

E I DUPONT -- FREON 13B1 REFRIGERANT - MONOCHLORODIFLUOROMETHANE, TECHNICAL
MATERIAL SAFETY DATA SHEET
E I DUPONTNSN: 6830013103406
Manufacturer's CAGE: 73925
Part No. Indicator: A
Part Number/Trade Name: FREON 13B1 REFRIGERANT

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General Information
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Item Name: MONOCHLORODIFLUOROMETHANE, TECHNICAL
Company's Name: E I DUPONT DE NEMOURS & CO INC
Company's Street: 1251 BRANDYWINE BLDG
Company's City: WILMINGTON
Company's State: DE
Company's Country: US
Company's Zip Code: 19898
Company's Emerg Ph #: 800-441-3637;800-424-9300 (CHEMTREC)
Company's Info Ph #: 800-441-9450;302-999-5072
Record No. For Safety Entry: 009
Tot Safety Entries This Stk#: 009
Status: SMJ
Date MSDS Prepared: 01MAY89
Safety Data Review Date: 05MAR92
MSDS Preparer's Name: K.P. BROWN
Preparer's Company: DUPONT CO
Preparer's St Or P. O. Box: PO BOX 80709
Preparer's City: WILMINGTON
Preparer's State: DE
Preparer's Zip Code: 19880-0709
MSDS Serial Number: BNMQP
Hazard Characteristic Code: NK

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Ingredients/Identity Information
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Proprietary: NO
Ingredient: METHANE, BBROMOTRIFLUORO-;
Ingredient Sequence Number: 01
Percent: 100
NIOSH (RTECS) Number: PA5425000
CAS Number: 75-63-8
OSHA PEL: 1000 PPM (MFR)
ACGIH TLV: 1000 PPM (MFR)

Proprietary: NO
Ingredient: SUPP DATA:CAUSE TEMP ALTERATION OF THE HEART'S ELEC ACTIVITY
W/IRREG PULSE, PALPITATIONS, OR INADEQ CIRCULATION. (ING 3)
Ingredient Sequence Number: 02
NIOSH (RTECS) Number: 9999999ZZ
OSHA PEL: NOT APPLICABLE
ACGIH TLV: NOT APPLICABLE

Proprietary: NO
Ingredient: ING 2:SKIN/EYE CONT W/LIQ MAY CAUSE FROSTBITE. INDIVIDUALS W/
PREEXISTING DISEASES OF CENTRAL NERV/CARDIOVASCULAR (ING 4)
Ingredient Sequence Number: 03
NIOSH (RTECS) Number: 9999999ZZ
OSHA PEL: NOT APPLICABLE

ACGIH TLV: NOT APPLICABLE

Proprietary: NO

Ingredient: ING 3:SYS MAY HAVE INCREASED SUSCEPTIBILITY TO TOXICITY OF EXCESSIVE EXPOSURES.

Ingredient Sequence Number: 04

NIOSH (RTECS) Number: 9999999ZZ

OSHA PEL: NOT APPLICABLE

ACGIH TLV: NOT APPLICABLE

Proprietary: NO

Ingredient: FIRST AID PROC: EPINEPHRINE, SHOULD BE CONSIDERED ONLY AS LAST RESORT IN LIFE-THREATENING EMERGENCIES.

Ingredient Sequence Number: 05

NIOSH (RTECS) Number: 9999999ZZ

OSHA PEL: NOT APPLICABLE

ACGIH TLV: NOT APPLICABLE

Proprietary: NO

Ingredient: VENT: USED IN LOW PLACES.

Ingredient Sequence Number: 06

NIOSH (RTECS) Number: 9999999ZZ

OSHA PEL: NOT APPLICABLE

ACGIH TLV: NOT APPLICABLE
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Physical/Chemical Characteristics

Appearance And Odor: CLEAR, LIQUIFIED GAS, COLORLESS, SLIGHT ETHEREAL ODOR.

Boiling Point: -72F,-58C

Vapor Pressure (MM Hg/70 F): SUPP DATA

Vapor Density (Air=1): 5.14@25C

Evaporation Rate And Ref: >1(CCL*4=1)

Solubility In Water: 0.03 WT%@25C

Percent Volatiles By Volume: 100

pH: NEUT
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Fire and Explosion Hazard Data

Flash Point: WILL NOT BURN

Lower Explosive Limit: N/A

Upper Explosive Limit: N/A

Extinguishing Media: AS APPROPRIATE FOR COMBUSTIBLES IN AREA.

Special Fire Fighting Proc: WEAR NIOSH/MSHA APPROVED SCBA AND FULL PROTECTIVE EQUIPMENT (FP N). USE WATER SPRAY OR FOG TO COOL CONTAINERS.

Unusual Fire And Expl Hazrds: CYLINDERS ARE EQUIPPED WITH TEMPERATURE AND PRESSURE RELIEF DEVICES BUT MAY STILL RUPTURE UNDER FIRE CONDITIONS. DECOMPOSITION MAY OCCUR.
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Reactivity Data

Stability: YES

Cond To Avoid (Stability): AVOID EXTENDED CONTACT WITH OPEN FLAMES OR TEMPERATURES >1000F.

Materials To Avoid: ALKALI OR ALKALINE EARTH METALS-POWDERED AL, ZN, BE, ETC.

Hazardous Decomp Products: FREON 13B1 REFRIGERANT MAY BE DECOMP BY HIGH

TEMP (OPEN FLAMES, GLOWING METAL SURF, ETC) FORM FREE BROMINE & (SUPP DATA)
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT.

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Health Hazard Data
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LD50-LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: INHAL OF HIGH CONC OF VAP IS HARMFUL & MAY CAUSE HEART IRREG, UNCON, OR DEATH. INTENTIONAL MISUSE CAN BE FATAL. VAP REDUCES O*2 AVAIL FOR BRTHG & IS HVR/AIR. LIQ CONT CAN CAUSE FROSTBITE. EFTS SEEN IN ANIMALS FROM EXPOS BY INHAL RANGE FROM "NO OBSERVED ADVERSE EFTS" @ LOW TO MOD CONC TO CNS SYS EFTS (EFTS OF OVEREXP)
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NOT RELEVANT.
Signs/Symptoms Of Overexp: HLTH HAZ:@ HIGH (4%) CONC. PNEUM, LIVER, & KIDNEY EFTS WERE SEEN IN ANIMALS EXPOS BY INHAL TO LETHAL/NEAR LETHAL CONC. CARDIAC SENSIT WAS OBSERVED IN DOGS EXPOS TO CONC OF 7.5% HIGHER. ANIMAL TEST INDICATES THAT THIS CMPD DOES NOT HAVE MUTAGENIC OR EMBRYOTOX EFTS. NO ANIMAL TEST RPTS ARE AVAIL TO DEFINE (SUPP DATA)
Med Cond Aggravated By Exp: INDIVIDUALS WITH PRE-EXISTING DISEASES OF THE CNS OR CARDOIVASCULAR SYSTEM MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF EXCESSIVE EXPOSURES.
Emergency/First Aid Proc: INHAL:IMMED REMOVE TO FRESH AIR. KEEP PERSONS CALM. IF NOT BRTHG, GIVE ARTF RESP, IF BRTHG IS DFCLT, GIVE O*2. CALL PHYS. SKIN:FLUSH W/H*20. TREAT FOR FROSTBITE IF NEC. EYE:IMMED FLUSH W/PLENTY OF H*20 FOR @ LST 15 MIN. CALL PHYS. INGEST:INGEST IS NOT CONSIDERED A POTNTL RTE OF EXPOS. CALL MD (FP N). NOTE TO PHYS:BECAUSE OF POSS DISTURB OF CARDIAC RHYTHM, CATECHOLAMINE DRUGS, SUCH AS (ING 5)

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Precautions for Safe Handling and Use
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Steps If Matl Released/Spill: VENTILATE AREA-ESPECIALLY LOW PLACES WHERE HEAVY VAPORS MIGHT COLLECT. REMOVE OPEN FLAMES. USE NIOSH/MSHA APPROVED SCBA FOR LARGE LEAK OR SPILL.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS. RECLAIM BY DISTILLATION OR REMOVE TO PERMITTED WASTE DISPOSAL FACILITY.
Precautions-Handling/Storing: CLEAN/DRY AREA. DO NOT HEAT ABOVE 125F. AVOID BRTHG VERY HIGH CONC OF VAP. AVOID CONT OF EYES/SKIN W/LIQUID.
Other Precautions: USE WITH SUFFICIENT VENTILATION TO KEEP EMPLOYEE EXPOSURE BELOW RECOMMENDED LIMITS.

