

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Product Identifier

Product Form: Substance

Product Name: 1-Bromo-3-chloropropane

CAS No: 109-70-6

Product Code: VOLO10032

Standard InChI: InChI=1S/C3H6BrCl/c4-2-1-3-5/h1-3H2

1.2. Intended Use of the Product

Use of the substance/mixture: For laboratory research purposes

1.3. Name, Address, and Telephone of the Responsible Party

Manufacturer

Volochem, Inc.

2600 Hilltop Dr.

Bldg B #C211

Richmond, CA 94806

T 510.748.0159

www.volochem.com

1.4. Emergency Telephone Number

Emergency Number : 510-748-0159 (9a-5p M-F)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Flammable liquids (Category 3)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 3)

Acute toxicity, Dermal (Category 5)

Specific target organ toxicity, Single exposure (Category 2)

Hazardous to the aquatic environment, Acute (Category 3)

2.2. Label Elements

GHS-US Labeling

Pictogram(s): GHS02, GHS06, GHS08



Signal word: Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H331	Toxic if inhaled.
H371	May cause damage to central nervous system and liver.
H402	Harmful to aquatic life

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Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment
P242	Use non-sparking tools.
P243	Take action to prevent static discharge.
P260	Do not breathe dust/ fume/ gas/mist/ vapors/ spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protections
P301+P330+P312	IF SWALLOWED: Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.
P303+P361+P353	IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water or shower.
P312	Call a POISON CENTER/doctor if you feel unwell.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P311	Call a POISON CENTER or doctor/physician.
P308+P311	If exposed or concerned: Call a POISON CENTER/ doctor.
P370+P378	In case of fire: Use alcohol-resistant foam, dry chemical, or carbon dioxide to extinguish.
P403+P235+P233	Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance iwth local/regiona/national/international regulations.

2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

No additional information is available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name	Synonym(s)	Product Identifiers
1-Bromo-3-chloropropane	3-Bromopropyl chloride, Trimethylene bromochloride, I-BCP	VOLO10032 CAS No. 109-70-6

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SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries After Inhalation: Tremor. Drowsiness

Symptoms/Injuries After Skin Contact: No data available

Symptoms/Injuries After Eye Contact: No data available

Symptoms/Injuries After Ingestion: See inhalation.

Chronic Symptoms: The chronic effects of this substance are unknown.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

Prolonged or repeated exposure can cause: nausea, dizziness, headache, and narcosis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Product is flammable (GHS classification). May release toxic gases during combustion.

Explosion Hazard: Product is not explosive.

Dangerous Combustion Products: Carbon oxides, nitrogen oxides, hydrogen chloride, hydrogen bromide

5.3. Advice for Firefighters

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Wear self-contained breathing apparatus for fire fighting if necessary.

5.4. NFPA Rating

Health hazard: 1

Fire: 2

Reactivity Hazard: 0

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection. Wear respiratory protection.

Emergency Procedures: Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Collect spillage. Avoid generation of dust during clean-up of spills. Clear up spills immediately and dispose of waste safely.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific End Use(s)

For laboratory research purposes

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

8.2. Exposure Controls

Appropriate Engineering Controls:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Avoid high vapor concentration. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment:



Gloves. Protective goggles. Insufficient ventilation: wear respiratory protection.

Hand Protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

Eye Protection:

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN

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Respiratory Protection:	166(EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Skin and body protection:	Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product

This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State:	Liquid
Appearance:	No data available
Odor:	No data available
Odor Threshold:	No data available
pH:	No data available
Relative Evaporation Rate (butylacetate=1):	No data available
Melting Point:	No data available
Boiling Point:	144 - 145 °C (291 - 293 °F) - lit
Flash Point:	45 °C (113 °F) - closed cup
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Flammability (solid, gas):	No data available
Vapor Pressure:	No data available
Relative Vapor Density at 20 °C:	No data available
Relative Density:	1.592 g/cm ³ at 25 °C (77 °F)
Specific Gravity:	No data available
Solubility:	insoluble
Log Pow:	2.2
Log Kow:	No data available
Viscosity, Kinematic:	No data available
Viscosity, Dynamic:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available
Explosive Limits:	No data available

