

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Product Identifier**

Perihal Produk: **1,2-Dikloroetana**  
 Product Description: **1,2-Dichloroethane**  
 Cat No. : D/1751/08, D/1751/15, D/1751/17, D/1751/27, D/1751  
 Synonyms Ethylene dichloride; EDC  
 CAS No 107-06-2  
 Molecular Formula C<sub>2</sub> H<sub>4</sub> Cl<sub>2</sub>

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

Recommended Use Laboratory chemicals.  
 Uses advised against

**Company** Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd  
 Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,  
 No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,  
 Selangor Darul Ehsan, Malaysia.  
 Main line: +60 3-5525 7888

**Supplier**

**E-mail address** Enquiry.my@thermofisher.com

**Emergency Telephone Number** Tel: +03-5525 7888  
 CHEMTREC Malaysia **1-800-815-308** (Malay)  
 CHEMTREC Malaysia (Kuala Lumpur) **+(60)-327884561** (Malay)

**SECTION 2: HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

Flammable liquids	Category 2 (H225)
Acute oral toxicity	Category 4 (H302)
Acute Inhalation Toxicity - Vapors	Category 3 (H331)
Skin Corrosion/Irritation	Category 2 (H315)
Serious Eye Damage/Eye Irritation	Category 2 (H319)
Carcinogenicity	Category 1B (H350)
Specific target organ toxicity - (single exposure)	Category 3 (H335) (H336)

**Label Elements**


# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

## Signal Word

## Danger

### Hazard Statements

H225 - Highly flammable liquid and vapor  
H302 - Harmful if swallowed  
H331 - Toxic if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H350 - May cause cancer

### Precautionary Statements

#### Prevention

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P240 - Ground and bond container and receiving equipment  
P241 - Use explosion-proof electrical/ ventilating/ lighting equipment  
P242 - Use non-sparking tools  
P243 - Take action to prevent static discharges  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

#### Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P311 - Call a POISON CENTER or doctor  
P330 - Rinse mouth  
P363 - Wash contaminated clothing before reuse  
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

#### Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up

#### Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

### Other Hazards

Toxic to terrestrial vertebrates  
This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Ethylene dichloride	107-06-2	>95

## SECTION 4: FIRST AID MEASURES

# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

## Description of 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. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### **Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

### **Ingestion**

Do NOT induce vomiting. Call a physician or poison control center immediately.

### **Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. 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.

### **Self-Protection of the First Aider**

Use personal protective equipment as required.

## Most important symptoms and effects, both acute and delayed

None reasonably foreseeable. 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. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

## Indication of any immediate medical attention and special treatment needed

### **Notes to Physician**

Treat symptomatically. Symptoms may be delayed. A patient adversely affected by exposure to this product should not be given adrenaline (epinephrine) or similar heart stimulant since these would increase the risk of cardiac arrhythmias.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

#### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

#### **Extinguishing media which must not be used for safety reasons**

No information available.

### Special hazards arising from the substance or mixture

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors.

### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Phosgene, Hydrogen chloride gas.

### Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

## Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

## Environmental precautions

Should not be released into the environment.

## Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. 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.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Component	Malaysia	ACGIH TLV	OSHA PEL
Ethylene dichloride		TWA: 10 ppm	(Vacated) TWA: 1 ppm (Vacated) TWA: 4 mg/m <sup>3</sup> Ceiling: 100 ppm (Vacated) STEL: 2 ppm (Vacated) STEL: 8 mg/m <sup>3</sup> TWA: 50 ppm

Component	European Union	The United Kingdom	Germany
Ethylene dichloride	TWA: 8.2 mg/m <sup>3</sup> (8h) TWA: 2 ppm (8h) Skin	STEL: 15 ppm 15 min STEL: 63 mg/m <sup>3</sup> 15 min TWA: 5 ppm 8 hr TWA: 21 mg/m <sup>3</sup> 8 hr Carc. Skin	Haut

### Exposure Controls

#### Engineering Measures

Use only under a chemical fume hood. 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.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or

# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

## Personal protective equipment

<b>Eye Protection</b>	Goggles
<b>Hand Protection</b>	Protective gloves
<b>Skin and body protection</b>	Long sleeved clothing

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

<b>Respiratory Protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators
<b>Recommended Filter type:</b>	Organic gases and vapours filter Type A Brown conforming to EN14387 To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly When RPE is used a face piece Fit Test should be conducted

<b><u>Hygiene Measures</u></b>	Handle in accordance with good industrial hygiene and safety practice
--------------------------------	---

<b><u>Environmental exposure controls</u></b>	No information available
---	--------------------------

