

OCCIDENTAL CHEMICAL MATERIAL SAFETY DATA SHEET

MSDS NUMBER: M9192

MSDS DATE: 11-05-87

PRODUCT NAME: VINYL CHLORIDE (MONOMER)

24 HOUR EMERGENCY PHONE:

I. PRODUCT IDENTIFICATION

3* HEALTH HAZARD, 4 FIRE HAZARD,
Based on the National Paint & Coatings

MANUFACTURER'S: Occidental Chemical Co
NAME AND : Customer Service, Occi
ADDRESS : P O Box 809050, Dallas

CHEMICAL NAME: Ethylene, Chloro-

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

CHEMICAL FORMULA: C₂H₃Cl

DOT PROPER SHIPPING NAME: Vinyl Chloride, ~~Flammable Gas~~

DOT HAZARD CLASS: Flammable Gas

DOT I.D. NUMBER: UN 1086 HAZARDOUS SUBSTANCE: RQ 1 1b

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if it hasn't been
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is extra conc
to DOT Proper Shipping
Name. No need to
send our revised copies
Jan B 4/29/88

II. HEALTH HAZARD INFORMATION

EMERGENCY AND FIRST AID PROCEDURES

EYES:

If direct liquid contact occurs, immediately flush eyes with a directed stream of water. 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, GET MEDICAL ATTENTION.

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.

INGESTION:

NA

OCC 11867

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

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 not intended to be all-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

II. HEALTH HAZARD INFORMATION (Continued)

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 CNS (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.

HEALTH HAZARD 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(s) from pre-existing disorders may be aggravated by exposure to this product.

Other Health Effects: Listed as a known 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. HAZARDOUS INGREDIENTS

MATERIAL OR COMPONENT	HAZARD DATA	CAS NUMBER	%
Vinyl Chloride Monomer	PEL= 1.0 ppm* PEL CEILING 5ppm/15 min TLV= 5.0 ppm (human carcinogen)	75-01-4	100

*OSHA Action Level 0.5 ppm

OCC 11868

See Section II & X

This material is listed in the TSCA Inventory.
This material is listed as carcinogen - IARC, NTP, OSHA

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 CO2.

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.

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:

ND

PERSONAL/AREA:

ND

OCC 11869

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: ND
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

OSHA Standard 29CFR 1910.1200 requires that information be provided 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.

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.

WARNING LABEL INFORMATION

Occidental Chemical Corporation
Electrochemicals, Detergents & Specialty Products Group
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:

CANCER HAZARD: OVEREXPOSURE MAY CREATE CANCER RISK.
EXTREMELY FLAMMABLE
LIQUID CONTACT CAN CAUSE BURNS TO EYES AND SKIN
HIGH CONCENTRATIONS MAY CAUSE CNS DEPRESSION AND KIDNEY/LIVER DAMAGE

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:

IN CASE OF CONTACT:

FOR EYES:

If direct liquid contact occurs, immediately flush eyes with a directed stream of water. 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, GET MEDICAL ATTENTION.

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.

HMIS RATING SYSTEM: HEALTH 3* FLAMMABILITY 4 REACTIVITY 2

FOR INDUSTRIAL USE ONLY

LABEL 102287M9192

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

DOT Hazard Label: Flammable gas

DOT Shipping Name: Vinyl Chloride, Flammable Gas, UN 1086, RQ 1 1b.

OCC 11873