

1-BROMO-3-CHLOROPROPANE

GHS Safety Data Sheet

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

1-CHLORO-3-BROMOPROPANE

OTHER NAMES

C3-H6-Br-Cl, "propane, 1-bromo-3-chloro-", "propane, 1-bromo-3-chloro-", "3-bromopropyl chloride", "3-bromopropyl chloride", "1, 3-chbp", "1, 3-chbp", omega-chlorobromopropane, "3-chloropropyl bromide", "3-chloropropyl bromide", "trimethylene bromide chloride", "trimethylene chlorobromide"

PROPER SHIPPING NAME

1-BROMO-3-CHLOROPROPANE

PRODUCT USE

Intermediate in organic syntheses, pharmaceuticals.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

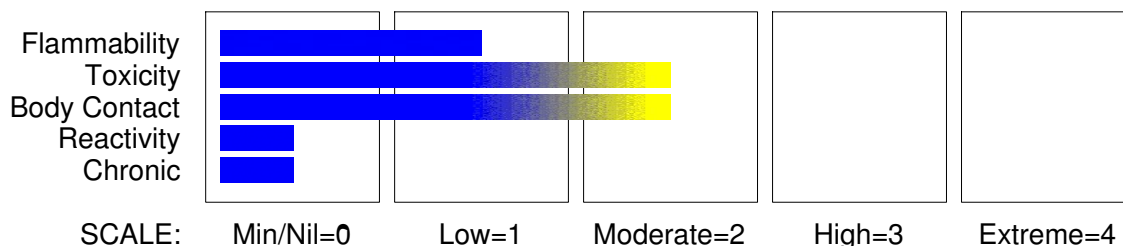
technical@sdfine.com

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HAZARD RATINGS



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Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 4
Respiratory Irritation Category 3



EMERGENCY OVERVIEW

HAZARD

WARNING
Determined by using GHS criteria:
H335 H302
May cause respiratory irritation
Harmful if swallowed

PRECAUTIONARY STATEMENTS

Prevention

Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response

Specific treatment: refer to Label or MSDS.

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
1- chloro- 3- bromopropane	109-70-6	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.
· If swallowed do NOT induce vomiting.
· If vomiting occurs, lean patient forward or place on left side (head-down position, if

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Section 4 - FIRST AID MEASURES

possible) to maintain open airway and prevent aspiration.

- Observe the patient carefully.
 - Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
 - Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
 - Seek medical advice.
- Avoid giving milk or oils.
Avoid giving alcohol.

EYE

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

NOTES TO PHYSICIAN

Do not administer sympathomimetic drugs unless absolutely necessary as material may increase myocardial irritability. No specific antidote.

Because rapid absorption may occur through lungs if aspirated and cause systematic effects, the decision of whether to induce vomiting or not should be made by an attending physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

Treatment based on judgement of the physician in response to reactions of the patient.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.

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Section 5 - FIRE FIGHTING MEASURES

- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.

Use water delivered as a fine spray to control the fire and cool adjacent area.

Use fire fighting procedures suitable for surrounding area.

DO NOT approach containers suspected to be hot.

If safe to do so, remove containers from path of fire.

FIRE/EXPLOSION HAZARD

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Decomposes on heating and produces acrid and toxic fumes of: phosgene, hydrogen chloride, hydrogen bromide and carbon monoxide (CO).

FIRE INCOMPATIBILITY

Avoid contamination with alkali metals e.g. sodium, potassium, lithium powdered metals, zinc powders.

Avoid reaction with oxidising agents.

Personal Protective Equipment

Breathing apparatus.
Chemical splash suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Clean up all spills immediately.

Wear protective neoprene gloves and chemical goggles.

Avoid breathing vapours and contact with skin and eyes.

Contain and absorb spill with sand, earth, inert material or vermiculite.

Place spilled material in clean, dry, sealable, labelled container.

MAJOR SPILLS

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.

Absorb or cover spill with sand, earth, inert material or vermiculite.

Collect recoverable product into labelled containers for recycling.

Collect residues and seal in labelled drums for disposal.

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Section 6 - ACCIDENTAL RELEASE MEASURES

If contamination of drains or waterways occurs, advise emergency services.
After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+ X + X 0 +

+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Use good occupational work practice.
Avoid breathing vapours and contact with skin and eyes.
When handling, DO NOT eat, drink or smoke.
Wear protective clothing and gloves when handling containers.
Use in a well-ventilated area.
until atmosphere has been checked.
Avoid physical damage to containers.
Keep containers securely sealed when not in use.
Always wash hands with soap and water after handling. Work clothes should be laundered separately.

SUITABLE CONTAINER

- Lined metal can, lined metal pail/ can.
 - Plastic pail.
 - Polyliner drum.
 - Packing as recommended by manufacturer.
 - Check all containers are clearly labelled and free from leaks.
- DO NOT use unlined steel containers.
DO NOT USE brass or copper containers / stirrers.

STORAGE INCOMPATIBILITY

Segregate from oxidising agents.

STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.
Store in a cool, dry place.
Store away from incompatible materials.
DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
Keep containers securely sealed.
Protect containers against physical damage.
Check regularly for spills and leaks.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- 1- chloro- 3- bromopropane:

CAS:109- 70- 6

MATERIAL DATA

No exposure limits set by NOHSC or ACGIH.

