

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Toxic compound, do not ingest or inhale. Avoid all contact with this material. Harmful compound, minimize exposure. Irritating to skin, eyes, and the respiratory system.	   

Section I. Chemical Product and Company Identification

Chemical Name	1-Bromo-3-chloropropane		
Catalog Number	B0575	Supplier	TCI America 9211 N. Harbrogate St. Portland OR 1-800-423-8616
Synonym	3-Bromopropyl Chloride		
Chemical Formula	BrCH ₂ CH ₂ CH ₂ Cl		
CAS Number	109-70-6	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
1-Bromo-3-chloropropane	109-70-6	Min. 99.0 (GC)	Not available.	Rat LD ₅₀ (oral) 930mg/kg Rat LC ₅₀ (inhalation) 5668mg/m ³ Mouse LD ₅₀ (oral) 1290mg/kg

Section III. Hazards Identification

Acute Health Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. 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 : Not available. DEVELOPMENTAL TOXICITY Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes. keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper eyelids. Seek medical attention. Treat symptomatically and supportively.
Skin Contact	After contact with skin, wash immediately with plenty of water. Gently and thorough wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.
Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. 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. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	45°C (113°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), halogenated compounds. WARNING: Highly toxic HCl gas is produced during combustion.		
Fire Hazards	No specific information is available regarding the flammability of this compound in the presence of various materials.		

Continued on Next Page

Emergency phone number (800) 424-9300

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. No additional information is available regarding the risks of explosion.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , alcohol foam or water spray. LARGE FIRE: Use alcohol foam, water spray or fog.

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Toxic material. Irritating material. Keep away from heat and sources of ignition. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. 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.
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Section VII. Handling and Storage

Handling and Storage Information	TOXIC. IRRITANT. Handle with caution and minimize exposure. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, acids.
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Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. 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	Liquid.	Solubility	Very soluble in alc., ether, and chloroform.
Specific Gravity	1.60		Soluble in methanol, oxygenated and chlorinated solvents, and in water = 2240mg/L @ 25°C.
Molecular Weight	157.44	Partition Coefficient	Not available.
Boiling Point	143°C (289.4°F)	Vapor Pressure	Not available.
Melting Point	Not available.	Vapor Density	Not available.
Refractive Index	1.4864 @ 20°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
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.
Incompatibilities	Reactive with strong oxidizing agents, strong acids and magnesium.

Section XI. Toxicological Information

RTECS Number	TX4113000
Routes of Exposure	Eye contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Rat LD ₅₀ (oral) 930mg/kg Rat LC ₅₀ (inhalation) 5668mg/m ³ Mouse LD ₅₀ (oral) 1290mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	1-Bromo-3-chloropropane's production and use in organic syntheses and in the production of pharmaceuticals may result in its release to the environment through various waste streams. If released to the atmosphere, 1-bromo-3-chloropropane will exist solely in the vapor phase in the ambient atmosphere, based on an extrapolated vapor pressure of 6.4 mm Hg at 25°C. Vapor-phase 1-bromo-3-chloropropane is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with an estimated half-life of about 18 days. An estimated Koc value of 63 suggests that 1-bromo-3-chloropropane will have high mobility in soil. Volatilization from moist soil surfaces is expected based on an estimated Henry's Law constant of 2.5X10 ⁻⁴ atm-cu m/mole. Volatilization from dry soil surfaces may be significant given the vapor pressure of this compound. Based on limited data, this compound is expected to be resistant to aerobic biodegradation in soil and water; 1-bromo-3-chloropropane, inoculated with effluent from a biological waste treatment plant, reached 3% of the theoretical BOD in 5 days. In water, 1-bromo-3-chloropropane is not expected to adsorb to sediment or particulate matter based on its Koc value. This compound should volatilize from water surfaces given its estimated Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 8 hours and 6 days, respectively. Bioconcentration in aquatic organisms should be low based on an estimated BCF value of 27. The general population may be exposed to 1-bromo-3-chloropropane via inhalation of ambient air and dermal contact with vapors and products containing 1-bromo-3-chloropropane. Occupational exposure may be through inhalation and dermal contact at workplaces where 1-bromo-3-chloropropane is produced or used.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or 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.
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Section XIV. Transport Information

DOT Classification	DOT CLASS 6.1: Toxic material.
PIN Number	UN2688
Proper Shipping Name	1-Bromo-3-chloropropane
Packing Group (PG)	III
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)	WHMIS CLASS B-3: Combustible liquid with a flash point between 35°C (100°F) and 93.3°C (200°F).
EINECS Number (EEC)	203-697-1
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

Version 1.0
Validated on 12/29/1998.
Printed 1/21/2005.

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.