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Colorless	
<b>Physical State</b>	Liquid	
<b>Odor</b>	sweet	
<b>Odor Threshold</b>	400 ppm	
<b>pH</b>	No information available	
<b>Melting Point/Range</b>	-35 °C / -31 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	81 - 85 °C / 177.8 - 185 °F	
<b>Flash Point</b>	13 °C / 55.4 °F	<b>Method -</b> No information available
<b>Evaporation Rate</b>	6.5 (Butyl Acetate = 1.0)	
<b>Flammability (solid,gas)</b>	Not applicable	Liquid
<b>Explosion Limits</b>	<b>Lower</b> 6.2 vol% <b>Upper</b> 15.9 vol%	
<b>Vapor Pressure</b>	65 mmHg @ 29 °C	
<b>Vapor Density</b>	3.4	(Air = 1.0)
<b>Specific Gravity / Density</b>	1.250	
<b>Bulk Density</b>	Not applicable	Liquid
<b>Water Solubility</b>	8.7 g/L (20°C)	
<b>Solubility in other solvents</b>	No information available	

# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

## Partition Coefficient (n-octanol/water)

Component	log Pow
Ethylene dichloride	1.45

Autoignition Temperature 440 °C / 824 °F

Decomposition Temperature No data available

Viscosity 0.8 mPa s at 20 °C

Explosive Properties

Vapors may form explosive mixtures with air

Oxidizing Properties No information available

Molecular Formula C<sub>2</sub> H<sub>4</sub> Cl<sub>2</sub>

Molecular Weight 98.96

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

None known, based on information available.

### Chemical Stability

Stable under normal conditions.

### Possibility of Hazardous Reactions

#### Hazardous Polymerization

Hazardous polymerization does not occur.

#### Hazardous Reactions

None under normal processing.

### Conditions to Avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.

### Incompatible Materials

Strong oxidizing agents. Bases. Alkali metals.

### Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Phosgene. Hydrogen chloride gas.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Product Information

##### (a) acute toxicity;

Oral

Category 4

Dermal

Based on available data, the classification criteria are not met

Inhalation

Category 3

# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethylene dichloride	625 mg/kg ( Rat ) 413 mg/kg ( Mouse )	4890 mg/kg ( Rabbit )	28.79 mg/L ( Rat ) 1h 7.8 mg/l ( Rat ) 4h

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Category 1B

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Ethylene dichloride	Carc Cat. 1B		Cat. 2	Group 2B

(g) reproductive toxicity;

Based on available data, the classification criteria are not met

(h) STOT-single exposure;

Category 3

Results / Target organs

Respiratory system, Central nervous system (CNS).

(i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard;

Based on available data, the classification criteria are not met

Kinematic viscosity:

> 20.5 mm<sup>2</sup> /s

**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. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

**Endocrine Disrupting Properties**

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects

Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Ethylene dichloride	LC50: 230 - 710 mg/L, 96h flow-through (Lepomis macrochirus) LC50: 110 - 123 mg/L, 96h flow-through (Pimephales promelas)	EC50: 140 - 190 mg/L, 48h Static (Daphnia magna)	EC50: > 433 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 166 mg/L, 96h static (Desmodesmus subspicatus)	

# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

	LC50: = 225 mg/L, 96h static (Oncorhynchus mykiss)			
--	--	--	--	--

**Persistence and degradability**  
**Persistence**

Not readily biodegradable  
Persistence is unlikely, based on information available.

**Bioaccumulative potential**

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Ethylene dichloride	1.45	2 dimensionless

**Mobility in soil**

The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

**Other adverse effects**

No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Waste from Residues/Unused Products**

Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations

**Contaminated Packaging**

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous Keep product and empty container away from heat and sources of ignition

**Other Information**

Waste codes should be assigned by the user based on the application for which the product was used Do not flush to sewer Can be landfilled or incinerated, when in compliance with local regulations

## SECTION 14: TRANSPORT INFORMATION

**IMDG/IMO**

UN-No UN1184  
Hazard Class 3  
Subsidiary Hazard Class 6.1  
Packing Group II  
Proper Shipping Name ETHYLENE DICHLORIDE

**Road and Rail Transport**

UN-No UN1184  
Hazard Class 3  
Subsidiary Hazard Class 6.1  
Packing Group II  
Proper Shipping Name ETHYLENE DICHLORIDE

**IATA**

UN-No UN1184

FSUD1751



# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

**Hazard Class** 3  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II  
**Proper Shipping Name** ETHYLENE DICHLORIDE

**Special Precautions for User** No special precautions required

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories** X = listed

Component	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	IECSC	AICS	KECL
Ethylene dichloride	203-458-1	X	X	X	X	X	X	X	KE-10121

Component	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)
Ethylene dichloride			X	Annex I - Y45

### National Regulations

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Ozone Depletion Potential** This product does not contain any known or suspected substance

Component	Persistent Organic Pollutant	Ozone Depletion Potential	Pesticides Act 1974
Ethylene dichloride			X

## SECTION 16: OTHER INFORMATION

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

# SAFETY DATA SHEET

1,2-Dichloroethane

Revision Date 23-Mar-2025

---

## Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Revision Date 23-Mar-2025

Revision Summary SDS sections updated.

**In accordance with local and national regulations: Occupational Safety and Health  
(Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

## 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 a 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

**End of Safety Data Sheet**