



Westlake Vinyls Company, L.P
(Geismar)

MATERIAL SAFETY DATA SHEET

Manufacturer's Name: Westlake Vinyls Company LP
Address: PO Box 228
36045 Hwy 30
Geismar, LA 70734
Telephone Number: (225) 673-0651
24 hour Number

Product Name: ETHYLENE DICHLORIDE
Date of Issue: November 22, 2004
Revision Date: March 1, 2006

SECTION I. PRODUCT IDENTIFICATION

Product Name: Ethylene Dichloride
Common Names/Synonyms: EDC. Ethylene Dichloride. 1,2-dichloroethane.
Sym-dichloroethane. Dutch liquid. Dutch oil.
Glycol dichloride.
CAS Number: 107-06-2
Chemical Formula: C₂H₄Cl₂

SECTION II. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

Component	CAS No.	Percent	Exposure Limits
1,2 Dichloroethane	107-06-2	100	(reference)

Exposure Limits

OSHA PEL: 50 ppm (Re: 29 CFR 1910.1000)

CEILING: 100 ppm 200 ppm (5 min max peak in any 3 hrs)

ACGIH TLV-TWA: 2001-10 ppm, 32 mg/m³

Re: American Conference of Governmental Industrial Hygienists, 2002 Edition

* Suspected Carcinogen (IARC, NTP)

SECTION III. CHEMICAL AND PHYSICAL PROPERTIES

Boiling Point: 83.5 °F (182 °C)
Melting Point: Not Applicable (N/A)
Evaporation Rate: 5 (estimate)
Vapor Density (Air = 1) : 3.4 gm/ Liter



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Molecular Weight:	98.96
Solubility in Water (1% by weight):	0.8@ 20°C (68°F)
Appearance and Odor:	A clear, colorless liquid with a “chloroform-like” odor. The odor recognition threshold is from 6 – 40 ppm in air. Odor is not an adequate warning of hazard.
Vapor Pressure:	67mm/Hg @ 20°C (68°F)
Specific Gravity (Water = 1):	1.25 @ 20°C
% Volatilities By Weight:	100%
pH:	Not Applicable (N/A)

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: 13°C (55°F) - TAG Closed Cup

Self Ignition Temperature: 413°C (775°F)

Flammable Limits In Air: LEL: 6.2% UEL: 16.0%
Expressed as Lower Explosive Limit LEL & Upper Explosive Limit UEL

National Fire Protection Association Hazard Identification Code (NFPA 704)

Health: 2* Flammability: 3 Reactivity: 0

Fire Extinguishing Media: Use dry chemical, water fog, foam, or carbon dioxide to extinguish EDC fires. Water may be ineffective as an extinguishing agent since it can scatter and spread the fire. Use water spray to cool fire-exposed containers, flush spills away from exposures, disperse EDC vapor, and protect personnel attempting to stop a leak. Do not fully extinguish burning gas until flow is stopped due to the vaporization characteristics of EDC.

Special Fire Fighting Procedures: Isolate hazard area and deny entry. Since fire may produce toxic fumes, wear a self contained breathing apparatus (SCBA) with a full face-piece operated in the positive-pressure mode and full protective equipment. Structural



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firefighter’s protective clothing provides limited protection. Stay out of low areas. Be aware of runoff from fire control methods. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic combustion gases from any source.

* See Chronic Health Effects – Section V (Repeated or chronic exposures to EDC.)

Unusual Fire Or Explosion Hazards: Vapor explosion hazard indoors, outdoors or in sewers. Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by flame, sparks, heaters, or other ignitions sources at distant locations (flash-back potential). At very high temperatures, such as occur in open flames, this product decomposes to produce hydrochloric acid and other toxic and irritating vapors such as phosgene gas.

SECTION V. HEALTH HAZARDS

Primary Routes of Entry: Inhalation, skin contact.

Acute Health Effects: Symptoms of acute overexposure include kidney and liver damage can occur from severe, acute or chronic exposure. May cause irritation of the eyes, nose, and respiratory tract, breathlessness, euphoria, nausea, drowsiness, headache, dizziness, and intoxication. Severe exposure may lead to convulsions and unconsciousness. Skin contact may cause a drying rash (dermatitis). Ingestion (although, not common) may cause gastrointestinal irritability with episodes of vomiting. There have been reports of Deaths from accidental ingestion.

