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MATERIAL SAFETY DATA SHEET

I - IDENTIFICATION		
CHEMICAL NAME Dichloromethane	CHEMICAL FORMULA CH₂Cl₂	MOLECULAR WEIGHT 84.94
TRADE NAME TWIN DEGREASER 234		
SYNONYMS Methylene Chloride		DOT IDENTIFICATION NO. UN 1593

II - PRODUCT AND COMPONENT DATA			
COMPONENT(S) CHEMICAL NAME Dichloromethane	CAS REGISTRY NO. 75-09-2	% (Approx) 100	ACGIH TLV-TWA 100 ppm

III - PHYSICAL DATA	
APPEARANCE AND ODOR Clear, colorless liquid; mildly sweet odor	SPECIFIC GRAVITY 1.32 @ 25/25°C
BOILING POINT 40.1°C. (104°F.)	VAPOR DENSITY IN AIR (Air = 1) 2.9
VAPOR PRESSURE 350 mm Hg @ 20°C	% VOLATILE, BY VOLUME 100
EVAPORATION RATE (ether = 1): 0.7	SOLUBILITY IN WATER 1.32 gm/100 gm @ 25°C

IV - REACTIVITY DATA	
STABILITY Stable	CONDITIONS TO AVOID Avoid contact with open flame, electric arcs, or other hot surfaces which can cause thermal decomposition.
INCOMPATIBILITY (Materials to avoid) Strong alkalis, oxygen, nitrogen peroxide, sodium, potassium, and other oxidizers and reactive metals.	
HAZARDOUS DECOMPOSITION PRODUCTS Hydrogen chloride, phosgene, chlorine.	
HAZARDOUS POLYMERIZATION Will not occur.	

V - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)

None (TCC)

FLAMMABLE LIMITS IN AIR

12 - 19% (Vol.) @ 100°C

EXTINGUISHING AGENTS

Water fog, dry chemical, foam, carbon dioxide

UNUSUAL FIRE AND EXPLOSION HAZARDS

Concentrated vapors can be ignited by high intensity ignition source. Firefighters should wear self-contained positive pressure breathing apparatus due to thermal decomposition products, and avoid skin contact.

VI - TOXICITY AND FIRST AID

EXPOSURE LIMITS (When exposure to this product and other chemicals is concurrent, the TLV must be defined in the workplace.)

ACGIH: 100 ppm TWA (8 hr) 500 ppm STEL
OSHA: 500 ppm TWA (8 hr) 1,000 ppm Ceiling (for peak value concentration refer to 29 CFR 1910.1000 Table Z-2)

(Odor threshold approximately 200-300 ppm; causes olfactory fatigue)

Consumption of alcoholic beverages may increase the potential for development of toxic effects resulting from exposure to this product.

Effects described in this section are believed not to occur if exposures are maintained at or below appropriate TLVs. Because of the wide variation in individual susceptibility, TLVs may not be applicable to all persons and those with medical conditions listed below.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Alcoholism, acute and chronic liver and kidney disease, chronic lung disease, anemia, coronary disease or rhythm disorders of the heart.

ACUTE TOXICITY Primary route(s) of exposure: Inhalation Skin Absorption Ingestion

Inhalation: Major route of potential exposure. Methylene chloride depresses the central nervous system. Concentrations between 900-1,000 ppm may cause dizziness. Nausea, headache, and vomiting can occur at concentrations above 2,000 ppm. At 7,000 ppm, numbness and tingling in arms and legs and rapid heartbeat have occurred. Loss of consciousness and death have occurred at levels above 9,000 ppm, if exposure is prolonged.

Carboxyhemoglobin levels can be elevated in persons exposed to methylene chloride and can cause a substantial stress on the cardiovascular system. This elevation can be additive to the increase caused by smoking and other carbon monoxide sources.

Skin: Liquid methylene chloride is painful and irritating if confined to skin by gloves, clothing, etc. Prolonged or repeated contact may cause irritation, defatting of skin, and dermatitis. Absorption of liquid through intact skin is possible if contact with liquid is prolonged.

Eyes: Liquid may cause temporary irritation with temporary corneal injury. Vapors may irritate eyes.

Ingestion: Single dose toxicity low to moderate. If vomiting occurs, methylene chloride can be aspirated into lungs, which can cause chemical pneumonia and systemic effects.

FIRST AID

Inhalation: Remove to fresh air. If breathing has stopped, administer artificial respiration. Call a physician.

Skin: Remove contaminated clothing and shoes. Wash exposed area thoroughly with large quantities of water, for at least 15 minutes. Wash contaminated clothing before reuse.

Eyes: Flush eyes immediately with water for at least 15 minutes. If irritation persists, call a physician.

Ingestion: Do not induce vomiting. Contact physician or emergency medical facility immediately.

NOTE TO PHYSICIAN: Adrenalin should never be given to person overexposed to methylene chloride.