9.2. Other Information No additional information available

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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:	Hazardous reactions will not occur under normal conditions.
10.2. Chemical Stability:	Product is stable under recommended storage conditions.
10.3. Possibility of Hazardous Reactions:	No data available
10.4. Conditions to Avoid:	Heat, flames and sparks
10.5. Incompatible Materials:	Strong bases, strong oxidizers, magnesium
10.6. Hazardous Decomposition Products:	Carbon oxides, hydrogen chloride gas, hydrogen bromide gas

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity: Oral LD50

LD50 Oral - rat - 930 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity), excitement, muscle weakness

Inhalation LC50

LC50 Inhalation - rat - 4 h - 5.688 mg/l

LC50 Inhalation - rat - 4 h - 6.5 mg/l

Remarks: Sense organs (nose, eye, ear, and taste), lungs, thorax, acute pulmonary edema.

Dermal LD50

No data available

Other information on acute toxicity

No data available

Skin Corrosion/Irritation: No data available

Serious Eye Damage/Irritation: No data available

Respiratory or Skin Sensitization: No data available

Germ Cell Mutagenicity: No data available

Carcinogenicity: Not classified

Reproductive Toxicity: No data available

Specific Target Organ Toxicity (Single Exposure): No data available

Specific Target Organ Toxicity (Repeated Exposure): No data available

Aspiration Hazard: No data available

Potential Health Effects

Symptoms/Injuries after Inhalation Toxic if inhaled. May cause respiratory tract irritation.

Symptoms/Injuries after Ingestion Harmful if swallowed.

Symptoms/Injuries after Skin Contact Harmful if absorbed through skin. May cause skin irritation.

Symptoms/Injuries after Eye Contact May cause eye irritation.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to fish LC50 - *Carassius auratus* (goldfish) - 75 mg/l - 24 h

12.2. Persistence and Degradability

No data available

12.3. Bioaccumulative Potential

No data available

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12.4. Mobility in Soil

No data available

12.5. Other Adverse Effects

Very toxic to aquatic life with long lasting effects.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Disposal Recommendations: Contact a licensed professional waste disposal service to dispose of this material. Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

14.1. UN Number:	1-Bromo-3-chloropropane
14.2. UN Proper Shipping Name:	2688
14.3. Transport Hazard Class(es):	6.1
14.4. Packing Group:	III
14.5.1. Marine Pollutant:	No
14.5.2. Reportable Quantity:	No
14.6.1. Toxic Inhalation Hazard:	No
14.6.2. Mode Specific Comments:	None
14.6.2.1. Ground Transportation - DOT (US):	No comments
14.6.2.2. Marine Transportation – IMDG:	No comments
14.6.2.3. Air Transportation - IATA/ICAO:	No comments

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

EPA TSCA Inventory

Listed

SARA 302 Components

SARA 302. No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components

Fire Hazard, Acute Health Hazard

15.2. US State Regulations

California Proposition 65 List 2014

Not listed

Maine Chemicals of High Concern List 2012

Not listed

Massachusetts Right to Know Hazardous Substance List 2014

Not listed

New Jersey Right to Know Hazardous Substance List 2010

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Not listed

Pennsylvania Right to Know Hazardous Substance List 2010

Not listed

SECTION 16: OTHER INFORMATION

16.1. Other Classifications

HMIS

Health Hazard: 2

Flammability: 2

Physical hazards: 0

16.2. References

International Chemical Safety Card 1665 (Validated April 18, 2007)

Revision date : 1/3/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Volochem chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household goods, 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 affiliates or 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 cannot guarantee that these are the only hazards which exist. Our SDS 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 SDS 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, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.

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