

1-BROMO-2-CHLOROETHANE

GHS Safety Data Sheet

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

1-BROMO-2-CHLOROETHANE

OTHER NAMES

C2-H4-Br-Cl, ClCH2CH2Br, "ethane, 1-bromo-2-chloroethane", sym-chlorobromoethane, sym-bromochloroethane, 1-chloro-2-bromoethane, "ethylene chlorobromide"

PROPER SHIPPING NAME

TOXIC LIQUID, ORGANIC, N.O.S.(contains 1-bromo-2-chloroethane)

PRODUCT USE

Solvent for cellulose esters and ethers; intermediate; fumigant for fruits and vegetables.
Fragrance

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V.Ind.Estate,

248, Worli Road,

Mumbai- 400030, India

www.sdfine.com

Telephone: 91- 22 24959898/99

Fax: 91- 22 2493 7232

Email: technical@sdfine.com

Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity Category 3



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria

H301 Toxic if swallowed.

PRECAUTIONARY STATEMENTS

Prevention

Code

P264

P270

Phrase

Wash ... thoroughly after handling.

Do not eat, drink or smoke when using this product.

Response

Code

P301+P310

P330

Phrase

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Rinse mouth.

Storage

Code

P405

Phrase

Store locked up.

Disposal

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Section 2 - HAZARDS IDENTIFICATION

Code	Phrase
P501	Dispose of contents/container to ...

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
1- bromo- 2- chloroethane	107-04-0	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if 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.
- If poisoning occurs, contact a doctor or Poisons Information Centre.
- 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.
- Seek medical attention without delay; 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 contact occurs:
- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

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.

NOTES TO PHYSICIAN

- for intoxication due to Freons/ Halons;
 - A: Emergency and Supportive Measures
 - Maintain an open airway and assist ventilation if necessary
 - Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
 - Monitor the ECG for 4-6 hours
 - B: Specific drugs and antidotes:
 - There is no specific antidote.
- for poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.

DO NOT administer sympathomimetic drugs as they may cause ventricular arrhythmias.

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

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Section 4 - FIRST AID MEASURES

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.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

- 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 course.
- Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD

- Non combustible.
 - Not considered to be a significant fire risk.
 - Expansion or decomposition on heating may lead to violent rupture of containers.
 - Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).
- Decomposes on heating and produces acrid and toxic fumes of: carbon dioxide (CO₂), hydrogen bromide, hydrogen chloride, phosgene, other pyrolysis products typical of burning organic material.
- May emit poisonous fumes.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- DO NOT use unlined steel containers.
- DO NOT USE brass or copper containers / stirrers.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

PACKAGING MATERIAL INCOMPATIBILITIES

Chemical Name	Container Type
	" Acetal (Delrin)" , " Cast iron" , Neoprene

SUITABLE CONTAINER

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.

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Section 7 - HANDLING AND STORAGE

- Packing as recommended by manufacturer.
- For low viscosity materials
- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure. <</>.

STORAGE INCOMPATIBILITY

■ Segregate from:

- powdered metals such as aluminium, zinc and
- alkali metals such as sodium, potassium and lithium.

May attack, soften or dissolve rubber, many plastics, paints and coatings.

Haloalkanes:

- are highly reactive:some of the more lightly substituted lower members are highly flammable; the more highly substituted may be used as fire suppressants, not always with the anticipated results.
- may react with the lighter divalent metals to produce more reactive compounds analogous to Grignard reagents.
- may produce explosive compounds following prolonged contact with metallic or other azides
- may react on contact with potassium or its alloys - although apparently stable on contact with a wide range of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact; severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures .
- Segregate from alcohol, water.
- Avoid strong bases.
- Avoid magnesium, aluminium and their alloys, brass and steel.
- Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- 1- bromo- 2- chloroethane:

CAS:107- 04- 0

MATERIAL DATA

1-BROMO-2-CHLOROETHANE:

■ Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations.

PERSONAL PROTECTION



RESPIRATOR

- Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with side shields.
- 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], [AS/NZS 1336 or national equivalent].

HANDS/FEET

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:.

- Neoprene rubber gloves.

OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

ENGINEERING CONTROLS

■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

liquid.

PHYSICAL PROPERTIES

Liquid.