Eyes/Skin: Contact with eyes and skin may cause irritation. Contact with liquid may cause localized pain followed by transitory corneal injury.

Inhalation: See acute and chronic health effects

Ingestion: Ethylene Dichloride is a liver and kidney poison. May cause vomiting, if vomiting results in aspiration, chemical pneumonia could follow. May produce symptoms of central nervous system depression ranging from light-headedness to unconsciousness and death. A number of deaths from ingestion of 20 – 50 ml have been reported.

Chronic Health Effects: Long term chronic exposure may result in headaches, mental confusion, depression, fatigue, loss of appetite, nausea, vomiting, cough, loss of sense of balance, visual disturbances and liver and kidney damage. Repeated over-exposure to EDC can produce liver, kidney and adrenal damage.



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Medical Conditions Aggravated By Exposure: NIOSH has recommended that nursing mothers not work with this product since the solvent has been found in nursing mother's milk. Pre-existing disorders affecting target organs.

Carcinogenicity Status: Classified by the Internal Agency for Research on Cancer (IARC) as a possible human carcinogen (GROUP 2B) and the National Toxicology program (NTP) as an anticipated human carcinogen.

Target Organs: Adrenal Glands, Central Nervous System, Kidneys, Liver.

EMERGENCY OVERVIEW: (Summary of Risks) EXTREMELY FLAMMABLE, VOLATILE SOLVENT. MAY CAUSE IRRITATION BY ALL ROUTES OF EXPOSURE. INHALATION OR INGESTION MAY CAUSE SYMPTOMS OF INTOXICATION AND CENTRAL NERVOUS SYSTEM DEPRESSION. MAY BE FATAL IF SWALLOWED. PROLONGED OR REPEATED INHALATION OR INGESTION MAY RESULT IN LIVER, KIDNEY OR ADRENAL DAMAGE. POTENTIAL CANCER HAZRD. CONTAINS MATERIAL WHICH MAY CAUSE CANCER. RISK OF CANCER DEPENDS ON DURATION AND LEVEL OF EXPOSURE.
EDC IS A CLEAR, COLORLESS LIQUID WITH A CHLOROFORM-LIKE ODOR

SECTION VI. FIRST AID PROCEDURES

Inhalation: Remove exposed person to fresh air. Emergency personnel should protect against inhalation exposure. Provide CPR to support breathing or circulation as necessary. Call a physician. Keep awake and transport to a medical facility. Never give anything by mouth to an unconscious person.

Eyes: Gently lift the eyelids and flush immediately and continuously with flooding amounts of water until transported to an emergency medical facility. Consult a physician immediately.

Skin: Quickly remove contaminated clothing. Immediately rinse with flooding amounts of water for at least 15 minutes. After 15 minute flush, wash affected area with soap and water. For reddened or blistered skin, consult a physician.

Ingestion: DO NOT INDUCE VOMITING. Ethylene Dichloride is not soluble. DO NOT GIVE FLUIDS. If spontaneous vomiting is inevitable, PREVENT ASPIRATION



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by keeping the victim's head below the knees. GET IMMEDIATE MEDICAL ATTENTION.

Physicians Note: A qualified physician may perform gastric lavage in cases of ingestion within the last (4) four hours. Precautions must be taken to avoid aspiration, such as, insertion of mechanical airway (endotracheal tube) that will effectively prevent the aspiration during the procedure.

SECTION VII. PERSONAL PROTECTION

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin: Wear impervious gloves. Check with ppe manufacturer to determine materials resistant to chlorinated solvents. Rubber, neoprene and PVA (vinyl) have been recommended by some suppliers. Avoid skin contact. .
DISCARD GLOVES THAT CAN NOT BE DECONTAMINATED

Wear rubber boots or shoes, aprons and other suitable protective gear, as the need exists.

Eyes: Wear protective chemical safety goggles if splash is possible, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Face shields should be worn to avoid facial exposure when working with EDC.

Ventilation: Provide general and local explosion-proof ventilation systems to maintain airborne concentrations at least below the OSHA PELs (Sec.2). Local exhaust ventilation is preferred since it prevents containment dispersion into the work area by controlling it at its source.

Contaminated Equipment: Remove this material from personal protective equipment. Launder contaminated clothing before wearing.

Other: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.



