


OxyChem®

Vinyl Chloride (Monomer)

OxyChem

VCM

*MSDS and label
1989-1990*

DANGER!

EXTREMELY FLAMMABLE.
LIQUID CONTACT CAN CAUSE BURNS TO EYES AND SKIN.
HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION AND KIDNEY/LIVER DAMAGE.
CANCER HAZARD, CAN CAUSE CANCER.
RISK OF CANCER DEPENDS ON DURATION AND LEVEL OF EXPOSURE.

Keep away from heat, sparks and flame.
Use only with adequate ventilation.
Keep containers closed when not in use.
Avoid contact with liquid and vapor.
Bond and ground containers and equipment.
Do not cut, drill, grind or weld on or near containers.
Vapors can travel to ignition sources and flash back.
Wear goggles, chemical resistant gloves, and protective clothing.
Use NIOSH approved respirator as required to prevent overexposure.
Use explosion-proof ventilation.
Avoid contact with heat, oxidizing agents, polymerization catalysts, copper, aluminum, alkali metals.

FIRST AID:

IN CASE OF CONTACT:

FOR EYES: If direct liquid contact occurs, **IMMEDIATELY** flush eyes with a directed stream of water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of all eye and lid tissue. **GET IMMEDIATE MEDICAL ATTENTION.**

FOR SKIN: If direct liquid contact occurs, flush with water. If frostbite or burn occurs, do not rub area. **GET MEDICAL ATTENTION IMMEDIATELY.**

IF INHALED: Remove to fresh air. If breathing has stopped, give mouth-to-mouth resuscitation. If breathing is difficult, have trained person administer oxygen. **GET IMMEDIATE MEDICAL ATTENTION.**

IF SWALLOWED: NA.

PT-70

LABEL 059M9192

OCC 5844

IN CASE OF:

SPILL OR LEAK: Extremely flammable. Eliminate all ignition sources.
Isolate area and deny entry to unprotected personnel.
Stay upwind and disperse any vapor cloud with water spray.
Releases to air, land or water exceeding 1 pound must be reported to National Response Center 1-800-424-8802.

FIRE: Clear area of all unprotected personnel.
Wear full protective equipment.
Cool fire exposed containers with water.
Use water fog, foam, dry chemical or CO₂.
Stop source of leak if possible.

DISPOSAL: Submit to an approved chemical disposal service for disposal in accordance with government regulations.

**INFORMATION REQUIRED BY FEDERAL, STATE,
OR LOCAL REGULATIONS:**

This product contains:

CAS#	Name
106990	1,3-Butadiene
75014	Ethene, chloro-

FOR INDUSTRIAL USE ONLY

HMIS RATING SYSTEM: HEALTH 3* FLAMMABILITY 4 REACTIVITY 2

24 Hour Emergency Phone: (716) 278-7021

**Chemtrec
EMERGENCY TELEPHONE NUMBER
1-800-424-9300**



Occidental Chemical Corporation
Electrochemicals & Specialty Products Group
Dallas, Texas 75380
214-404-3800

OCC 5845

OCCIDENTAL CHEMICAL MATERIAL SAFETY DATA SHEET

MSDS NUMBER M9192

MSDS DATE 05-23-89

PRODUCT NAME VINYL CHLORIDE (MONOMER)

24 HOUR EMERGENCY PHONE (716) 278-7021

I. PRODUCT IDENTIFICATION

HMIS HAZARD RATINGS

HEALTH HAZARD 3* FIRE HAZARD 4 REACTIVITY 2
Based on the National Paint & Coatings Association HMIS rating system

SARA/TITLE III HAZARD CATEGORIES (See Section X)

Immediate (ACUTE) Health: YES Reactive Hazard: YES
Delayed (Chronic) Health: YES Sudden Release of Pressure: YES
Fire Hazard: YES

MANUFACTURER'S: Occidental Chemical Corporation
NAME AND: Customer Service, Occidental Tower, Telephone
ADDRESS: P O Box 809050, Dallas, Texas 75380 (1-800-752-5151)

CHEMICAL NAME: Ethylene, Chloro- CAS NUMBER: 75-01-4

SYNONYMS/COMMON NAMES: VCM, Ethene, Chloro; Monochloroethylene,
Chloroethene

CHEMICAL FORMULA C2ClH3

DOT PROPER SHIPPING NAME: Vinyl Chloride

DOT HAZARD CLASS: Flammable Gas

DOT I D NUMBER UN 1086

DOT HAZARDOUS SUBSTANCE: RD 10#

II. HEALTH HAZARD INFORMATION

EMERGENCY AND FIRST AID PROCEDURES

EYES:

If direct liquid contact occurs, IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION.

SKIN:

If direct liquid contact occurs, flush with water. If frostbite or burn occurs, do not rub area. GET MEDICAL ATTENTION IMMEDIATELY.

INHALATION:

Remove to fresh air. If breathing has stopped, give mouth-to-mouth resuscitation. If breathing is difficult, have trained person administer oxygen. GET IMMEDIATE MEDICAL ATTENTION.

OCC 5846

CAS = Chemical Abstract Service Number
PEL = OSHA Permissible Exposure Limit
TLV = ACGIH Threshold Limit Value - Current
NO = No relevant information found or not available
NA = Not applicable
CORP = Corporate Exposure Limit
See Chronic Effects Information

IMPORTANT: The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OR GUARANTY EXPRESS OR IMPLIED IS MADE REGARDING PERFORMANCE STABILITY OR OTHERWISE. This information is for reference only and is not intended to be an inclusive as to the manner and conditions of use, handling and storage. Other factors may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or violate any Federal, State or local laws.

II. HEALTH HAZARD INFORMATION (Continued)

INGESTION:
NA

ROUTES OF EXPOSURE

INHALATION:

High concentrations may cause central nervous system depression and kidney/liver damage, as well as affect heart rhythms. Prolonged and repeated exposure may result in changes in the blood system and loss of bone from finger tips.

SKIN:

Direct contact with liquid can result in freeze burns (frostbite).

EYE CONTACT:

Direct contact with liquid can result in eye burns.

INGESTION:

Not a relevant route of exposure.

EFFECTS OF OVEREXPOSURE

ACUTE:

Freeze burns as noted above, early to moderate central nervous system depression may be evidenced by giddiness, headache, dizziness and nausea, in extreme cases, unconsciousness and death may occur.

CHRONIC:

Kidney damage may be evidenced by change in urine output, urine appearance or edema (swelling from fluid retention). Liver damage may be evidenced by loss of appetite, jaundice (yellowish skin color) and sometimes pain in the upper abdomen on the right side.

TOXICOLOGY DATA:

Acute Inhalation, LC 50 = 150,000 ppm/2 hrs (rat)

Vinyl chloride monomer has been demonstrated to be mutagenic in cultured cell tests, insects and laboratory animals.

MEDICAL LIMITATIONS:

Aggravated Medical Conditions: Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired kidney and liver function from pre-existing disorders may be aggravated by exposure to this product.

Other Health Effects: Listed as a known human carcinogen by the Occupational Safety and Health Administration, The National Toxicology Testing Program and the International Agency For Research on Cancer. Long-term exposure to vinyl chloride gas has caused cancer in animals. Some production workers have developed liver cancer when exposed for many years to much higher concentrations of vinyl chloride than encountered in plants operating today. In addition, there are reports that VCM may cause other forms of cancer in addition to liver cancer.

III. IMPORTANT COMPONENTS

MATERIAL OR COMPONENT CAS NUMBER / NAME	EXPOSURE LIMITS	PERCENT	
106990 1,3-Butadiene	PEL=1000 ppm, 2200 mg/m3 TLV=10 ppm, 22 mg/m3, A2	VOL WT	2 5 ppm

Common Names:

Listed On(List Legend Below):
02 09 11 16 18

75014 Ethene, chloro-	PEL=1 ppm, (8 hr) TWA STEL=5 ppm (15 min) TLV=5 ppm; 10 mg/m3, A1	VOL WT	2 99 99
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Common Names:
MONOCHLOROETHYLENE
VINYL CHLORIDE#
VINYL CHLORIDE MONOMER

Listed On(List Legend Below):
02 06 08 11 15 16 18

Chemical name used in the SARA Section 313 List of Toxic Chemicals (40 CFR - Section 372.65) if different from CAS name.

