

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

Form Approved
OMB No. 44-R-1387

MATERIAL SAFETY DATA SHEET

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

September, 1978

SECTION I

MANUFACTURER'S NAME PPG Industries, Inc.		EMERGENCY TELEPHONE NO. (304) 843-1300
ADDRESS (Number, Street, City, State, and ZIP Code) One Gateway Center, Pittsburgh, PA 15222		
CHEMICAL NAME AND SYNONYMS ethylene and 30% Methylene chloride		TRADE NAME AND SYNONYMS CSM-211
CHEMICAL FAMILY Chlorinated hydrocarbons	FORMULA Perchlor C ₂ Cl ₄ , Methylene Chloride CH ₂ Cl ₂	

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 (By Weight)				%	TLV (Units)
Stabilized Perchloroethylene				70	100 ppm
Stabilized Methylene Chloride				30	500 ppm

SECTION III - PHYSICAL DATA

BOILING POINT (°F.) (65.7°C)	150.3	SPECIFIC GRAVITY (H ₂ O=1)	1.54
VAPOR PRESSURE (mm Hg.) @25°C	115	PERCENT VOLATILE BY VOLUME (%)	100
VAPOR DENSITY (AIR=1) @20°C	4.2	EVAPORATION RATE (_____=1)	Unknown
SOLUBILITY IN WATER g/100g H ₂ O	0.007		
APPEARANCE AND ODOR	Clear, colorless liquid, ethereal odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) None (closed and open cup)	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA Water, CO ₂ or dry chemical (for fires involving CSM-211)			
SPECIAL FIRE FIGHTING PROCEDURES - Wear NIOSH/MHSA-approved, self-contained breathing apparatus. Chlorinated solvents involved in fires and high intensity ignition sources (above 1300°F) can decompose to hydrogen chloride gas and possible traces of phosgene.			
UNUSUAL FIRE AND EXPLOSION HAZARDS Vapors can be ignited by high intensity source of ignition (above 1300°F)			
Burning forms hydrochloric acid, hydrogen chloride vapors and traces of phosgene.			

SECTION V - HEALTH HAZARD DATA	
THRESHOLD LIMIT VALUE	See attached sheet
EFFECTS OF OVEREXPOSURE	May cause cancer in experimental laboratory animals (mice) (See attached sheet)
EMERGENCY AND FIRST AID PROCEDURES	See attached sheet

SECTION VI - REACTIVITY DATA			
STABILITY	UNSTABLE		CONDITIONS TO AVOID Avoid flames, hot glowing sur- faces, electrical arcs.
	STABLE	X	
INCOMPATIBILITY (Materials to avoid) None known			
HAZARDOUS DECOMPOSITION PRODUCTS HCl and possible traces of phosgene			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID None
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	See attached sheet
WASTE DISPOSAL METHOD	EPA-approved incineration or contact local waste disposal contractor.

SECTION VIII - SPECIAL PROTECTION INFORMATION		
RESPIRATORY PROTECTION (Specify type) See attached sheet		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General) Sufficient to maintain workplace concentration below TLV	
PROTECTIVE GLOVES	Polyethylene, neoprene or polyvinyl alcohol	EYE PROTECTION Splash-proof goggles
OTHER PROTECTIVE EQUIPMENT Eye-wash fountain		

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 CSM-211

(SEPTEMBER, 1978)

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value

The individual TLV's are 100 ppm for perchlor and 500 ppm for methylene chloride. Consult 29 CFR 1910.1000 for details on the method for calculating permissible exposure limits for mixtures.

Acute Toxicity Values

No tests have been run on this blend of solvents. The following is data on the toxicity of the individual components.

Perchloroethylene⁽¹⁾--Oral LCL₀ (rabbit): 5,000 mg/kg
Inhalation LCL₀ (rat): 4,000 ppm (four-hours)

Methylene Chloride⁽²⁾--Oral LD₅₀ (rat): 2,136 mg/kg
Inhalation LCL₀ (guinea pig): 5,000 ppm/2 hours
Inhalation TCL₀* (human): 500 ppm/8 hours

Effects of Overexposure

Acute⁽³⁾

Irritant and central nervous system depressant. Inhalation can cause irritation of the respiratory tract, dizziness, nausea, headache, loss of coordination and equilibrium, unconsciousness and even death in confined or poorly ventilated areas.

Research⁽⁴⁾ has recently shown that methylene chloride is metabolized by the body to carbon monoxide. Further, the amount of carbon monoxide formed is directly related to the amount of methylene chloride absorbed and can be sufficient to produce a substantial stress on the cardiovascular system through the elevation of the level of carboxyhemoglobin (COHb)--the product formed by the combination of carbon monoxide and the blood's hemoglobin, thus effectively reducing the amount of hemoglobin available for the formation of oxyhemoglobin.

Employees working with this blend of perchlor and methylene chloride should be made aware of this hazard. Further, employees with a history or even a suspicion of having cardiovascular disease should not be exposed to methylene chloride for any length of time.

Eye contact can result in irritation, pain and discomfort. Prolonged or repeated contact with the skin can cause irritation and dermatitis.

Chronic

May cause narcosis, pulmonary congestion and liver and kidney damage upon prolonged or repeated inhalation of vapor.

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.

Note to Physician

Avoid use of adrenalin in any case where a person has been overcome by perchloroethylene or methylene chloride.

Eye Contact

Flush with plenty of water for at least fifteen minutes. If irritation occurs, consult a physician.

Skin Contact

Wash thoroughly with plenty of soap and water. If irritation occurs, consult a physician.

Swallowing

If conscious, drink a quart of water then induce vomiting by placing a finger far back in the throat. Call a physician. If vomiting cannot be induced, take immediately to a hospital or a physician. If unconscious or in convulsions, take immediately to a hospital or physician. DO NOT induce vomiting or give anything by mouth.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled

Immediately evacuate area and provide maximum ventilation. Only personnel equipped with proper respiratory and skin/eye protection should be allowed in area. Collect spilled material on sawdust or vermiculite and sweep into closed containers for disposal. Then flush area with plenty of water and maintain ventilation until vapors are eliminated.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection

NIOSH/MHSA-approved organic vapor respirator for concentrations below 1,000 ppm. For 1,000 ppm and above, use air-supplied respiratory protection. Consult 29 CFR 1910.134 for details.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing

- o Do not use in poorly ventilated or confined spaces.
- o Keep containers tightly closed when not in use.
- o Do not store in open, unlabeled or mislabeled containers.

Other Precautions

- o Avoid prolonged or repeated breathing of vapor.
- o Use only with ventilation sufficient to limit employee exposure as far below OSHA permissible exposure limit as practical.
- o Avoid contact with eyes.
- o Avoid prolonged or repeated contact with skin.
- o Do not take internally.

REFERENCES

- 1) NIOSH Registry of Toxic Effects of Chemical Substances. 1975
- 2) Ibid
- 3) Industrial Hygiene and Toxicology, Volume II, Second Edition, F. A. Patty, 1963
- 4) Journal of the American Medical Association, Volume 235, Number 4 (January 26, 1976)