

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

March, 1978

SECTION I

MANUFACTURER'S NAME

PPG Industries, Inc.

EMERGENCY TELEPHONE NO.

(412) 434-3131

ADDRESS (Number, Street, City, State, and ZIP Code)

One Gateway Center, Pittsburgh, PA 15222

CHEMICAL NAME AND SYNONYMS

Vinyl Chloride Monomer

TRADE NAME AND SYNONYMS

Vinyl Chloride, VCM

CHEMICAL FAMILY

Chlorinated Hydrocarbon

FORMULA

$\text{CH}_2 = \text{CHCl}$

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
Vinyl Chloride Monomer				100	1 ppm

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	7.0	SPECIFIC GRAVITY (H ₂ O=1) @ 20/20° C	0.9121
VAPOR PRESSURE (mm Hg.) @20° C	2580	PERCENT VOLATILE BY VOLUME (%)	100
VAPOR DENSITY (AIR=1)	2.15	EVAPORATION RATE ethyl ether =1)	1
SOLUBILITY IN WATER	Negligible		
APPEARANCE AND ODOR	Clear, colorless liquified gas under pressure; mild, sweet odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	-108° F (Cleveland Open Cup)	FLAMMABLE LIMITS	Lel	Uel
			3.6%	33%
EXTINGUISHING MEDIA	Carbon dioxide or dry chemical for small fires (see attached sheet).			
SPECIAL FIRE FIGHTING PROCEDURES	See attached sheet.			
UNUSUAL FIRE AND EXPLOSION HAZARDS	Burns to form toxic and corrosive gases, mostly hydrogen chloride.			

SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE	See attached sheet
EFFECTS OF OVEREXPOSURE	See attached sheet
EMERGENCY AND FIRST AID PROCEDURES	See attached sheet

SECTION VI - REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID Exposure to materials listed below
	STABLE	X	
INCOMPATIBILITY (Materials to avoid) Oxygen, moisture, polymerization initiators, copper, aluminum			
HAZARDOUS DECOMPOSITION PRODUCTS Hydrogen chloride, carbon monoxide and possible traces of phosgene			
HAZARDOUS POLYMERIZATION	MAY OCCUR	X	CONDITIONS TO AVOID Contamination with materials listed above.
	WILL NOT OCCUR		

SECTION VII - SPILL OR LEAK PROCEDURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	See attached sheet
WASTE DISPOSAL METHOD	Vinyl chloride evaporates completely, but adequate ventilation must be provided to prevent explosive mixtures. OSHA standard must also be followed.

SECTION VIII - SPECIAL PROTECTION INFORMATION			
RESPIRATORY PROTECTION (Specify type) NIOSH/MESA approved for concentrations as specified in OSHA Standard (29 CFR 1910.1000)			
VENTILATION	LOCAL EXHAUST	Sufficient to maintain workplace concentration below TLV while maintaining compliance with EPA air emission standards.	SPECIAL
			OTHER
PROTECTIVE GLOVES	Neoprene	EYE PROTECTION Chemical safety goggles used in accordance with 29 CFR 1910.133.	
OTHER PROTECTIVE EQUIPMENT Neoprene boots, hard hat, protective clothing.			

SECTION IX - SPECIAL PRECAUTIONS	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	See attached sheet.
OTHER PRECAUTIONS	See attached sheet.

ADDENDUM TO MATERIAL SAFETY DATA
SHEET ON VINYL CHLORIDE MONOMER (MARCH, 1978)

SECTION IV -- FIRE AND EXPLOSION HAZARD

Special Firefighting Procedures

For any VCM fire, immediately evacuate area. Only firefighters equipped with pressure-demand self-contained breathing apparatus should be allowed in area. Use water spray to cool equipment. For small fires, extinguish with carbon dioxide or dry chemical agents and while continuing to cool equipment and attempt to close off source of leak.

There is no known effective extinguishing agent for large fires. Therefore, if source of leak cannot be closed off, continue cooling equipment with streams of water to avoid tank rupture and explosion and allow fire to self extinguish. No one without proper respiratory protection should enter an area where there has been a fire until the area has been thoroughly ventilated and checked to be sure the monomer concentration is below the OSHA Permissible Exposure Limit.

SECTION V -- HEALTH HAZARD DATA

Threshold Limit Value

The current OSHA Permissible Exposure Limit is as follows: (1) no employee may be exposed to vinyl chloride at concentrations greater than 1 ppm averaged over any 8-hour period; (2) no employee may be exposed to vinyl chloride at concentrations greater than 5 ppm averaged over any period not exceeding 15 minutes; and (3) no employee may be exposed to vinyl chloride by direct contact with liquid vinyl chloride (29 CFR 1910.1000).

Effects of Overexposure

Vinyl chloride monomer is a cancer suspect agent. Human exposure should be maintained at or below OSHA Permissible Exposure Limits. Acute over-exposures can cause lung irritation, dizziness and anesthesia. High concentrations can cause helplessness and unconsciousness on short exposure.

Emergency and First Aid Procedures

Inhalation Overexposure -- Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

Eye Contact -- Flush immediately with water for at least 15 minutes. Call a physician.

Skin Contact - Wash thoroughly with soap and water while removing contaminated clothing and shoes. Call a physician. Thoroughly clean contaminated clothing and shoes before reuse or discard.

SECTION VII -- SPILL OR LEAK PROCEDURESSteps to be taken in case material is released or spilled

Immediately evacuate area, remove all sources of ignition and provide maximum ventilation. Only personnel equipped with appropriate respiratory and skin/eye protection should be allowed in area. Close off source of leak and allow all spilled material to evaporate. Then wash area of spill with plenty of soap and water. Continue to thoroughly ventilate area and do not allow unprotected personnel to enter area until monomer concentration is below OSHA Permissible Exposure Limit.

SECTION IX -- SPECIAL PRECAUTIONSPrecautions to be taken in handling and storing

- Before unloading, purge oxygen from unloading system.
- Container and system must be electrically grounded before unloading.

Other Precautions

- Keep away from heat, sparks and flames
- Do not breath gas.
- Use only with ventilation sufficient to limit employee exposure below OSHA permissible exposure limits.
- Avoid contact with eyes, skin or clothing.

REFERENCES

1. OSHA Standard on Vinyl Chloride (29 CFR § 1910.1017)
2. PPG Industries Vinyl Chloride Manual (Handling and Properties) A-994-115C (September, 1977)