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SECTION VIII. REACTIVITY DATA

Stability: EDC is stable at room temperature in closed containers under normal storage and handling conditions.

Hazardous Thermal Decomposition Products: Heating this product results in the formation and release of toxic hydrogen chloride acid vapors. Also, carbon monoxide, carbon dioxide, phosgene, aromatic and aliphatic hydrocarbons.

Incompatible Materials: Avoid contact with pure oxygen. Reacts with alkalis, amines and strong oxidizing agents such as hydrogen peroxide, permanganates and perchlorates. Depending on the amount and specific materials involved, contact can result in intense heat, boiling, flame development, explosion or toxic gas generation (such as hydrogen chloride and vinyl chloride). Reacts with aluminum generating hydrogen gas.

Incompatible Conditions: Avoid heat and ignition sources.

Hazardous Polymerization: Hazardous polymerization cannot occur.

SECTION IX. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill and Leak: Design and practice an EDC spill prevention control and countermeasure plan (SPCC plan). Notify safety personnel, evacuate all unnecessary personnel, eliminate all heat and ignition sources, and provide adequate ventilation. Cleanup personnel should protect against vapor inhalation, eye contact, and skin absorption. Absorb as much EDC as possible with an inert, noncombustible absorbent material. For large spills, dike far ahead of spill and contain liquid. For vapor suppression, use a "alcohol-based" foam product. Use nonsparking tools to place waste liquid or absorbent into closable containers for disposal. Keep waste out of confined spaces such as sewers, watersheds, and waterways because of toxicity and explosion danger. Follow applicable OSHA regulations (29 CFR 1910.120).

Due to processing, reformulation, etc., it is the responsibility of the user to determine the status of waste material. Dispose of according to federal, state and local regulations. All materials used in the clean up and the material itself should be treated as hazardous waste.



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Disposal:

Listed as EPA Hazardous Waste # U077. (40 CFR 261.33)

Listed Reportable Quantity (RQ):

100 lb [*per Clean Water Act, Sec. 307 (a), 311 (b) (4), 112; and per RCRA, Sec. 3001]

SARA Extremely Hazardous Substance (40 CFR 355): Not listed.

SARA Hazardous Category: (40 CFR 372): Listed

OSHA Destinations: Listed as an Air Contaminant (29 CFR 1910.1000, Tables Z-1-A and Z-2) CAS # 107-06-2

SECTION X. ADDITIONAL PRECAUTIONS

Storage: Under normal conditions, product may be stored satisfactorily in mild steel without an interior lining. Aluminum is not recommended for storage and handling. Store containers in a cool, dry, ventilated, fire resistant area away from direct heat and separated from oxidizers. Dike storage tanks separately to contain 110% of tank volume. Ground equipment lines, drums, etc., to avoid static charges. Vent indoor tanks to an outside location so escaping vapors will not contaminate any work areas. Vents should be protected by a flame arrester and sized according to suggested Flammable Liquids Ordinance of the NFPA or according to local ordinances. Atmospheric tanks should be located 100 feet from ignition sources. Pressure tanks should be located 150 feet from ignition sources.

Engineering Controls: Odor may indicate concentrations above the allowed OSHA and ACGIH exposure limits. Educate workers about its potential hazards and precautions to take to avoid exposure. Use this material with extreme caution and only if absolutely essential. Avoid vapor inhalation and skin and eye contact. Use only with adequate ventilation and appropriate personal protective gear. Institute a respiratory protection program that includes regular training, maintenance, inspection, and evaluation. Use adequate local exhaust ventilation wherever mist, spray or vapor may be generated.

Other: Avoid skin contact. Provide emergency shower and eyewash facility should be in close proximity (ANZI Z358.1)



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SECTION XI. TRANSPORTATION DATA

Department of Transportation: (49 CFR 172.101(c)):
Proper Shipping Name: ETHYLENE DICHLORIDE
Placards: Flammable liquid
Labels: Flammable liquid

UN/NA ID. No.: 172.101(e): UN1184
DOT Packaging Exceptions: NONE
DOT Packaging Requirements: 173.202 & 173.243
IMO Shipping Name: ETHYLENE DICHLORIDE
IMO Hazard Class: 172.101(d): 3
ID No. UN1184
IMO Label: Flammable Liquid
IMDG Packaging Code 172.101(f): PG II

SECTION XII. OTHER REGULATORY DATA

This Material is Regulated Under:

Occupational Safety and Health Administration (OSHA):

Federal Resource Conservation and Recovery Act: (40 CFR 261.33)
EPA Hazardous Waste # U077

Risk Management Plan: (40 CFR 68): Not listed

Superfund Amendments Reauthorization Act of 1986 (SARA):

Section 313 SARA Title III - Toxic Chemical (40 CFR 372):
Reportable Quantity (RQ) 100 lbs.

