

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Flammable material; avoid heat and sources of ignition. Harmful compound, minimize exposure. Irritating to skin, eyes, and the respiratory system. This material is harmful to aquatic organisms and may cause long term adverse effects to the aquatic environment.	   

Section I. Chemical Product and Company Identification

Chemical Name	1-Bromo-3-methylbutane		
Catalog Number	10504	Supplier	TCI America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	Isoamyl Bromide		
Chemical Formula	(CH ₃) ₂ CHCH ₂ CH ₂ Br		
CAS Number	107-82-4	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-methylbutane	107-82-4	Min. 96.0 (GC)	Not available.	Rat LD ₅₀ (intraperitoneal) 6150 mg/kg Mouse LD ₅₀ (intraperitoneal) 420 mg/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 or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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	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, 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	21 °C (69.8 °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.		
Fire Fighting Media and Instructions	Flammable liquid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, 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.		

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Emergency phone number (800) 424-9300

Section VI. Accidental Release Measures**Spill Cleanup Instructions**

Flammable liquid. Harmful material. Irritating material.
Keep away from heat. 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. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage**Handling and Storage Information**

FLAMMABLE. HARMFUL. IRRITANT. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe gas/fumes/ vapor/spray.
Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).

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. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

**Exposure Limits**

Not available.

Section IX. Physical and Chemical Properties**Physical state @ 20°C**

Liquid. (Clear, colorless.)

Solubility

Slightly soluble in water (0.02 g/100ml @ 16.5°C)
Miscible with Alcohol, Ether.

Specific Gravity

1.208 (water=1)

Molecular Weight

151.04

Partition Coefficient

Not available.

Boiling Point

118 to 121 °C (244.4 to 249.8 °F)

Vapor Pressure

4.6 kPa (@ 20 °C)

Melting Point

-112 °C (-169.6 °F)

Vapor Density

Not available.

Refractive Index

1.439 - 1.442

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 alkalis (bases).

Section XI. Toxicological Information**RTECS Number**

EJ6230000

Routes of Exposure

Eye Contact. Ingestion. Inhalation.

Toxicity Data

Rat LD₅₀ (intraperitoneal) 6150 mg/kg
Mouse LD₅₀ (intraperitoneal) 420 mg/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	1-Bromo-3-methylbutane's production and use as an organic synthesis reagent may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 34.6 mm Hg at 25 deg C indicates 1-bromo-3-methylbutane will exist solely as a vapor in the ambient atmosphere. Vapor-phase 1-bromo-3-methylbutane will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 5 days. If released to soil, 1-bromo-3-methylbutane is expected to have moderate mobility based upon an estimated Koc of 240. Volatilization from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of 3.46X10 ⁻² atm-cu m/mole. The potential for volatilization of 1-bromo-3-methylbutane from dry soil surfaces exists based upon its vapor pressure. No biodegradation data were located for 1-bromo-3-methylbutane. If released into water, 1-bromo-3-methylbutane is expected to adsorb to suspended solids and water surfaces is expected to be an important fate process based upon this compound's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 1 hour and 5 days, respectively. 1-Bromo-3-methylbutane is an alkyl halide which is susceptible to hydrolysis; however the rate of this reaction has not been measured. The hydrolysis half-life of an analogous compound, 1-bromopropane, is about 26 days at pH 7, which suggests 1-bromo-3-methylbutane may undergo hydrolysis. An estimated BCF of 32 suggests the potential for bioconcentration in aquatic organisms is moderate. Occupational exposure to 1-bromo-3-methylbutane may occur through inhalation and dermal contact with this compound at workplaces where 1-bromo-3-methylbutane is produced or used.

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.
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Section XIV. Transport Information

DOT Classification	DOT Class 3: Flammable liquid
PIN Number	UN2341
Proper Shipping Name	1-Bromo-3-methylbutane
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)	CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). On NDSL
EINECS Number (EEC)	203-522-9
EEC Risk Statements	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture. R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R52- Harmful to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS No. 2-67

Section XVI. Other Information

Version 1.0
Validated on 7/9/2007.
Printed 7/9/2007.

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.