OEL STEL (Russia): 3 mg/m³

PERSONAL PROTECTION



EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Butyl rubber gloves.

Neoprene rubber gloves.

OTHER

- Eyewash unit.
 - Barrier cream.
 - Impervious protective clothing.
- Ensure there is ready access to a safety shower.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level
ppm (volume)

Maximum Protection
Factor

Half- face Respirator

Full- Face Respirator

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

1000	10	A- AUS	-
1000	50	-	A- AUS
5000	50	Airline *	-
5000	100	-	A- 2
10000	100	-	A- 3
	100+		Airline**

* - Continuous Flow

** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Use in a well-ventilated area.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:

solvent, vapours, degreasing etc., evaporating from tank (in still air)

aerosols, fumes from pouring operations,

intermittent container filling, low speed

conveyer transfers, welding, spray drift,

plating acid fumes, pickling (released at low velocity into zone of active generation)

direct spray, spray painting in shallow booths,

drum filling, conveyer loading, crusher dusts,

gas discharge (active generation into zone of rapid air motion)

grinding, abrasive blasting, tumbling, high

speed wheel generated dusts (released at high

initial velocity into zone of very high rapid air motion).

Air Speed:

0.25- 0.5 m/s (50- 100 f/min)

0.5- 1 m/s (100- 200 f/min.)

1- 2.5 m/s (200- 500 f/min)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used. If risk of inhalation or overexposure exists, wear SAA approved respirator or work in fume hood.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colourless liquid; does not mix with water.

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Sinks in water.

Molecular Weight: 157.44

Melting Range (°C): <- 50

Solubility in water (g/L): Immiscible

pH (1% solution): Not applicable.

Volatile Component (%vol): Approx 100

Relative Vapour Density (air=1): >1

Lower Explosive Limit (%): Not available

Autoignition Temp (°C): Not available

State: Liquid

Boiling Range (°C): 144- 145

Specific Gravity (water=1): 1.592

pH (as supplied): Not applicable

Vapour Pressure (kPa): Not available

Evaporation Rate: Slow

Flash Point (°C): None

Upper Explosive Limit (%): Not available

Decomposition Temp (°C): Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Presence of incompatible materials.

Stable under normal storage conditions.

Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

Ingestion may result in nausea, pain, vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

Considered an unlikely route of entry in commercial/industrial environments.

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Section 11 - TOXICOLOGICAL INFORMATION

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

The material is not thought to be a skin irritant (i.e. is unlikely to produce irritant dermatitis as described in EC Directives using animal models). Temporary discomfort, however, may result from prolonged dermal exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Toxic effects may result from skin absorption.

The material may accentuate any pre-existing skin condition.

Open cuts, abraded or irritated skin should not be exposed to this material.

INHALED

Inhalation may produce health damage*.

Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation.

Inhalation hazard is increased at higher temperatures.

Acute effects from inhalation of high vapour concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea.

Depression of the central nervous system is the most outstanding effect of most halogenated aliphatic hydrocarbons. Inebriation and excitation, passing into narcosis, is a typical reaction. In severe acute exposures there is always a danger of death from respiratory failure or cardiac arrest due to a tendency to make the heart more susceptible to catecholamines (adrenalin).

In the case of iodised and brominated compounds, exposure effects cannot be described by simple central nervous system depression produced by other halogenated aliphatic hydrocarbons. Headache, nausea, ataxia (loss of muscle co-ordination), tremors, speech difficulties, visual disturbances, convulsions, paralysis, delirium, mania and apathy are all evidence of additional effects.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by inhalation of vapour and skin contact/absorption.

Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 930 mg/kg

Inhalation (rat) LC50: 5668 mg/m³

Oral (mouse) LD50: 1290 mg/kg

Somnolence, excitement, muscle weakness recorded.

IRRITATION

Nil Reported

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Section 12 - ECOLOGICAL INFORMATION

No data for 1-chloro-3-bromopropane.

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: TOXIC
HAZCHEM: 2[Z]

UNDG:

Dangerous Goods Class:	6.1	Subrisk:	None
UN Number:	2688	Packing Group:	III
Shipping Name: 1-BROMO-3-CHLOROPROPANE			

Air Transport IATA:

ICAO/IATA Class:	6.1	ICAO/IATA Subrisk:	None
UN/ID Number:	2688	Packing Group:	III
ERG Code:	6L		
Shipping name: 1-BROMO-3-CHLOROPROPANE			

Maritime Transport IMDG:

IMDG Class:	6.1	IMDG Subrisk:	None
UN Number:	2688	Packing Group:	III
EMS Number:	F- A, S- A		
Shipping name: 1-BROMO-3-CHLOROPROPANE			

Section 15 - REGULATORY INFORMATION

REGULATIONS

1-chloro-3-bromopropane (CAS: 109-70-6) is found on the following regulatory lists;
OECD Representative List of High Production Volume (HPV) Chemicals

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Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
1- chloro- 3- bromopropane	109- 70- 6	Xn; R22 Carc3; R40

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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