All ingredients can be found on the TOSCA chemical inventory.



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SECTION XIII. USERS RESPONSIBILITY

This bulletin cannot cover all possible situations that the user may experience during processing. Each aspect of the user's operation should be examined to determine, if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to employees and/or customers. Westlake Vinyl Company LP (WVC) must rely on the user to use this information to develop appropriate work practice guideline and employee instructional programs specific to the user's operation.

SECTION XIV. DISCLAIMER OF RESPONSIBILITY

As the conditions and methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein based on credible published data and is believed to be true and accurate, but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information or the hazards connected with the use thereof. Compliance with all applicable federal, state and local laws and regulations regarding the use, storage, sale, transport or disposal of this material is the responsibility of the user.

ISSUED: BY WESTLAKE VINYL COMPANY, LP November, 2004.



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SHIPPING INFORMATION

IDENTIFICATION - DOMESTIC TRANSPORTATION

Proper Shipping Name (172.101(c)): ETHYLENE DICHLORIDE
(Technical Name(s)) 172.203(k): N/A
Hazard Class 172.101(d): 3 UN/NA# 172.101(e): UN 1184
Haz. Substance 171.8: Ethylene Dichloride
Reportable Quantity: 100 Lbs
Inhalation Hazard 172.2a(b): N/A
Package Code 172.101(f): PG II Placarded: FLAMMABLE LIQUID

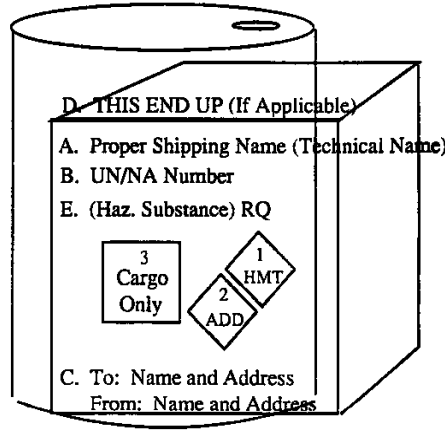
Comment [FS1]: ADD;
SUGGESTED HAZARDOUS
MATERIAL DESCRIPTION FOR
QUANTITIES ABOVE 100 POUNDS:
. ETHYLENE DICHLORIDE//3,
6.1//UN1184//PG II//RQ(ETHYLENE
DICHLORIDE)
. MSDS NAME: ETHYLENE
DICHLORIDE
. 1996 NARG NO. 129

PACKAGING (Part 173)

- Packaging Section (172.101(i)) - Col. 8(A): None, Col. 8(B): 173.202
Col. 8(C): 173.243
- General Packaging Section - General 173.24 Liquid Hazard Class: Flammable

MARKING

- A. Proper Shipping Name -172.301(a)
Technical Name -172.301(b)
- B. UN/NA Number - 172.301(a)
- C. Name & Address - 172.301(d)
- D. THIS END UP - 172.312(a)
- E. Hazardous Substance RQ (Name) (172.324)
ORM Designation - 172.316(a)
Inhalation Hazard - 172.313(a)



DOMESTIC LABELING

- 1. HMT LABELS (172.400)
- 2. Additional Subsidiary Hazard - 172.402(a):
6.1, Poison

IATA 1997 Edition

Proper Shipping Name (Col. B): Ethylene Dichloride
Class/Division (Col. C): 3 Subsidiary Risk (Col. D): 6.1
UN/ID# (Col. A): UN 1184
U.S. Haz. Substance (US 1): Same As Above Other Inhalation Haz. (US 34): N/A
Carrier Special Provisions (Col. K): N/A

PACKAGING

- Max. Qty. Per Pkg. (Cols. H/J) - Passenger: 1 Liter Cargo: 60 Liters
- Packaging Instructions (Cols. G/I) - Passenger: 306 Cargo: 308

Comment [FS2]: CHANGE TO:
Y306.