



Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

Creation Date 04-Feb-2010

Revision Date 04-Feb-2010

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	1,2-Dichloroethane
Cat No.	E175-4; E175-20; E175-500; E175RS-19; E175RS-50; E190-4
Synonyms	Ethylene dichloride; Ethylene chloride (Certified ACS/Spectranalyzed)
Recommended Use	Laboratory chemicals
Company	Emergency Telephone Number
Fisher Scientific	CHEMTREC®, Inside the USA: 800-424-9300
One Reagent Lane	CHEMTREC®, Outside the USA: 703-527-3887
Fair Lawn, NJ 07410	
Tel: (201) 796-7100	

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Flammable liquid and vapor. Possible cancer hazard. May cause cancer based on animal data. Harmful if swallowed. Irritating to eyes, respiratory system and skin. May cause central nervous system effects. May cause adverse liver effects.

Appearance Colorless

Physical State Liquid

odor sweet

Target Organs Central nervous system (CNS), Eyes, Skin, Respiratory system, Blood, Kidney, Liver, Heart

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

Irritating to eyes.

Skin

Irritating to skin. May be harmful in contact with skin.

Inhalation

Irritating to respiratory system. May be harmful if inhaled. Inhalation may cause central nervous system effects.

Ingestion

Harmful if swallowed. May cause central nervous system effects. May cause adverse liver effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

Possible cancer hazard based on tests with laboratory animals. Tumorigenic effects have been reported in experimental animals.. Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system disorders. Preexisting eye disorders. Kidney disorders. Liver disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

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

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	13°C / 55.4°F
Method	No information available.
Autoignition Temperature	440°C / 824°F
Explosion Limits	
Upper	15.9 vol %
Lower	6.2 vol %
Suitable Extinguishing Media	CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.
Unsuitable Extinguishing Media	Water may be ineffective
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health 2

Flammability 3

Instability 0

Physical hazards N/A

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions** Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges.
- Environmental Precautions** Should not be released into the environment.
- Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

- Handling** Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Do not breathe vapors/dust. Do not ingest. Take precautionary measures against static discharges.
- Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

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

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Ethylene dichloride	TWA: 1 ppm TWA: 4 mg/m ³ STEL: 2 ppm STEL: 8 mg/m ³	TWA: 10 ppm TWA: 40 mg/m ³	TWA: 10 ppm TWA: 40 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

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 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
odor	sweet
Odor Threshold	No information available.
pH	No information available.
Vapor Pressure	65 mmHg @ 29 °C
Vapor Density	3.4 (Air = 1.0)
Viscosity	0.8 mPa s at 20 °C
Boiling Point/Range	81 - 85°C / 177.8 - 185°F
Melting Point/Range	-35°C / -31°F
Decomposition temperature	No information available.
Flash Point	13°C / 55.4°F
Evaporation Rate	(Butyl Acetate = 1.0)
Specific Gravity	1.250
Solubility	Insoluble in water
log Pow	No data available
Molecular Weight	98.96
Molecular Formula	C ₂ H ₄ Cl ₂

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Hydrogen chloride gas
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions .	None under normal processing..

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

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

Irritation Irritating to eyes, respiratory system and skin

Toxicologically Synergistic Products No information available.

Chronic Toxicity**Carcinogenicity**

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

Component	ACGIH	IARC	NTP	OSHA	Mexico
Ethylene dichloride	Not listed	Group 2B	Reasonably Anticipated	X	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

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Sensitization

No information available.

Mutagenic Effects

Mutagenic effects have occurred in humans.

Reproductive Effects

Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects

No information available.

Teratogenicity

Teratogenic effects have occurred in experimental animals..

Other Adverse Effects

Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.

Endocrine Disruptor Information

No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ethylene dichloride	EC50 = >433 mg/L 96h	Oncorhynchus mykiss: LC50 = 225 mg/L 96h	EC50 = 1100 mg/L 15 min EC50 = 158 mg/L 5 min EC50 = 696 mg/L 5 min EC50 = 918 mg/L 30 min	EC50 = 137 mg/L 48h

Persistence and Degradability

Not readily biodegradable.

Bioaccumulation/ Accumulation

No information available

Mobility

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Component	log Pow
Ethylene dichloride	1.45

13. DISPOSAL CONSIDERATIONS

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Waste Disposal 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.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Ethylene dichloride - 107-06-2	U077	-

14. TRANSPORT INFORMATION

DOT

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

TDG

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

IATA

UN-No UN1184
Proper Shipping Name Ethylene dichloride
Hazard Class 3
Subsidiary Hazard Class 6.1
Packing Group II

IMDG/IMO

UN-No UN1184
Proper Shipping Name Ethylene dichloride
Hazard Class 3
Subsidiary Hazard Class 6.1
Packing Group II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL

15. REGULATORY INFORMATION											
Ethylene dichloride	T	X	-	203-458-1	-		X	X	X	X	KE-10121 X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

Component	TSCA 12(b)
Ethylene dichloride	Section 4

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Ethylene dichloride	107-06-2	>95	0.1

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Ethylene dichloride	X	100 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Ethylene dichloride	X		-

OSHA

Not applicable

CERCLA

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

Component	Hazardous Substances RQs	CERCLA EHS RQs
Ethylene dichloride	100 lb	-

California Proposition 65

This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Ethylene dichloride	107-06-2	Carcinogen	10 µg/day

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ethylene dichloride	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 any DHS chemicals.

Other International Regulations

Mexico - Grade Serious risk, Grade 3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

B2 Flammable liquid
 D1B Toxic materials
 D2A Very toxic materials
 D2B Toxic materials



16. OTHER INFORMATION


Prepared By Regulatory Affairs

16. OTHER INFORMATIONThermo Fisher Scientific
Tel: (412) 490-8929

Creation Date 04-Feb-2010

Print Date 04-Feb-2010

Revision Summary "****", and red text indicates revision


Reviewed
2013.02.12
14:05:32 -05'00'**Disclaimer**

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS