



MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification

1.1 Product identifiers

Product Name : Bromoethane
Cat No.: AC154210000; AC154210010; AC154210025; AC154215000
CAS No. : 74-96-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended uses : Laboratory chemicals
Uses advised against: Food, drug, pesticide or biocidal product use.

1.3 Details of the supplier of the safety data sheet

Company : Krishna Solvechem Limited.
B/503, Shayog, S. V. Road,
Kandivali (West), Mumbai – 400067. India.
Telephone : +91-22-6123 0222
Email : exports@kscl.co.in

1.4 Emergency telephone number

Emergency Phone : +91-8657457330

SECTION 2: Hazards identification

2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	(Category 2)
Acute oral toxicity	(Category 4)
Acute Inhalation Toxicity - vapors	(Category 4)
Carcinogenicity	(Category 2)

2.2 Label elements

Pictogram :



Signal word

Danger

Hazard statement (s)

Highly flammable liquid and vapor



Precautionary statement (s)

Prevention

Suspected of causing cancer
Harmful if swallowed or if inhaled

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Inhalation :

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician if you feel unwell

IF ON SKIN (or hair):

If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Ingestion:

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage:

Store locked up Store in a well-ventilated place.
Keep cool.



Hazards not otherwise classified (HNOC)	Disposal: Dispose of contents/container to an approved waste disposal plant
	Harms public health and the environment by destroying ozone in the upper atmosphere.

SECTION 3: Composition / information on ingredients

3.1

Component	CAS-No	Weight %
Ethyl bromide	74-96-4	<=100

SECTION 4: First aid measures

4.1 Description of first aid measures

General Advice:	If symptoms persist, call a physician.
If inhalation :	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
In case of skin contact :	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
In case of eye contact :	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Ingestion :	Clean mouth with water and drink afterwards plenty of water.
4.2 Most important symptoms and effects :	Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
4.3 Notes to Physician :	Treat symptomatically

SECTION 5: Firefighting effects

5.1 Extinguishing media

Suitable extinguishing media :	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media: :	No information available
5.2 Flash Point :	-23 °C / -9.4 °F
Method :	No information available



Autoignition Temperature:	510 °C / 950 °F
Explosion Limits:	
Upper	11.3%
Lower	6.7%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available
Specific Hazards Arising from the Chemical :	Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.
Hazardous Combustion Products :	Carbon monoxide (CO). Carbon dioxide (CO ₂). Hydrogen halides

5.4 Protective Equipment and Precautions for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
<u>NFPA:</u>	Health	Flammability	Instability	Physical hazards
	2	3	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges
6.2 Environmental precautions
Should not be released into the environment.
6.3 Methods and materials for containment and cleaning up
Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.



7.2 Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame. Flammables area. Incompatible Materials. Strong oxidizing agents. Strong bases. Metals.

SECTION 8: Exposure controls/personal protection

8.1 Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Ethyl bromide	TWA: 5 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 890 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 1110 mg/m ³ TWA: 200 ppm TWA: 890 mg/m ³	IDLH: 2000 ppm	TWA: 5 ppm

Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

8.2 Exposure controls

Personal protective equipment -

Eye / Face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type

Low boiling organic solvent. Type AX Brown. Conforming to EN371

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice..

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Light yellow Liquid
b) Odour	Petroleum distillates
c) Odour Threshold	No information available
d) pH	No information available
e) Melting point / freezing point	-119 °C / -182.2 °F
f) Initial boiling point and	37 - 40 °C / 98.6 - 104 °F



boiling range	
g) Flash point	-23 °C / -9.4 °F
h) Evaporation rate	No information available
i) Flammability (solid, gas)	Not applicable
j) Upper/lower flammability or explosive limits	Upper: 11.3% Lower: 6.7%
k) Vapour pressure	400 mmHg @ 20 °C
l) Vapour density	3.76
m) Specific Gravity	1.460
n) Solubility	Soluble in water
o) Partition coefficient: n octanol/water	No data available
p) Auto-ignition temperature	510 °C / 950 °F
q) Decomposition temperature	No information available
r) Viscosity	0.38 cP at 20 °C
s) Molecular formula	C ₂ H ₅ Br
t) Molecular Weight	108.97

SECTION 10: Stability and Reactivity

10.1 Reactive Hazard :	None known, based on information available
10.2 Chemical stability :	Stable under normal conditions.
10.3 Possibility of hazardous reactions :	None under normal processing.
10.4 Conditions to avoid :	Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.
10.5 Incompatible materials:	Strong oxidizing agents, Strong bases, Metals
10.6 Hazardous decomposition products :	Carbon monoxide (CO), Carbon dioxide (CO ₂), Hydrogen halides
10.7 Hazardous Polymerization	Hazardous polymerization does not occur



SECTION 11: Toxicological information

11.1

Information on toxicological effects

Acute toxicity:

Product Information:

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl bromide	LD50 = 1350 mg/kg (Rat)	Not listed	LC50 = 20.9 mg/L (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation : No information available
Sensitization: No information available
Carcinogenicity : The table below indicates whether each agency has Any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Ethyl bromide	74-96-4	Not listed	Not listed	A3	Not listed	A3

ACGIH: (American Conference of Governmental IndustrialHygienists)

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen A3 - Animal Carcinogen

Mexico - Occupational Exposure Limits – Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen A2 - Suspected Human Carcinogen A3 -

Confirmed Animal Carcinogen A4 - Not Classifiable as a Human Carcinogen A5 –

Not Suspected as a Human Carcinogen

Mutagenic Effects: No information available.

Reproductive Effects: No information available.

Developmental Effects : No information available.

Teratogenicity: No information available.

STOT - single exposure : None known

STOT - repeated exposure: None known

Aspiration hazard : No information available.

Symptoms / effects, both acute and delayed: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Endocrine Disruptor Information : No information available

Other Adverse Effects : The toxicological properties have not been fully investigated.



SECTION 12: Ecological information

12.1

Ecotoxicity:

Product is known to contribute to the destruction of the ozone layer

12.2 Persistence and degradability: Persistence is unlikely based on information Available.

Bioaccumulation/ Accumulation	No information available
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12.3 Mobility: Will likely be mobile in the environment due to its volatility.
Log Pow: 1.7

SECTION 13: Disposal considerations

13.1 Waste treatment methods: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

14.1 UN number :

DOT: UN1891	TDG: UN1891
IATA: UN1891	IMDG/IMO: UN1891

14.2 UN proper shipping name

DOT : ETHYL BROMIDE

TDG : ETHYL BROMIDE

IMDG : ETHYL BROMIDE

IATA : ETHYL BROMIDE

14.3 Transport hazard class(es) DOT: 3 TDG: 3 IMDG: 3 IATA: 3

14.4 Packaging group: DOT: II TDG: II IMDG: II IATA: II

SECTION 15: Regulatory information

15.1 United states of America Inventory:

Component	CAS-No	TSCA	TSCA Inventory notification Active/Inactive	TSCA - EPA Regulatory Flags
Ethyl bromide	74-96-4	X	ACTIVE	-

Legend:



TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories:

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Ethyl bromide	74-96-4	X	-	200-825-8	X	X	X	X	X	KE-03666

U.S. Federal Regulations

SARA 313

Not applicable

SARA 311/312 Hazard Categories

See section 2 for more information

CWA (Clean Water Act)

Not applicable

Clean Air Act

Not applicable

OSHA - Occupational Safety and Health Administration

Not applicable

CERCLA

Not applicable

California Proposition 65

This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Ethyl bromide	74-96-4	Carcinogen	96 µg/day	Carcinogen

15.2 U.S. State Right-to-Know Regulations:

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ethyl bromide	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): N



DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security - This product does not contain the any DHS Chemicals.

Other International Regulations

Mexico – Grade No information available

Authorization/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Ethyl bromide	74-96-4	-	Use restricted. See item 75. (see link for restriction details)	-

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Ethyl bromide	74-96-4	Listed	Not applicable	Annex II Part B substance : ODP = 0.1 - 0.2	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Ethyl bromide	74-96-4	Not applicable	Not applicable	Not applicable	Annex I - Y45



SECTION 16: Other information

16.1 Prepared By:	Regulatory affairs Krishna Solvechem Limited
Email:	exports@kscl.co.in
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Revision Summary:	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 C FR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

16.2 Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.