Multichem Specialities Pvt. Ltd.
1215, Dalamal Tower,
Nariman Point, Mumbai 400021, India
T: +91 2243432121
E: multichem@multichemindia.com
www.multichemindia.com

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SAFETY DATA SHEET

1-BROMO-3-CHLOROPROPANE

SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

1.1 Product identifier:	
CAS Number:-	109-70-6
EC number:	203-697-1
1.2 SYNONYMS:	• 3-Chloro-1-bromopropane • 3-Chloro-1-bromo-propane • 1-Bromo-3-chloro-propane • Trimethylene bromochloride

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 Acute toxicity, oral (Category 4) Acute toxicity, inhalation (Category 3) Germ cell mutagenicity (Category 2) Specific target organ toxicity - single exposure (respiratory system) (Category 3) Long-term (chronic) aquatic hazard (Category 3)
Hazard Pictograms:	
Signal Word:	Danger
Hazard statements:	**H302:** Harmful if swallowed. **H331:** Toxic if inhaled. **H335:** May cause respiratory irritation. **H341:** Suspected of causing genetic defects.

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	H412: Harmful to aquatic life with long lasting effects.
Precautionary Statements:	**P202:** Do not handle until all safety precautions have been read and understood. **P261:** Avoid breathing mist or vapors. **P273:** Avoid release to the environment. **P301 + P312:** IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. **P304 + P340 + P311:** IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor. **P308 + P313:** IF exposed or concerned: Get medical advice/ attention. **P405:** Store locked up. **P501:** Dispose of contents/ container to an approved waste disposal plant.
2.3 Other hazards:	
Inhalation:	can cause respiratory irritation, coughing, and potential damage to the respiratory system with prolonged exposure.
Ingestion:	can lead to nausea, vomiting, abdominal pain, and possible damage to the digestive system.
Skin Contact:	can cause irritation, redness, and potentially dermatitis or chemical burns with prolonged exposure.
Eye contact:	can cause severe irritation, redness, watering, and potential damage to the cornea.
Chronic Exposure:	may lead to respiratory problems, liver or kidney damage, and an increased risk of central nervous system effects, such as headaches or dizziness.

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Aggravation of pre-existing conditions:	Aggravation of pre-existing conditions such as respiratory disorders, skin sensitivities, or liver and kidney diseases may occur with exposure to 1-bromo-3-chloropropane.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 109-70-6 1-BROMO-3-CHLOROPROPANE
Identification number(s):	EC number: 203-697-1

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Remove contaminated clothing immediately. Wash with soap and water. Consult a physician.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. consult a physician.
After swallowing:	Rinse mouth with water. Immediately after ingestion. If conscious, make victim drink two glasses at most immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed:	The most important symptoms and effects include acute respiratory irritation, skin and eye damage, and gastrointestinal distress, with potential delayed effects such as liver, kidney, or neurological damage from chronic exposure..
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	Carbon dioxide. Water spray. Alcohol-resistant foam.
5.2 Special hazards arising from the substance or mixture:	Carbon oxides, hydrogen chloride gas, hydrogen bromide gas.
5.3 Advice for firefighters:	Wear fully protective suit, safety glasses and respiratory device. Cool tanks/drums with water spray/remove them into safety.
5.4 further information:	no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Seek medical attention.
6.2 Environmental precautions:	Do not enter this chemical into drains.

6.3 Methods and material for containment and cleaning up:	Take up spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:	For use in are with adequate ventilation. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material Do not use in confined spaces. Electrostatic discharge protection. Minimize dust generation and accumulation. Avoid ingestion and inhalation.
7.2 Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Store in a dry and dark area. Do not handle in flammable atmospheres.
Requirements to be met by storerooms and receptacles:	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 uses:	no data available

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended.
8.2 Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.
General protective and hygienic measures:	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.
Protection of hands:	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. Wash and dry hands.
	Eye protection: Required
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties General Information	
Appearance: Form:	Liquid
Colour:	Colourless to light yellow
Odour:	Mild halogenated odor
pH-value:	No data available

Melting point/Melting range:	-61°C
Boiling point/Boiling range:	156°C
Flammability (solid, gaseous):	Flammable
Ignition temperature:	295°C
Decomposition temperature:	Not determined
Self-igniting:	None
Flash point:	52°C
Danger of explosion:	None
Explosion limits: Lower:	3.5%
Explosion limits: Upper:	11.5%
Vapour pressure:	1.9 mmHg at 20°C
Density at 20 °C:	1.41 g/cm^3
Relative density:	Not determined
Vapour density:	4.9
Evaporation rate:	No data available
Solubility in / Miscibility with-·water at 20 °C:	slightly Soluble
Partition coefficient:(n-octanol/water)	2.18
Viscosity:	Not determined

SECTION 10: Stability and reactivity

10.1 Reactivity	Reactive with strong bases, acids and nucleophiles.
10.2 Chemical stability	This chemical is stable under storage conditions.
10.3 Possibility of hazardous reactions	Hazardous reactions may occur when react with strong reducing agents
10.4 Conditions to avoid	High temperatures, Heat, flames and sparks, strong reducing agents, acids and strong bases.
10.5 Incompatible materials	Strong oxidizing agents, strong acids and bases,
10.6 Hazardous decomposition products	Hydrogen chloride, hydrogen bromide, carbon monoxide.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	**LD50** (Oral, Rat): 1.100 mg/kg **LD50** (Dermal, Rabbit): 2.000 mg/kg **LC50** (Inhalation Rat): 6.5 mg/l (4hr)
Skin corrosion/Irritation:	No data available
Serious eye damage/irritation:	No data available
Respiratory damage/irritation:	No data available
Ingestion:	No data available
Germ cell mutagenicity:	Suspected of causing genetic defects.
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Specific target organ toxicity - single exposure:	May cause respiratory irritation
Specific target organ toxicity - repeated exposure:	No data available
Aspiration hazard:	No data available
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Biodegradability:	Low Biodegradable

SECTION 12: Ecological information

12.1 Toxicity **Aquatic toxicity:**	LC50(fish): no data available EC50(daphnia): 55.9 mg/l (48 hr) ErC50(algae): 847 mg/l (72hr)
12.2 Persistence and degradability:	Low Biodegradable
12.3 Bioaccumulative potential:	Moderate bioaccumulative
12.4 Mobility in soil:	Moderate mobility
12.5 Other adverse effects:	No data available

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SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	dispose of in accordance with local hazardous waste regulations
Recommended cleansing agents:	Soap and water, sand, isopropyl alcohol, neutralizing agents.

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	2688
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	1-BROMO-3-CHLOROPROPANE
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	6.1
14.4 Packing group · ADR, IMDG, IATA:	3
14.5 Environmental hazards:	None
14.6 Special precautions for user:	Handle responsibly.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is classified in listed substance as toxic liquid.
Named dangerous substances:	This substance is not listed in the annex 1 to the directive.
15.2 Chemical safety assessment:	Chemical assessment has not been carried out.

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users

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