State	Liquid	Molecular Weight	143.42
Melting Range (°C)	- 16.6	Viscosity	Not Available
Boiling Range (°C)	106- 107	Solubility in water (g/L)	Immiscible
Flash Point (°C)	Not Available	pH (1% solution)	Not applicable.
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°C)	Not available	Vapour Pressure (kPa)	Not available
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	1.723
Lower Explosive Limit (%)	Not available	Relative Vapour Density (air=1)	>1
Volatile Component (%vol)	Approx 100	Evaporation Rate	Slow

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
 - Product is considered stable.
 - Hazardous polymerisation will not occur.
- For incompatible materials - refer to Section 7 - Handling and Storage.*

Section 11 - TOXICOLOGICAL INFORMATION

Health hazard summary table:

Acute toxicity	Acute Tox. (oral) 3
Skin corrosion/irritation	Not applicable
Serious eye damage/irritation	Not applicable
Respiratory or skin sensitization	Not applicable
Germ cell mutagenicity	Not applicable
Carcinogenicity	Not applicable
Reproductive toxicity	Not applicable
STOT- single exposure	Not applicable

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Section 11 - TOXICOLOGICAL INFORMATION

STOT- repeated exposure
Aspiration hazard

Not applicable
Not applicable

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Accidental ingestion of the material may be damaging to the health of the individual.

EYE

- Although the liquid 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

- The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.
- The material is unlikely to produce an irritant dermatitis as described in EC Directives .
- Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
- Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

- Inhalation of vapours may cause drowsiness and dizziness.
- This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.
- Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
 - There is some evidence to suggest that the material can cause respiratory irritation in some persons.
- The body's response to such irritation can cause further lung damage.
- Inhalation hazard is increased at higher temperatures.
 - 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 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

- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
- There is some evidence from animal testing that exposure to this material may result in toxic effects to the unborn baby. Chronic intoxication with ionic bromides, historically, has resulted from medical use of bromides but not from environmental or occupational exposure; depression, hallucinosis, and schizophreniform psychosis can be seen in the absence of other signs of intoxication. Bromides may also induce sedation, irritability, agitation, delirium, memory loss, confusion, disorientation, forgetfulness (aphasias), dysarthria, weakness, fatigue, vertigo, stupor, coma, decreased appetite, nausea and vomiting, diarrhoea, hallucinations, an acne like rash on the face, legs and trunk, known as bronchoderma (seen in 25-30% of case involving bromide ion), and a profuse discharge from the nostrils (coryza).

TOXICITY AND IRRITATION

No data for this material.

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
1- bromo- 2- chloroethane	HIGH	No Data Available	LOW	HIGH

continued...

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Section 13 - DISPOSAL CONSIDERATIONS

■ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: TOXIC

HAZCHEM:

2X

Land Transport UNDG:

Class or division:	6.1	Subsidiary risk:	None
UN No.:	2810	UN packing group:	III
Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S. (contains 1-bromo-2-chloroethane)			

Air Transport IATA:

ICAO/IATA Class:	6.1	ICAO/IATA Subrisk:	None
UN/ID Number:	2810	Packing Group:	III
Special provisions:	A3		

Shipping name: TOXIC LIQUID, ORGANIC, N.O.S. (contains 1-bromo-2-chloroethane)

Maritime Transport IMDG:

IMDG Class:	6.1	IMDG Subrisk:	None
UN Number:	2810	Packing Group:	III
EMS Number:	F- A, S- A	Special provisions:	223 274
Limited Quantities:	5 L		
Shipping name: TOXIC LIQUID, ORGANIC, N.O.S. (contains 1-bromo-2-chloroethane)			

Section 15 - REGULATORY INFORMATION

REGULATIONS

1-bromo-2-chloroethane (CAS: 107-04-0) is found on the following regulatory lists;

"Acros Transport Information", "OECD List of High Production Volume (HPV) Chemicals", "United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments", "WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established"

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
1- bromo- 2- chloroethane	107- 04- 0	Carc3; R40

continued...

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Section 16 - OTHER INFORMATION

Rep3; R63 T;
R25 Xi; R38

- Classification of the preparation and its individual components has drawn on official and authoritative sources using available literature references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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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