1. IDENTIFICATION

Product identifier

Product code: TR149
Product Name: TROMETHAMINE, USP

Other means of identification

Synonyms:
- Tris(hydroxymethyl)aminomethane
- Tris(hydroxymethyl)methylamine
- 2-Amino-2-(hydroxymethyl)-1,3-propanediol
- 2-Amino2-(hydroxymethyl)propane-1,3-diol
- 2-Amino-2-methylol-1,3-propanediol
- Aminotrimethylolmethane; Aminotris(hydroxymethyl)methane
- Methyl, 1,1,1-tris(hydroxymethyl)-
- Tris (hydroxymethyl)methanamine
- 1,3-Propanediol, 2-amino-2(hydroxymethyl)-
- Spectris
- Tris Buffer
- Tris-amino
- Tromethane
- Tromethamine
- Trometamol
- Trisamine
- Trisaminol
- Trismat

CAS #: 77-86-1
RTECS # TY2900000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: In synthesis of surface-active agents, vulcanization accelerators; in
pharmaceuticals; titrimetric standard; as an emulsifying agent for cosmetic creams
and lotions; in mineral oil and paraffin wax emulsions; in leather dressings;
emulsifying agent for textile specialities; in polishes, cleaning compounds.

Uses advised against
No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

Product code: TR149  Product name: TROMETHAMINE, USP
This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |

**Label elements**

**Warning**

**Hazard statements**
Causes skin irritation
Causes serious eye irritation

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tromethamine</td>
<td>77-86-1</td>
<td>100</td>
</tr>
</tbody>
</table>

**4. FIRST AID MEASURES**

**First aid measures**

**General Advice:**
National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

**Skin Contact:**
Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.

**Product code:** TR149  **Product name:** TROMETHAMINE, USP
Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

**Most important symptoms and effects, both acute and delayed**

**Symptoms**
- Causes skin irritation
- Moderately irritating to the skin
- Causes serious eye irritation
- Moderately irritating to the eyes
- Coughing
- Dyspnea (Shortness of breath and difficulty breathing)
- Respiratory depression
- Ingestion may cause nausea, vomiting, and diarrhea
- Weakness
- May cause hypoglycemia
- Alkalosis
- Hyperkalemia
- Increase in urine volume

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

**Protection of first-aiders**
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

---

### 5. FIRE-FIGHTING MEASURES

**Extinguishing Media**

**Suitable Extinguishing Media:** Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

**Unsuitable Extinguishing Media:** No information available.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:** Carbon Monoxide, Carbon Dioxide. Nitrogen Oxides.

**Specific hazards:** May be combustible at high temperatures.

**Special Protective Actions for Firefighters**

**Specific Methods:** No information available.

**Special Protective Equipment for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Hygroscopic. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents
Acids
Bases
Metals
Aluminum
Zinc
Copper
Copper alloys
Aldehydes

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WEEL</th>
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<td>77-86-1</td>
<td>None</td>
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Product code: TR149          Product name: TROMETHAMINE, USP
Canada

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Canada - Alberta</th>
<th>Canada - British Columbia</th>
<th>Canada - Ontario</th>
<th>Canada - Quebec</th>
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Australia and Mexico

<table>
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<th>CAS-No.</th>
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<th>Mexico</th>
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</thead>
<tbody>
<tr>
<td>Tromethamine</td>
<td>77-86-1</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures to reduce exposure:
Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Safety glasses with side-shields or Goggles
Skin and body protection: Long sleeved clothing
Chemical resistant apron
Gloves
Respiratory protection: Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds), inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid
Color: White.
Odor: Odorless.
Formula: C4-H11-N-O3
Molecular/Formulas weight: 121.14
Flammability: No information available
Flashpoint (°C/°F): No information available.
Flash Point Tested according to: Not available
Autoignition Temperature (°C/°F): No information available
Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available
Melting point/range(°C/°F): 168-172 °C/334.4-341.6 °F
Decomposition temperature(°C/°F): No information available
Product code: TR149
Product name: TROMETHAMINE, USP
10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents
Reacts with strong bases
Reactive with metals

Chemical stability
Stability: Stable under recommended storage conditions.

 Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid:

 Incompatible Materials: Oxidizing agents
Acids
Bases
Metals
Aluminum
Zinc
Copper
Copper alloys
Aldehydes

Hazardous decomposition products:

Other Information
Corrosivity: No information available

Boiling point/range (°C/°F):
No information available

Bulk density:
No information available

Density (g/cm³):
No information available

Specific gravity:
No information available

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
-1.56 to -2.31

Miscibility:
No information available

Solubility:
Freely soluble in water
Solubility in Water: 5500-8000 g/l @ 20 °C
Solubility in Ethylene Glycol: 79.1 mg/ml.
Solubility in Methanol: 26 mg/ml.
Solubility in Acetone: 14.6 mg/ml.
Solubility in Ethyl Acetate: 0.5 mg/ml.
Solubility in Olive oil: 0.4 mg/ml.
Solubility in Cyclohexane: 0.1 mg/ml.
Solubility in Chloroform: 0.05 mg/ml.
Solubility in Carbon Tetrachloride: less than 0.05

