



MATERIALS SAFETY DATA SHEET (MSDS) Ethylene Dichloride (C₂H₄Cl₂)	MSDS Number:	
	Version number:	
	Date issued:	
	Page No:	

1. Product Identification

Product Name	Ethylene dichloride
Synonyms	1,2-Dichloroethane, Ethylene chloride
CAS No	107-06-2
Recommended Use	Laboratory chemicals.
Uses advised against	Food, drug, pesticide or biocidal product use.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer Supplier	
E-Mail	Entity 1 Made by India
Contact Person	
Emergency Telephone	

2. Hazard(s) identification

OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard(29 CFR 1910.1200).
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Classification of the substance or mixture

Flammable Liquids	Category 2
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Acute Toxicity (inhalation)	Category 3
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/ Eye Irritation	Category 2
Carcinogenicity	Category 1
Specific Target Organ Toxicity (Single Exposure) (Respiratory tract irritation)	Category 3

GHS label elements	
Hazard pictograms	
Signal word	Danger
Hazard statements	Highly flammable liquid and vapor. May form explosive mixtures with air. Toxic if inhaled. Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation. May cause cancer.
<u>Precautionary statements</u>	
General	Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.
Response	IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs, Get medical attention. 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 attention.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.



Hazards not otherwise classified	None known.
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3. Composition and ingredient information

Chemical name	CAS number	%
Ethylene Dichloride	107-06-2	72

4. First-aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control centre immediately.
Most important symptoms and effects	Difficulty in breathing. May cause cardiac arrhythmia. May cause central nervous system depression: Symptoms may include tightness in the chest, flushing, headache, nausea, vomiting, respiratory depression, weakness, irregular heartbeat, abdominal pain, convulsions, and shock.

5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.



Unsuitable extinguishing media	Do not use water jet
Special hazards arising from the substance or mixture	Carbon oxides, Hydrogen chloride gas
Advice for firefighters	Wear self-contained breathing apparatus for firefighting if necessary
Further information	Use water spray to cool unopened containers.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Do not breathe vapor or mist.
Other information	Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoffwater. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice.
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	Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Do not breathe vapor or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up.
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8. Exposure Controls/ Personal Protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Ethylene Dichloride	<p>ACGIH TLV (United States, 3/2012). TWA: 40 mg/m³ 8 hours. TWA: 10 ppm 8 hours.</p> <p>NIOSH REL (United States, 1/2013). STEL: 8 mg/m³ 15 minutes. STEL: 2 ppm 15 minutes. TWA: 4 mg/m³ 10 hours. TWA: 1 ppm 10 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). STEL: 8 mg/m³ 15 minutes. STEL: 2 ppm 15 minutes. TWA: 4 mg/m³ 8 hours. TWA: 1 ppm 8 hours.</p> <p>OSHA PEL Z2 (United States, 11/2006). AMP: 200 ppm 5 minutes. CEIL: 100 ppm TWA: 50 ppm 8 hours.</p>



Appropriate engineering controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection measures	
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection. chemical splash goggles.
Skin protection	
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear antistatic protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.



9. Physical and chemical properties

Physical State	Liquid
Appearance	Colourless
Odor	sweet
Odor Threshold	400 ppm
pH	No information available
Melting Point/Range	-35 °C / -31 °F
Boiling Point/Range	81 - 85 °C / 177.8 - 185 °F
Flash Point	13 °C / 55.4 °F
Evaporation Rate	6.5 (Butyl Acetate = 1.0)
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	15.9 vol %
Lower	6.2 vol %
Vapor Pressure	65 mmHg @ 29 °C
Vapor Density	3.4
Specific Gravity	1.250
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	440 °C / 824 °F
Decomposition Temperature	No information available
Viscosity	0.8 mPa s at 20 °C
Molecular Formula	C ₂ H ₄ Cl ₂
Molecular Weight	98.96

10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.



Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological information

Acute Toxicity

Product Information - Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethylene dichloride	625 mg/kg (Rat) 413 mg/kg (Mouse)	2800 mg/kg (Rabbit)	28.79 mg/L (Rat) 1h 7.8 mg/l (Rat) 4h

Toxicologically Synergistic Products	No information available
Delayed and immediate effects as well as chronic effects from short and long-term exposure	
Irritation	Irritating to eyes, respiratory system and skin
Sensitization	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA
Ethylene dichloride	07-06-2	Group 2B	Reasonably Anticipated	Not listed	Not listed

IARC (International Agency for Research on Cancer)	IARC (International Agency for Research on Cancer) Group 1 - Carcinogenic to Humans Group 2A - Probably Carcinogenic to Humans Group 2B - Possibly Carcinogenic to Humans
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NTP: (National Toxicity Program)	NTP: (National Toxicity Program) Known - Known Carcinogen Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
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Mutagenic Effects	No information available
Reproductive Effects.	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available
STOT - single exposure	Respiratory system Central nervous system (CNS)
STOT - repeated exposure	Kidney Liver Heart Blood
Aspiration hazard	No information available
Symptoms / effects, both acute and delayed	May cause central nervous system depression: Symptoms may include tightness in the chest, flushing, headache, nausea, vomiting, respiratory depression, weakness, irregular heartbeat, abdominal pain, convulsions, and shock.
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ethylene dichloride	EC50: > 433 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 166 mg/L, 96h static (Desmodesmus subspicatus)	LC50: 230 - 710 mg/L, 96h flow-through (Lepomis macrochirus) LC50: 110 - 123 mg/L, 96h flow-through (Pimephales promelas) LC50: = 225 mg/L, 96h static (Oncorhynchus mykiss)	Not listed	EC50: 140 - 190 mg/L, 48h Static (Daphnia magna)











Persistence and Degradability	Persistence is unlikely based on information available.
Bioaccumulation/ Accumulation	No information available.
Mobility	Will likely be mobile in the environment due to its volatility.

Component	log Pow
Ethylene dichloride	1.45

13. Disposal considerations

Disposal methods	The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
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14. Transport information

	DOT	TDG	IMDG	IATA
UN number	UN1184	UN1184	UN1184	UN1184
UN proper shipping name	ETHYLENE DICHLORIDE	ETHYLENE DICHLORIDE	ETHYLENE DICHLORIDE	ETHYLENE DICHLORIDE
Transport hazard class(es)	3 (6.1)  	3 (6.1)  	3 (6.1)  	3 (6.1)  
Packing group	II	II	II	II

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”



Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

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

Safety, health and environmental regulations/legislation specific for the substance or mixture	Ensure all national/local regulations are observed.
REACH Restrictions - Annex XVII	With the exception of those listed below: The components of this product are not subject to restrictions. Annex XVII
REACH Authorisation - Annex XIV	The components of this product are not subject to authorization.
Chemical Safety Assessment	It has not been carried out.

16. Any other information

History

Product name	
Product code	
Date of printing	Entity 1 Made by India
Date of issue/Date of revision	
Date of previous issue	
Version	
Prepared by	

17. Change Details