

MATERIAL SAFETY DATA SHEET PRODUCT INFORMATION
24 HOUR EMERGENCY #: 1-800-255-3924

PRODUCT NAME: 1500
PRODUCT CODE: DYMEL 134A
PRODUCT USE: DUST AWAY
CHEMICAL FAMILY/FORMULA: HALOGENATED HYDROCARBON/CH2FCF3

REVISED: 22 JAN 93

NFCA-HMIS RATINGS: HEALTH - 1; FLAMMABILITY - 0; REACTIVITY - 1;
PERSONAL PROTECTION RATING TO BE SUPPLIED BY USER
DEPENDING ON USE CONDITIONS.

COMPONENTS

MATERIAL: ETHANE, 1,1,1,2-TETRAFLUORO ("DYMEL" 134a)
CAS #: 811-97-2
PERCENT: 100

PHYSICAL DATA

BOILING POINT: -26.2°C (-15.2°F) AT 736 mm Hg
VAPOR PRESSURE: 96 psia at 25 deg C (77 deg F)
VAPOR DENSITY: 3.18 (Air=1.0)
% VOLATILES: 100 WT %
WATER SOLUBILITY: 0.15 WT % at 25°C (77°F) and 14.7 psia
ODOR: Slight ethereal
FORM: Liquefied gas
COLOR: Clear, colorless
DENSITY: 1.21 g/cc at 25 deg C (77 deg f) - Liquid

HAZARDOUS REACTIVITY

INSTABILITY: Material is stable. However, avoid open flames and high temperatures.
INCOMPATIBILITY: Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc.
POLYMERIZATION: Polymerization will not occur.
DECOMPOSITION: Decomposition products are hazardous. "DYMEL" 134a can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride.

FIRE AND EXPLOSION DATA

FLASH POINT: Will not burn.
METHOD: TOC
FLAMMABLE LIMITS IN AIR, % BY VOLUME LEL: Not applicable
UEL: Not applicable

AUTOIGNITION: >750°C (>1,382°F)
"DYMEL" 134a is not flammable at ambient temperatures and atmospheric pressure. However, "DYMEL" 134a has been shown in tests to be combustible at pressures as low as 5.5 psig at 177 deg C (351 deg F) when mixed with air at concentrations of generally more than 60 volume % air. At lower temperatures, higher pressures are required for combustibility. Experimental data have also been reported which indicates combustibility of

"DYMEL" 134a in the presence of certain concentrations of chlorine.

FIRE AND EXPLOSION HAZARDS: Cylinders may rupture under fire conditions. Decomposition may occur.

EXTINGUISHING MEDIA: As appropriate for combustibles in area.
SPECIAL FIRE FIGHTING INSTRUCTIONS: Cool cylinders with water spray. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions.

HEALTH HAZARD INFORMATION

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness or death. Intentional misuse or deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite.

ANIMAL DATA: Inalation 4-hour ALC: 567,000 ppm in rats

The compound is untested for skin and eye irritancy, and is untested for animal sensitization. No toxic effects were seen in animals from exposures by inhalation to concentrations up to 81,000 ppm. Lethargy and rapid respiration were observed at a vapor concentration of 205,000 ppm and pulmonary congestion, edema, and central nervous system effects occurred at a vapor concentration of 750,000 ppm. Cardiac sensitization occurred in dogs at 75,000 ppm from the action of exogenous epinephrine. No effects in animals occurred from repeated inhalation exposure to 99,000 ppm for two weeks or to 50,000 ppm for three months. No adverse effects were observed in male and female rats fed 300 mg/kg/day of "DYMEL" 134a for 52 weeks. Animal testing indicates that this compound does not have carcinogenic or mutagenic effects. Inhalation of 50,000 ppm for two years caused an increase in benign testicular tumors in male rats. No effects were observed at lower concentrations. The tumors were late-occurring and were judged not to be life-threatening. Embryotoxic activity has been observed in some animal tests but only at maternally toxic dose levels.

HUMAN HEALTH EFFECTS;

Overexposure by inhalation to very high concentrations may cause temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Skin contact with the liquid may cause frostbite.

Individuals with pre-existing diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

CARCINOGENICITY: None of the components in this material is listed by IARC, NTP, OSHA, OR ACGIH as carcinogen.

APPLICABLE EXPOSURE LIMITS:

ETHANE, 1,1,1,2-TETRAFLUORO-("DYMEL" 134a)
AEL * (Du Pont) 1000 ppm (8 & 12 hr TWA)
TLV (ACGIH) None Established
PEL (OSHA) None Established
WEEL (AIHA) 1000 ppm, 8 Hr. TWA

* AEL is Du Pont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SAFETY PRECAUTIONS: Avoid contact with eyes. Avoid contact with skin. Avoid breathing vapors. Use with sufficient ventilation to keep employee exposure below recommended limits. "DYMEL" 134a should not be mixed with air for leak testing or used with air for any other purpose above atmospheric pressure. Contact with chlorine or other strong oxidizing agents should also be avoided.

FIRST AID

INHALATION: If high concentrations are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician. Treat for frostbite if necessary by gently warming affected area. Wash contaminated clothing before reuse.

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION: Ingestion is not considered a potential route of exposure.

NOTES TO PHYSICIAN: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should only be used with special caution in situations of emergency life support.

PROTECTION INFORMATION

GENERALLY APPLICABLE CONTROL MEASURES AND PRECAUTIONS: Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

PERSONAL PROTECTIVE EQUIPMENT: Impermeable gloves and chemical splash goggles should be used when handling liquid. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

DISPOSAL INFORMATION

SPILL, LEAK, OR RELEASE: NOTE: Review FIRE AND EXPLOSION HAZARDS and SAFETY PRECAUTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

Ventilate area, especially low or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) if large spill or leak occurs.

WASTE DISPOSAL: Contaminated "DYMEL" 134a can be recovered by distillation or removed to a permitted waste disposal facility. Comply with Federal, State, and local regulations.

SHIPPING INFORMATION

FOR GROUND TRANSPORTATION:
Proper shipping name: 1,1,1,2 TETRAFLUOROETHANE
Hazard Class: NON-FLAMMABLE REFRIGERANT GAS NOS-2.2
UN NUMBER: 1078

AIR SHIPMENTS:
Proper shipping name: 1,1,1,2 TETRAFLUOROETHANE
Hazard Class: NON-FLAMMABLE GAS 2.2
UN NUMBER: 3159

STORAGE CONDITIONS

Clean, dry area. Do not heat above 52 deg C (125 deg F).

TITLE III HAZARD CLASSIFICATIONS

ACUTE: Yes FIRE: No PRESSURE: Yes
CHRONIC: Yes REACTIVITY: No
LISTS: Extremely Hazardous Substance: No
 CERCLA Hazardous Substance: No
 Toxic Chemicals: No

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