TRIS(HYDROXYMETHYL) AMINOMETHANE
tris; 2-amino-2-(hydroxymethyl)-1,3-propanediol; tham; tromethamine (usp); tris (base);
trisamine

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1. Product Identification
TRIS; 2-Amino-2-(hydroxymethyl)-1,3-propanediol; THAM; Tromethamine (USP); TRIS (Base); Trisamine

Molecular Weight: 121.14
Chemical Formula: H2NC(CH2OH)3

3. Hazards Identification
Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Health Rating: 1 - Slight
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT

Potential Health Effects

Inhalation::
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion::
Mild alkali. Causes irritation and reddening to the mucous membranes of the mouth, esophagus, and gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Large oral doses may cause weakness, collapse, blood clotting and coma. Estimated lethal dose: 50 grams.

Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:
Causes irritation, redness, and pain.

Chronic Exposure:
Chronic dermatitis may follow skin contact.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures
Inhalation::
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion::
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated Clothing and shoes. Get medical attention. Wash Clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. **Fire Fighting Measures**

**Fire:**
As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Slight fire hazard when exposed to heat or flame.

**Explosion:**
Not considered to be an explosion hazard.

**Fire Extinguishing Media:**
Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Special Information:**
In the event of a fire, wear full protective Clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. **Accidental Release Measures**

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

7. **Handling: and Storage**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. **Exposure Controls/Personal Protection**

**Airborne Exposure Limits:**
None established.

**Ventilation System:**
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**
For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying Respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**
Wear protective gloves and clean body-covering Clothing.

**Eye Protection:**
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is
possible. Maintain eye wash fountain and quick-drench facilities in work area.

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<th>9. Physical and Chemical Properties</th>
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<tr>
<td><strong>Appearance:</strong> Transparent, colorless crystals.</td>
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<td><strong>Odor:</strong> Slight characteristic odor.</td>
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<td><strong>Solubility:</strong> 550 mg/mL</td>
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<td><strong>pH:</strong> 10.4 (0.1 molar solution)</td>
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<td><strong>% Volatiles by volume @ 21°C (70°F):</strong> 0</td>
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<tr>
<td><strong>Boiling Point:</strong> 219 - 220°C (426 - 428°F)</td>
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<td><strong>Melting Point:</strong> 171 - 172°C (340 - 342°F)</td>
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<th>10. Stability and Reactivity</th>
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<td><strong>Stability:</strong> Stable under ordinary conditions of use and Storage.</td>
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<td><strong>Hazardous Decomposition Products:</strong> Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.</td>
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<td><strong>Hazardous Polymerization:</strong> Will not occur.</td>
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<td><strong>Incompatibilities:</strong> Copper, brass, aluminum, and oxidizing agents.</td>
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<td><strong>Conditions to Avoid:</strong> Heat, incompatibles.</td>
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<th>11. Toxicological Information</th>
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<td>Tris: oral rat LD50: 5900 mg/kg.</td>
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