The finding of chronic toxic effects in laboratory animals may indicate toxicity to humans. Overexposure should be avoided, failure to do so could result in injury, illness or even death.

Chronic overexposures to methylene chloride have caused liver and kidney toxic effects in experimental animals.

Carcinogenicity: Methylene chloride has been evaluated for possible cancer causing effects in laboratory animals. Inhalation studies at concentrations of 2,000, and 4,000 ppm increased the incidence of malignant liver and lung tumors in mice. Three inhalation studies of rats have shown increased incidence of benign mammary gland tumors in female rats at concentrations of 500 ppm and above and increases in benign mammary gland tumors in males at concentrations of 1,500 ppm and above. Rats exposed to 50 and 200 ppm via inhalation showed no increased incidence of tumors. Mice and rats exposed by ingestion at levels up to 250 mg/kg/day lifetime and hamsters exposed via inhalation to concentrations up to 3,500 ppm lifetime did not show an increased incidence of tumors.

The International Agency for Research on Cancer (IARC) has concluded that there is sufficient evidence for the carcinogenicity of methylene chloride to experimental animals, and inadequate evidence for the carcinogenicity of methylene chloride to humans, resulting in a classification as a 2B animal carcinogen on the IARC list. The NTP has identified methylene chloride as an animal carcinogen, but it is not on the OSHA or NTP lists as of February 28, 1988.

Epidemiology studies of 751 humans chronically exposed to methylene chloride in the workplace of which 252 were exposed for a minimum of 20 years did not demonstrate any increase in deaths caused by cancer or cardiac problems. A second study of 2,227 workers confirmed these results.

Reproductive Toxicity: Reproductive toxicity tests have been conducted to evaluate the adverse effects methylene chloride may have on reproduction and offspring of laboratory animals. The results indicate that methylene chloride does not cause birth defects in laboratory animals.

VII - PERSONAL PROTECTION AND CONTROLS

RESPIRATORY PROTECTION

Where vapor concentration exceeds or is likely to exceed 100 ppm, an approved full face respirator with organic vapor cannister is acceptable. Approved self-contained breathing apparatus or air line respirator, with full facepiece, is required for vapor concentrations above 1,000 ppm and for spills and/or emergencies. Follow any applicable respirator use standards and regulations.

VENTILATION

Do not use in closed or confined space. Open doors and/or windows. Use ventilation to maintain exposure levels below 100 ppm (TWA).

SKIN PROTECTION

Wear solvent-resistant gloves such as Viton, polyvinyl alcohol, or equivalent. Solvent-resistant boots, apron, headgear and/or faceshield should be worn where splashing is possible.

EYE PROTECTION

Wear safety glasses. Contact lenses should not be worn. Chemical goggles and/or face shields should be worn where splashing is possible.

HYGIENE

Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking, or using restroom. Any clothing or shoes which become contaminated with methylene chloride should be removed immediately and thoroughly laundered before wearing again.

OTHER CONTROL MEASURES

To determine exposure level(s), monitoring should be performed regularly. Safety shower and eyewash station should be available.

NOTE: Protective equipment and clothing should be selected, used, and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer

VIII - STORAGE AND HANDLING PRECAUTIONS

Follow protective controls set forth in Section VII when handling this product.

Store labeled, sealed containers in a cool, dry, well-ventilated area out of sunlight. Prevent water or moist air from entering storage tanks or containers. Do not cut or weld on empty or full drums. Aluminum equipment should not be used for storage and/or transfer.

Vapors are heavier than air and will collect in low areas.

Contact with aluminum parts in a pressurizable fluid system may cause violent reactions. Consult equipment supplier for further information.

Do not remove or deface label.

Do not reuse drum without recycling or reconditioning in accordance with any applicable federal, state or local laws.

IX - SPILL LEAK AND DISPOSAL PRACTICES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Evacuate the area, ventilate, and avoid breathing vapors. Dike area to contain spill. Clean up area (wear protective equipment - refer to Section VII) by mopping or with absorbent material and place in closed containers for disposal. Avoid contamination of ground and surface waters. Do not flush to sewer.

If spill occurs indoors, turn off air conditioning and/or heating system, to prevent vapors from contaminating entire building.

WASTE DISPOSAL METHOD

Recovered liquids may be sent to a licensed reclaimer or incineration facility. Contaminated material must be disposed of in a permitted waste management facility. Consult federal, state, or local disposal authorities for approved procedures.

X - TRANSPORTATION

DOT HAZARD CLASSIFICATION

None by land or water transportation when containers are less than 1000 lbs each. ORM-A when containers are more than 1000 lbs each or when transported by air in any size container.

PLACARD REQUIRED

None

LABEL REQUIRED

Label as required by OSHA Hazard Communication Standard, and any applicable state and local regulations. Use Harmful label when transported by air.

DATE OF PREPARATION: March 1, 1988

NOTICE: Vulcan Chemicals believes that the information contained on this Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules or insurance requirements.

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Form 3239-520

VMC-3239