See Section II

All components of this product that are required to be on the TSCA Inventory are listed on the inventory

LIST LEGEND

2 SARA TOXIC CHEM, SECTION 313	6 NTP "KNOWN HUMAN CARCINOGEN
8 IARC HUMAN CARCINOGEN, GROUP 1	9 IARC GROUP 2A OR 2B CARCINOGEN
11 CA PROP 65 - CARCINOGEN	15 PA SPECIAL & ENV HAZ SUBSTANCE
16 NO WORKPLACE HAZ SUBSTANCE LST	18 NY HAZARDOUS SUBSTANCES

IV. FIRE AND EXPLOSION DATA

FLASH POINT: -108°F (TCC) AUTOIGNITION TEMPERATURE. 882°F

FLAMMABLE LIMITS IN AIR, % BY VOLUME- UPPER: 22.0
LOWER: 4.0

EXTINGUISHING MEDIA:

Use water fog, foam, dry chemical or carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES:

Danger! Extremely flammable; Clear fire area of unprotected personnel and isolate. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water. Stop source of leak if possible.

UNUSUAL FIRE AND EXPLOSION HAZARD:

Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture. Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure.

V. SPECIAL PROTECTION

VENTILATION REQUIREMENTS:

Use explosion-proof ventilation as required to control vapor concentrations.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY:

Avoid breathing vapor. If exposure may or does exceed occupational exposure limits (Sec III) use a NIOSH approved respirator as required to prevent overexposure. In accord with 29 CFR 1910.134, use an atmosphere supplying respirator (air line or self-contained breathing apparatus). No air purifying respirator has been approved for vinyl chloride.

EYE:

Wear chemical goggles if there is likelihood of contact with eyes.

GLOVES:

Wear chemical resistant gloves such as nitrile or viton.

OTHER CLOTHING AND EQUIPMENT:

Avoid liquid contact with skin and clothing. Wear chemical resistant protective clothing. Emergency shower and eye wash facility should be in close proximity.

MONITORING EXPOSURE

BIOLOGICAL:

NO

PERSONAL/AREA:

USE NIOSH Analytical Method: Number 1007.

VI. PHYSICAL DATA

BOILING POINT @ 760 mm Hg: 7°F

MELTING POINT: -245°F

VAPOR PRESSURE 1.210 mm Hg @ 20°C

SPECIFIC GRAVITY (H₂O=1): 0.81

SOLUBILITY IN H₂O % BY WT: Slight

VAPOR DENSITY (Air=1): 2.15

APPEARANCE AND ODOR: Colorless gas, "sweet" odor

pH: NO

EVAPORATION RATE (BuAc = 1): >1

% VOLATILES BY VOL.: 100%

VII. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY:

Can form shock sensitive peroxides on exposure to air

INCOMPATIBILITY:

Heat, contact with oxidizing agents, oxygen, air, sunlight and other polymerization catalysts. Copper, aluminum, metal alkyls and alkali metals such as sodium and potassium and their alloys

HAZARDOUS DECOMPOSITION PRODUCTS:

HCl, CO, phosgene on combustion.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:

Heat, contact with oxidizing agents, oxygen, air, sunlight and other polymerization catalysts.

VIII. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS:

Keep liquid and vapor away from heat, sparks and flame. Surfaces that are sufficiently hot may ignite even liquid product in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone. Vapors may accumulate and travel to ignition sources distant from the handling site; flash fire can result. Keep containers closed when not in use. Use only with adequate ventilation.

Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, burn, weld or perform similar operations on or near containers.

Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment.

IX. ENVIRONMENTAL PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Danger! Extremely flammable. Eliminate all sources of ignition. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low areas. Notify local fire department. Disperse any vapor cloud with a sustained spray of water. Shut off source of leak only if it can be done safely.

WASTE DISPOSAL METHOD:

Under EPA - RCRA (40 CFR 261.21), if vinyl chloride becomes a waste material, it would be a hazardous waste; hazardous waste number U043. Refer to latest EPA or state regulations regarding proper disposal.

EPA - Comprehensive Environmental Response, Compensation and Liability Act. Under EPA-CERCLA "Superfund" releases to air, land or water which exceed the reportable quantity must be reported to the National Response Center 800-424-8802. RQ = 1 pound.

X. ADDITIONAL INFORMATION

Pursuant to the requirements of the OSHA VCM Standard, 29CFR 1910.1017, certain employees must be afforded appropriate medical surveillance. Pursuant to that standard, signs and labels are also required.