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Control Measures
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Respiratory Protection: UNDER NORMAL MANUFACTURING CONDITIONS NO RESPIRATORY PROTECTION IS REQUIRED WHEN USING THIS PRODUCT. NIOSH/MSHA APPROVED SCBA IS REQUIRED IF SPILL OCCURS.
Ventilation: NORM VENT FOR STD MFG PROC IS GENERALLY ADEQ. LOC EXHAUST SHOULD BE USED WHEN LG AMT ARE REL. MECH VENT SHOULD BE (ING 6)
Protective Gloves: LINED BUTYL GLOVES.
Eye Protection: CHEMICAL WORKERS GOGGLES (FP N).

Other Protective Equipment: NONE SPECIFIED BY MANUFACTURER.
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.
Suppl. Safety & Health Data: VP: 235PSIA @25C. HAZ DECOMP:POSSIBLY
CARBONYL HALIDES. EFTS OF OVEREXP: CARCINOGENIC/REPROD HAZ. HUMAN HLTH EFTS
OF OVEREXP BY INHAL MAY INCL: NONSPEC DISCOMFORT, SUCH AS NAUS, HDCH, OR
WEAK; OR TEMP CNS DEPRESS W/EFTS SUCH AS DIZZ/HDCH/CONFUSN, INCOORD, & LOSS
OF CONSCIOUSNESS. HIGER EXPOS (>13%) BY INHAL MAY (ING 2)

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Transportation Data
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Trans Data Review Date: 92212
DOT PSN Code: JET
DOT Proper Shipping Name: METHANE, REFRIGERATED LIQUID OR NATURAL GAS,
REFRIGERATED LIQUID
DOT Class: 2.1
DOT ID Number: UN1972
DOT Label: FLAMMABLE GAS
IMO PSN Code: JOT
IMO Proper Shipping Name: METHANE, REFRIGERATED LIQUID
IMO Regulations Page Number: 2156
IMO UN Number: 1972
IMO UN Class: 2(2.1)
IMO Subsidiary Risk Label: -
IATA PSN Code: QHL
IATA UN ID Number: 1972
IATA UN Class: 2.1
AFI PSN Code: QHL
AFI Symbols: T
AFI Prop. Shipping Name: METHANE, REFRIGERATED LIQUID (CRYOGENIC LIQUID)
OR NATURAL GAS, REFRIGERATED LIQUID
AFI Class: 2.1
AFI ID Number: UN1972
AFI Basic Pac Ref: 6-15

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Disposal Data
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Label Data
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Label Required: YES
Technical Review Date: 05MAR92
Label Date: 03MAR92
Label Status: G
Common Name: FREON 13B1 REFRIGERANT
Chronic Hazard: YES
Signal Word: WARNING!
Acute Health Hazard-Slight: X
Contact Hazard-Moderate: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: STORE IN CLEAN/DRY AREA. DO NOT HEAT ABOVE
125F. AVOID BRTHG VERY HIGH CONC OF VAPORS. AVOID CONT OF EYES/SKIN W/
LIQUID. USE W/SUFFICIENT VENTILATION. ACUTE: INHALATION OF HIGH
CONCENTRATIONS OF VAPOR IS HARMFUL & MAY CAUSE HEART IRREGULARITIES,
UNCONSCIOUSNESS, OR DEATH. INTENTIONAL MISUSE CAN BE FATAL. VAPOR REDUCES
EFFECTS SEEN IN ANIMALS FROM INHAL EXPOS RANGE FROM "NO OBSERVED ADVERSE
EFFECTS" @ LOW TO MODERATE CONCENTRATIONS TO CNS EFFECTS @ HIGH

CONCENTRATIONS. PNEUMONITIS, LIVER & KIDNEY EFTS WERE SEEN IN ANIMALS
EXPOSED BY INHAL TO LETHAL OR NEAR LETHAL CONC.

Protect Eye: Y

Protect Skin: Y

Protect Respiratory: Y

Label Name: E I DUPONT DE NEMOURS & CO INC

Label Street: 1251 BRANDYWINE BLDG

Label City: WILMINGTON

Label State: DE

Label Zip Code: 19898

Label Country: US

Label Emergency Number: 800-441-3637;800-424-9300 (CHEMTREC)