TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Toxic compound, do not ingest or inhale. Avoid all contact with this material.** **Corrosive to eyes and skin on contact.** **Combustible material; avoid heat and sources of ignition.** **Lachrymator.** **Light sensitive.** **Moisture sensitive material.**	

Section I. Chemical Product and Company Identification

Chemical Name: **Benzyl Bromide**
(stabilized with Propylene Oxide)

Catalog Number	B0411
Synonym	alpha-Bromotoluene
Chemical Formula	C_7H_7Br
CAS Number	100-39-0

Supplier: TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

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
Benzyl Bromide (stabilized with Propylene Oxide)	100-39-0	Min. 98.0 (GC)	Not available.	Not available.

Section III. Hazards Identification

Acute Health Effects

Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. 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.
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 contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. 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. 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 for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

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	Combustible.	Auto-Ignition	Not available.
Flash Points	79℃ (174.2℉).	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

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Emergency phone number (800) 424-9300

SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Consult with local fire authorities before attempting large scale fire-fighting operations.

Section VI. Accidental Release Measures

Spill Cleanup Instructions

Toxic material. Corrosive material. Combustible material. Lachrymatory material. Light-sensitive material. Moisture-sensitive 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 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. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information

TOXIC. CORROSIVE. COMBUSTIBLE. LACHRYMATOR. LIGHT-SENSITIVE. MOISTURE SENSITIVE. Keep locked up.. Keep container dry. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. 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.

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

Face shield. Lab coat. Vapor 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	Liquid. (Colorless to pale yellow.)	Solubility	Miscible with ether. Soluble in benzene, carbon tetrachloride.
Specific Gravity	1.44 (water=1)		
Molecular Weight	171.03	Partition Coefficient	Log P_{ow}: 2.92
Boiling Point	199°C (390.2°F)	Vapor Pressure	0.1 kPa (@ 32°C)
Melting Point	-4°C (24.8°F)	Vapor Density	5.9 (Air = 1)
Refractive Index	1.5740 - 1.5770	Volatility	Not available.
Critical Temperature	Not available.	Odor	Pungent.
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. May decompose on exposure to light.

Incompatibilities

Reactive with oxidizing agents, alkalis (bases), moisture, alcohol, amines.

Section XI. Toxicological Information

RTECS Number

XS7965000

Routes of Exposure

Eye Contact. Ingestion. inhalation. Skin contact.

Toxicity Data

Not available.

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Benzyl bromide's production and use as a foaming and frothing agent and in organic synthesis may result in its release to the environment through various waste streams. Benzyl bromide may be release to air in automobile exhaust from vehicles using leaded gasoline containing ethylene dibromide (a lead scavenger). If released to air, a vapor pressure of 0.45 mm Hg at 25 deg C indicates benzyl bromide will exist solely as a vapor in the ambient atmosphere. Vapor-phase benzyl bromide 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 7.1 days. If released to soil, benzyl bromide is expected to have low mobility based upon an estimated Koc of 920. However, mobility in soil may be mitigated based on the hydrolysis of benzyl bromide in water. Benzyl bromide is expected to undergo chemical hydrolysis in water and moist soil based on a hydrolysis half-life of 79 mins; thus volatilization from water surfaces, bioconcentration in aquatic organisms, and sorption to suspended solids and sediment are not expected to be important fate processes. Occupational exposure to benzyl bromide may occur through inhalation and dermal contact with this compound at workplaces where benzyl bromide is produced or used. Monitoring data indicated that the general population may have been exposed to benzyl bromide via inhalation of automobile exhaust from vehicles using leaded gasoline.

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 6.1: Toxic material. DOT Class 8: Corrosive material.
PIN Number	UN1737
Proper Shipping Name	Benzyl bromide
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-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive liquid.
EINECS Number (EEC)	202-847-3
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R34- Causes burns.
Japanese Regulatory Data	ENCS No. 3-88; 3-2689

Section XVI. Other Information

Version 1.0
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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.