OSHA Standard 29CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.

To aid our customers in complying with regulatory requirements, SARA Title III hazard categories for this product are indicated in Section 1. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40 CFR Part 370. Please consult those regulations for details.

This product contains a toxic chemical or chemicals subject to the reporting requirements of SECTION 313 of TITLE III of the SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 and 40 CFR PART 372. (See Section III, List Legend 02)

State of California Safe Drinking Water and Toxic Enforcement Act Of 1986 (Proposition 65)

Warning: This chemical is known to the State of California to cause cancer.

XI. PREPARATION INFORMATION

For additional Non-Emergency health, safety, or environmental information telephone (716) 286-3081, or write to:

Occidental Chemical Corporation
Product Stewardship Department
Suite 400
360 Rainbow Boulevard South
Niagara Falls, NY 14302

For Emergencies: 24 HOUR EMERGENCY PHONE: (716) 278-7021

This MSDS replaces MSDS Number M9192 dated 03/08/88.

WARNING LABEL INFORMATION

Occidental Chemical Corporation
Electrochemicals & Specialty Products
Irving, Texas 75062

In case of CHEMICAL EMERGENCIES - Call (716) 278-7021 (24 hours)

CAS Number: 75-01-4

SIGNAL WORD: DANGER

STATEMENT OF HAZARDS:

EXTREMELY FLAMMABLE

LIQUID CONTACT CAN CAUSE BURNS TO EYES AND SKIN

HIGH CONCENTRATIONS MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION AND
KIDNEY/LIVER DAMAGE

CANCER HAZARD. CAN CAUSE CANCER.

RISK OF CANCER DEPENDS ON DURATION AND LEVEL OF EXPOSURE.

PRECAUTIONARY STATEMENTS:

Keep away from heat, sparks and flame

Use only with adequate ventilation

Keep containers closed when not in use

Avoid contact with liquid and vapor

Bond and ground containers and equipment

Do not cut, drill, grind or weld on or near containers.

Vapors can travel to ignition sources and flash back.

Wear goggles, chemical resistant gloves, and protective clothing.

Use NIOSH approved respirator as required to prevent overexposure.

Use explosion-proof ventilation

Avoid contact with heat, oxidizing agents, polymerization
catalysts, copper, aluminum, alkali metals.

FIRST AID:

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FOR EYES:

If direct liquid contact occurs, IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of all eye and lid tissue. GET IMMEDIATE MEDICAL ATTENTION.

FOR SKIN:

If direct liquid contact occurs, flush with water. If frostbite or burn occurs, do not rub area. GET MEDICAL ATTENTION IMMEDIATELY.

IF INHALED:

Remove to fresh air. If breathing has stopped, give mouth-to-mouth resuscitation. If breathing is difficult, have trained person administer oxygen. GET IMMEDIATE MEDICAL ATTENTION.

IF SWALLOWED:

NA

WARNING LABEL INFORMATION (Continued)

IN CASE OF:

SPILL OR LEAK:

Extremely flammable. Eliminate all ignition sources.
Isolate area and deny entry to unprotected personnel.
Stay upwind and disperse any vapor cloud with water spray.
Releases to air, land or water exceeding 1 pound must be reported
to National Response Center 1-800-424-8802.

FIRE:

Clear area of all unprotected personnel.
Wear full protective equipment.
Cool fire exposed containers with water.
Use water fog, foam, dry chemical or CO2.
Stop source of leak if possible.

DISPOSAL:

Submit to an approved chemical disposal service for disposal in
accordance with government regulations.

INFORMATION REQUIRED BY FEDERAL, STATE OR LOCAL REGULATIONS:

This product contains:

CAS#	NAME
106990	1,3-Butadiene
75014	Ethene, chloro-

HMIS RATING SYSTEM: HEALTH 3* FLAMMABILITY 4 REACTIVITY 2
FOR INDUSTRIAL USE ONLY LABEL 059M9192
For further information, Request OCC MSDS M9192

NFPA Fire Hazard Rating:
Health 2
Flammability 4
Reactivity 1

Autoignition Temperature: 882°F

Flammable Limits in Air % by Volume Upper: 22.0
Lower: 4.0

Flash Point: (TOC) -108°F