Product code: TR149
Product name: TROMETHAMINE, USP
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>LD50/oral/rat</th>
<th>LD50/oral/mouse</th>
<th>LD50/dermal/rabbit</th>
<th>LD50/dermal/rat</th>
<th>LC50/inhalation/rat</th>
<th>LC50/inhalation/mouse</th>
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</thead>
<tbody>
<tr>
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<td>77-86-1</td>
<td>5900 mg/kg</td>
<td>5500 mg/kg</td>
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<td>5900 mg/kg Oral LD50</td>
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Product Information

<table>
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<tbody>
<tr>
<td>LD50/oral/rat</td>
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<tr>
<td>LD50/oral/mouse</td>
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<tr>
<td>LD50/dermal/rabbit</td>
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<td>LD50/dermal/rat</td>
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</tr>
<tr>
<td>LC50/inhalation/rat</td>
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</tr>
<tr>
<td>LC50/inhalation/mouse</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

Symptoms

Skin Contact: Causes skin irritation. Moderately irritating to the skin.

Eye Contact: Causes serious eye irritation. Moderately irritating to the eyes.

Inhalation: May cause irritation of respiratory tract. Symptoms may include coughing and shortness of breath.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May

Product code: TR149  Product name: TROMETHAMINE, USP

Aspiration hazard
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity
No information available.

Sensitization:
No information available.

Mutagenic Effects:
No information available

Carcinogenic effects:
No information available.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
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<tr>
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<td>Not listed</td>
<td>Not listed</td>
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<td>Not listed</td>
</tr>
</tbody>
</table>

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity
No data is available

Reproductive Effects:
No information available

Developmental Effects:
No information available

Teratogenic Effects:
No information available

Specific Target Organ Toxicity

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Target Organs:
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects:
No data available.

Persistence and degradability:
No information available

Bioaccumulative potential:
No information available.

Mobility:
No information available.

13. DISPOSAL CONSIDERATIONS

Product code: TR149

Product name: TROMETHAMINE, USP
**Disposal Methods**

**Waste from residues / unused products:**
Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tromethamine</td>
<td>77-86-1</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

### 14. TRANSPORT INFORMATION

**DOT**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Class:** No information available
- **Packing group:** No information available
- **Emergency Response Guide Number:** No information available
- **Marine Pollutant:** No data available
- **DOT RQ (lbs):** No information available
- **Special Provisions:** No Information available
- **Symbol(s):** No information available
- **Description:** No information available

**TDG (Canada)**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Marine Pollutant:** No Information available
- **Description:** No information available

**ADR**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Packing Group:** No information available
- **Subsidiary Risk:** No information available

**IMO / IMDG**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Packing Group:** No information available
- **Subsidiary Risk:** No information available

**RID**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available

**Product code:** TR149  **Product name:** TROMETHAMINE, USP
Packing Group: No information available

ICAQ
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available

IATA
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- ERG Code: No information available
- Special Provisions: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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<tbody>
<tr>
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<td>77-86-1</td>
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<td>Present KE-01403</td>
<td>Present</td>
<td>Present (2)-318</td>
<td>Present</td>
<td>Present</td>
<td>Present 201-064-4</td>
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</tbody>
</table>

U.S. Regulations


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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<tbody>
<tr>
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<td>Not Listed</td>
<td>Not Listed</td>
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</tbody>
</table>

CERCLA/SARA

| Components | CAS-No. | CERCLA - Hazardous Substances and their Reportable Quantities | Section 302 Extremely Hazardous Substances and TPQs | Section 302 Extremely Hazardous Substances and RQs | Section 313 - Chemical Category | Section 313 - Reporting de minimis |
|------------|---------|-------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------|--------------------------------|---------------------------------
| Tromethamine | 77-86-1 | None                                                       | None                                             | None                                            | None                           | None                           |

U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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<tbody>
<tr>
<td>Tromethamine</td>
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Canada

Product code: TR149
Product name: TROMETHAMINE, USP
### WHIMIS 2015 - GHS Classifications

**WHMIS 2015 Hazard Classification**

Information:

<table>
<thead>
<tr>
<th>Component</th>
<th>WHMIS 2015 Hazard Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tromethamine</td>
<td>Combustible Dust - Category 1: May form combustible dust concentrations in air (factors such as combustibility and explosiveness of dusts including composition and shape and size of particles could cause substance to belong to ‘Combustible dust’ hazard class)</td>
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</table>

**Canada Hazardous Products Regulation**

This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR.

**WHMIS 1988 Hazard Class**

D2B Toxic materials

**Components**

<table>
<thead>
<tr>
<th>WHMIS 1988</th>
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</thead>
<tbody>
<tr>
<td>Tromethamine</td>
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**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Inventory

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### EU Classification

**EU GHS - SV - CLP 1272/2008**

<table>
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<th>Components</th>
<th>CAS-No.</th>
<th>EU GHS - SV - CLP (1272/2008)</th>
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</table>

**EU - CLP (1272/2008)**

**R-phrase(s)**

R36/38 - Irritating to eyes and skin.

**S-phrase(s)**

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

### Indication of danger:

Xi - Irritant.

**Product code:** TR149

**Product name:** TROMETHAMINE, USP
16. OTHER INFORMATION

Preparation Date: 2/20/2014
Revision Date: 1/19/2018
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet