MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification

1.1 Product identifiers

Product Name : **1,2-Dibromoethane**

Cat No.: **AC112790000; AC112790010; AC112790025; AC112790100; AC112790250; AC112795000**

CAS No. : 106-93-4

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, Sahayog, 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)

Acute oral toxicity	(Category 3)
Acute dermal toxicity	(Category 3)
Skin Corrosion/Irritation	(Category 2)
Serious eye damage/Eye irritation	(Category 2)
Specific target organ toxicity (single exposure)	(Category 3)
Target Organs - Respiratory system.	

2.2 Label elements

Pictogram :

Signal word Danger

Hazard statement (s) Toxic if swallowed or in contact with skin

Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation
May cause cancer

Precautionary statement (s)

Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not eat, drink or smoke when using this product
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

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
Wash contaminated clothing before reuse

Eyes:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

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

Storage:
Store locked up Store in a well-ventilated place.
Keep container tightly closed

		Disposal: Dispose of contents/container to an approved waste disposal plant
	Hazards not otherwise classified (HNOC)	Toxic to aquatic life with long lasting effects

SECTION 3: Composition / information on ingredients

3.1

Component	CAS-No	Weight %
Ethylene dibromide (1,2-dibromoethane)	106-93-4	<100

SECTION 4: First aid measures

4.1	**Description of first aid measures**	
	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. Call a physician immediately.
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: Firefigh effects

5.1	**Extinguishing media**	
	Suitable extinguishing media	Water spray, carbon dioxide (CO2), dry chemical, chemical foam.
	Unsuitable Extinguishing Media: :	No information available
5.2	**Flash Point :** **Method :**	>104 °C / >219.2 °F No information available

	Autoignition Temperature:	No information available
	Explosion Limits:	
	Upper	No data available
	Lower	No data available
	Sensitivity to Mechanical Impact	No information available
	Sensitivity to Static Discharge	No information available
	Specific Hazards Arising from the Chemical :	Keep product and empty container away from heat and sources of ignition.
	Hazardous Combustion Products :	Carbon monoxide (CO). Carbon dioxide (CO2). 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.

NFPA:

Health	Flammability	Instability	Physical hazards
0	0	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.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Handle product only in closed system or provide appropriate exhaust ventilation.

7.2 Conditions for safe storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Protect from direct sunlight. Do not store in metal containers. Incompatible Materials. Strong bases.

SECTION 8: Exposure controls/personal protection

8.1 Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Ethylene dibromide (1,2-Dibromoethane)	Skin	(Vacated) TWA: 20 ppm Ceiling: 30 ppm (Vacated) STEL: 50 ppm (Vacated) Ceiling: 100 ppmTWA: 20 ppm	IDLH: 46 ppm TWA: 0.045 ppm Ceiling: 0.13 ppm	

Engineering Measures

Ensure that eyewash stationsand 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 StandardEN 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:

Organic gases and vapors filter. Type A. Brown. Conforming to EN14387

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	Colorless Liquid
b) Odour	Sweet
c) Odour Threshold	No information available
d) pH	No information available
e) Melting point / freezing point	9 - 10 °C / 48.2 - 50 °F
f) Initial boiling point and	131 - 132 °C / 267.8 - 269.6 °F

boiling range	
g) Flash point	> 104 °C / > 219.2 °F
h) Evaporation rate	No information available
i) Flammability (solid, gas)	Not applicable
j) Upper/lower flammability or explosive limits	No data available No data available
k) Vapour pressure	11 mmHg @ 25 °C
l) Vapour density	6.5 (Air = 1.0)
m) Specific Gravity	2.173
n) Solubility	No information available
o) Partition coefficient: n octanol/water	No data available
p) Auto-ignition temperature	No information available
q) Decomposition temperature	> 340°C.
r) Viscosity	No information available
s) Molecular formula	C2 H4 Br2
t) Molecular Weight	187.86

SECTION 10: Stability and Reactivity

10.1	**Reactive Hazard :**	None known, based on information available
10.2	**Chemical stability :**	Decomposes in contact with water. heat sensitive. Light sensitive. Decomposes onexposure to light.
10.3	**Possibility of hazardous reactions :**	None under normal processing.
10.4	**Conditions to avoid :**	Exposure to light. Incompatible products. Exposure to moisture.
10.5	**Incompatible materials:**	Strong bases, Ammonia, Metals
10.6	**Hazardous decomposition products :**	Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen halides
10.7	**Hazardous Polymerization**	No information available

SECTION 11: Toxicological information

11.1

Information on toxicological effects

Acute toxicity:

Product Information:

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethylene dibromide (1,2-Dibromoethane)	LD50 = 117 mg/kg (Rat)	LD50 = 300 mg/kg (Rabbit)	LC50 > 200 ppm (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 ha Any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	Group 2A	Reasonably Anticipated	A3	X	A3

Mutagenic Effects: No information available.

Reproductive Effects: No information available.

Developmental Effects : No information available.

Teratogenicity: No information available.

STOT - single exposure : Respiratory system

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 : EU-Endocrine Disrupters Candidate list : Group III Chemical

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

SECTION 12: Ecological information

12.1

Ecotoxicity:

The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ethylene dibromide (1,2-Dibromoethane)	Not listed	LC50: 27.6 - 37.4 mg/L, 96h flow-through (Oryziaslatipes)	EC50 = 735 mg/L 5 min	Not listed

12.2 Persistence and degradability: Persistence is unlikely

Bioaccumulation/ Accumulation No information available

12.3 Mobility: Will likely be mobile in the environment due to its water solubility. Log pow : 1.93

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 : UN1605 TDG : UN1605

IATA : UN1605 IMDG : UN1605

14.2 UN proper shipping name

DOT : ETHYLENE DIBROMIDE

TDG : ETHYLENE DIBROMIDE

IMDG : ETHYLENE DIBROMIDE

IATA : ETHYLENE DIBROMIDE

14.3 Transport hazard class(es)	DOT: 6.1	TDG: 6.1	IMDG: 6.1	IATA: 6.1
14.4 Packaging group:	D0T: I	TDG: I	IMDG: I	IATA: I

SECTION 15: Regulatory information

15.1 United states of America Inventory:

Component	CAS-No	TSCA	TSCA Inventory notification Active/Inactive	TSCA - EPA Regulatory Flags
Ethylene dibromide (1,2-dibromoethane	106-93-4	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
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	X	-	203-444-5	X	X	X	X	X	KE-05-0447

U.S. Federal Regulations

SARA 313

Component	CAS No	Weight %	SARA 313 - Threshold Values %
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	<100	0.1

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Ethylene dibromide (1,2-Dibromoethane)	X	1 lb	-	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Ethylene dibromide (1,2-Dibromoethane)	X		-

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and LiabilityAct (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Ethylene dibromide (1,2-Dibromoethane)	1 lb	-

California Proposition 65 This product contains the following 65chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	Carcinogen Developmental Male Reproductive	0.2 µg/day3 µg/day	Developmental Carcinogen

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

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ethylene dibromide (1,2-Dibromoethane)	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y

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 - SubstancesSubject to Authorization	REACH (1907/2006) - Annex XVII - Restrictionson Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very HighConcern (SVHC)
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	-	Use restricted. see item 28. Use restricted. See item 75.	-

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)
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantitiesfor Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantitiesfor Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.5 tonne	2 tonne	X	Annex I - Y45

SECTION 16: Other information

16.1	**Prepared By:**	Regulatory affairs Krishna Solvechem Limited
	Email:	exports@kscl.co.in
	Creation Date:	20-Sep-2011
	Revision Date:	06-Jan-2023
	Print Date:	06-Jan-2023
	Revision Summary:	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under29 C FR 1910.1200 to align with the Globally Harmonized System ofClassification 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.