

Material Safety Data Sheet

| HAZARD WARNINGS | RISK PHRASES | PROTECTIVE CLOTHING |
|---|--|---|
|   | Flammable material; avoid heat and sources of ignition. Corrosive to eyes and skin on contact. Harmful compound, minimize exposure. Hygroscopic -- keep container tightly sealed. |  |

Section I. Chemical Product and Company Identification

| | | | |
|------------------|--|---------------------------------|---|
| Chemical Name | 3-Bromopropionic Acid | | |
| Catalog Number | B0645 | Supplier | TCl America 9211 N. Harborage St. Portland OR 1-800-423-8616 |
| Synonym | Not Available. | | |
| Chemical Formula | BrCH ₂ CH ₂ COOH | | |
| CAS Number | 590-92-1 | In case of Emergency Call | Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International) |

Section II. Composition and Information on Ingredients

| Chemical Name | CAS Number | Percent (%) | TLV/PEL | Toxicology Data |
|-----------------------|------------|---------------------|----------------|--|
| 3-Bromopropionic Acid | 590-92-1 | Min. 98.0 (GC,T) | Not available. | Mouse LD ₅₀ (intraperitoneal) 500 mg/kg |

Section III. Hazards Identification

| | |
|------------------------|--|
| Acute Health Effects | Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. |
| Chronic Health Effects | CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects Mouse TDLo Intraperitoneal 580 mg/kg/8 weeks intermittent. TOXIC Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria. Lung, Thorax, or Respiration - Tumors. DEVELOPMENTAL TOXICITY: Not available. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. |

Section IV. First Aid Measures

| | |
|--------------|---|
| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention. |
| Skin Contact | In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. |
| Inhalation | If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve. |
| Ingestion | DO NOT INDUCE VOMITING. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. |

Section V. Fire and Explosion Data

| | | | |
|---------------------|---|------------------|----------------|
| Flammability | Flammable. | Auto-Ignition | Not available. |
| Flash Points | 65°C (149°F). | Flammable Limits | Not available. |
| Combustion Products | These products are toxic carbon oxides (CO, CO ₂), halogenated compounds. | | |
| Fire Hazards | Not available. | | |
| Explosion Hazards | Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. | | |

Continued on Next Page

Emergency phone number (800) 424-9300

| | |
|--------------------------------------|--|
| Fire Fighting Media and Instructions | Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Consult with local fire authorities before attempting large scale fire-fighting operations. |
|--------------------------------------|--|

Section VI. Accidental Release Measures

| | |
|----------------------------|--|
| Spill Cleanup Instructions | Flammable material. Corrosive material. Harmful material. Hygroscopic material. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal. |
|----------------------------|--|

Section VII. Handling and Storage

| | |
|----------------------------------|--|
| Handling and Storage Information | FLAMMABLE. CORROSIVE. HARMFUL. HYGROSCOPIC. Keep container dry. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe dust. Never add water to this product. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, reducing agents, alkalis (bases). |
|----------------------------------|--|

Section VIII. Exposure Controls/Personal Protection

| | |
|----------------------|---|
| Engineering Controls | 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. |
| Personal Protection | Face shield. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.  |
| Exposure Limits | Not available. |

Section IX. Physical and Chemical Properties

| | | | |
|-----------------------|--|-----------------------|---|
| Physical state @ 20°C | Solid. (Light reddish-white crystal-powder.) | Solubility | Soluble in cold and hot water, diethyl ether, chloroform, benzene, and alcohol. |
| Specific Gravity | 1.48 (water=1) | | |
| Molecular Weight | 152.97 | Partition Coefficient | Not available. |
| Boiling Point | 142 °C (287.6 °F) | Vapor Pressure | Not applicable. |
| Melting Point | 63 °C (145.4 °F) | Vapor Density | Not available. |
| Refractive Index | Not available. | Volatility | Not available. |
| Critical Temperature | Not available. | Odor | Propionic acid-like |
| Viscosity | Not available. | Taste | Not available. |

Section X. Stability and Reactivity Data

| | |
|---------------------------|---|
| Stability | This material is stable if stored under proper conditions. (See Section VII for instructions) |
| Conditions of Instability | Avoid excessive heat and light. Hygroscopic; keep container tightly closed. |
| Incompatibilities | Reactive with oxidizing agents, reducing agents, strong alkalis (bases). |

Section XI. Toxicological Information

| | |
|-----------------------|--|
| RTECS Number | UE7875000 |
| Routes of Exposure | Eye Contact. Ingestion. Inhalation. Skin contact. |
| Toxicity Data | Mouse LD ₅₀ (intraperitoneal) 500 mg/kg |
| Chronic Toxic Effects | CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects Mouse TDLo Intraperitoneal 580 mg/kg/8 weeks intermittent. TOXIC Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria. Lung, Thorax, or Respiration - Tumors. DEVELOPMENTAL TOXICITY : Not available. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. |

| | |
|---------------------|--|
| Acute Toxic Effects | Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound. |
|---------------------|--|

Section XII. Ecological Information

| | |
|--------------------|----------------|
| Ecotoxicity | Not available. |
| Environmental Fate | Not available. |

Section XIII. Disposal Considerations

| | |
|----------------|---|
| Waste Disposal | Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance. |
|----------------|---|

Section XIV. Transport Information

| | |
|----------------------|---|
| DOT Classification | DOT Class 8: Corrosive material. |
| PIN Number | UN3261 |
| Proper Shipping Name | Corrosive solid acidic, organic, n.o.s. |
| Packing Group (PG) | II |
| DOT Pictograms |  |

Section XV. Other Regulatory Information and Pictograms

| | |
|-------------------------------|---|
| TSCA Chemical Inventory (EPA) | This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list. |
| WHMIS Classification (Canada) | CLASS B-4: Flammable solid. CLASS E: Corrosive solid. On DSL. |
| EINECS Number (EEC) | 209-694-1 |
| EEC Risk Statements | R10- Flammable. R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R34- Causes burns. |
| Japanese Regulatory Data | ENCS No. (2)-3937, (9)-1167 |

Section XVI. Other Information

Version 1.0
Validated on 7/24/2006.
Printed 7/24/2006.

Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.