
Autoignition Temperature: *Not available*
Upper Flammable Limit (% by volume): *Not available*
Lower Flammable Limit (% by volume): *Not available*
Hazardous Combustion Products: *CO_x, NO_x, irritating smoke*
Sensitivity to Impact: *None identified*
Sensitivity to Static discharge: *As with most organic powders, mixtures of dust with air may be sensitive under certain conditions, when ignited by an electrostatic or other high-voltage spark, or other ignition source.*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

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

Toxicological Data:

LD_{50}: *(oral, rat) 5,900 mg/kg*
LC_{50}: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *May be irritating to upper respiratory tract, causing sore throat, coughing, shortness of breath. Inhalation of large amounts may be harmful.*
In contact with skin: *Dust or solutions may be irritating to skin, causing redness, itching, and pain.*
In contact with eyes: *Dust or solutions may cause irritation, redness, pain, temporary blurring of vision.*
Ingested: *Large oral dosages may produce gastrointestinal irritation, nausea, vomiting. Large doses could cause metabolic changes including hypoglycemia, and hyperkalemia, confusion, muscular spasms, eventual coma. May cause liver and kidney damage.*

Effects of Chronic Exposure to Product:

Prolonged skin exposure may cause dermatitis. Prolonged or repeated exposure to large amounts could cause liver and kidney damage.
Carcinogenicity: *No information available*

Teratogenicity: *No information available*
Reproductive Effects: *No information available*
Mutagenicity: *No information available*
Synergistic Products: *Not known*

PREVENTIVE MEASURES

Engineering Controls: *Local exhaust ventilation recommended.*
Respiratory Protection: *Dust/mist mask. Up to 10x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH/OSHA approved half- face high-efficiency dust/mist filter respirator. Up to 50x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH/OSHA approved full face-piece high-efficiency dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.*
Eye Protection: *Chemical safety glasses.*
Skin Protection: *Wear protective gloves and clean body-covering clothing, long-sleeved shirt, trousers, apron or lab coat.*
Other Personal Protective Equipment: *Eyewash fountain ans safety shower in work area.*
Leak and Spill Procedure: *Ventilate area. Eliminate ignition sources. Cleanup personnel be trained in the handling of chemicals and should wear protective equipment and clothing sufficient to prevent inhalation of dust or mist, and contact with skin and eyes. Gather up in a manner that does not raise dust. Transfer into containers and arrange removal by disposal company. Wash site of spillage thoroughly with water and detergent.*
Waste Disposal: *Follow all federal, provincial and local regulations for disposal.*
Handling Procedures and Equipment: *COMBUSTIBLE DUST. Workers using this chemical must be properly trained in its hazards and its safe use,and must wear appropriate protective equipment and clothing. Avoid generating dust. If there is dust, keep away from heat, sparks, and all sources of ignition; avoid the accumulation of static charge, use anti-sparking tools and ground and bond equipment and containers. Use the smallest amount possible for the purpose, in a designated area with adequate ventilation. Use good housekeeping to prevent accumulations of dust. Avoid contact with skin and eyes. Avoid inhalation. Wash thoroughly after handling.*
Storage Requirements: *Store in suitable, labelled containers, in a cool, dry, well ventilated area, away fromall ignition sources and incompatible materials. Keep containers tightly closed when not in use and when empty. Protect from damage.*

FIRST AID MEASURES

Specific Measures:

Eyes: *Flush eyes thoroughly with gently running water, holding eyelids open while flushing, for five to ten (5-10) minutes, or until no trace of chemical remains. Get medical advice if irritation develops.*
Skin: *Remove contaminated clothing. Brush or wipe off dry material. Flush skin with plenty of running water until no evidence of chemical remains. If irritation develops get medical attention.*
Inhalation: *Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.*
Ingestion: *If victim is alert and NOT convulsing, rinse mouth, give several glasses of water to drink to dilute. If discomfort occurs, or if a large amount has been ingested, get medical attention.*

REFERENCES USED

CCINFO disc: Cheminfo
Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987
Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: *July 22, 1991*
Revision: *June 2011*
MSDS: *8980-1, 8982-5*
Proposed WHMIS Designation: *D2B (eye irritation)*

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