

DU PONT E I DE NEMOURS AND CO INC -- SUVA HP 81 (R 402 B) -- 6830-01-392-0991

===== Product Identification =====

Product ID:SUVA HP 81 (R 402 B)

MSDS Date:12/06/1997

FSC:6830

NIIN:01-392-0991

MSDS Number: CFKVB

=== Responsible Party ===

Company Name:DU PONT E I DE NEMOURS AND CO INC

Address:DU PONT CHEMICALS FLUORCHEMICALS

City:WILMINGTON

State:DE

ZIP:19898

Country:US

Info Phone Num:800-441-9442

E

Emergency Phone Num:800-441-3637

Resp. Party Other MSDS Num.:DU005603

Chemtrec Ind/Phone:(800)424-9300

CAGE:2S827

=== Contractor Identification ===

Company Name:DU PONT FLUOROPRODUCTS

Address:1007 MARKET STREET

Box:City:WILMINGTON

State:DE

ZIP:19898

Country:US

Phone:1-800-441-7515

Contract Num:SP0450-99-M-JT25

CAGE:2S827

===== Composition/Information on Ingredients =====

Ingred Name:ETHANE,PENTAFLUORO- (HFC-125)/PENTAFLUOROETHANE

CAS:354-33-6

= Wt:38.

Other REC Limits:NONE REC

OMMENDED

Ingred Name:METHANE,CHLORODIFLUORO- (HCFC-22)/CHLORODIFLUOROMETHANE
(SARA 313) (CERCLA)

CAS:75-45-6

RTECS #:PA6390000

= Wt:60.

Other REC Limits:NONE RECOMMENDED

OSHA PEL:1000 PPM

ACGIH TLV:1000 PPM; 9596

Ozone Depleting Chemical:2

Ingred Name:PROPANE

CAS:74-98-6

RTECS #:TX2275000

= Wt:2.

Other REC Limits:NONE RECOMMENDED

OSHA PEL:1000 PPM

ACGIH TLV:ASPHYXIAN; 9596

===== Hazards Identification =====

LD50 LC50 Mixture:TLV 1,000 PPM/3540 MG/M3,8H

TWA(HCFC-22)

Routes of Entry: Inhalation:YES Skin:NO Ingestion:NO

Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:TARGET ORGANS:CNS, CVS. ACUTE- HARMFUL
IF INHALED. MAY CAUSE HEART IRREGULARITIES, UNCONSCIOUSNESS OR
DEATH. INTENTIONAL MISUSE IS FATAL. VAPOR REDUCES OXYGEN & IS
HEAVIER THAN AIR. EYE/SKIN CONTACT WITH LIQUID CAN CAUSE
FROSTBITE. VAPORS CAN CAUSE EYE IRRITATION. INGESTION IS UNLIKELY.
CHRONIC- UNKNOWN.

Explanation of Carc

inogenicity:NONE OF THE COMPONENTS PRESENT IN THIS

MATERIAL AT CONCENTRATIONS GREATER THAN 0.1% ARE LISTED BY IARC,
NTP, OSHA OR ACGIH AS A CARCINOGEN.

Effects of Overexposure:TEMPORARY NERVOUS SYSTEM DEPRESSION WITH
ANAESTHETIC EFFECTS SUCH AS DIZZINESS, HEADACHE, CONFUSION,
INCOORDINATION, LOSS OF CONSCIOUSNESS, IRREGULAR PULSE,
PALPITATIONS, INADEQUATE CIRCULATION, FROST BITE, IRRITATION,
BLURRED VISION, TEARING.

Medical Cond Aggravated by Exposure:INDIVIDUALS WITH PRE

EXISTING

DISEASES OF THE CENTRAL NERVOUS OR CARDIOVASCULAR SYSTEM MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF EXCESSIVE EXPOSURE.

===== First Aid Measures =====

First Aid:EYE:IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IF NEEDED. SKIN: IMMEDIATELY FLUSH WITH PLENTY OF LUKEWARM WATER. GET MEDICAL ATTENTION IF FROSTBITE OCCURS. INHALED:REMOVE TO FRESH AIR & PROVIDE OXYGEN/ARTIFICIAL

RESPIRATION IF NEEDED. INGESTION: NOT CONSIDERED A POTENTIAL ROUTE OF EXPOSURE. NOTE TO PHYSICIAN:CATECHOLAMINE DRUGS, SUCH AS ADRENILINE, SHOULD BE USED WITH SPECIAL CAUTION ONLY IN SITUATIONS OF EMERGENCY LIFE SUPPORT.

===== Fire Fighting Measures =====

Flash Point:WILL NOT BURN

Extinguishing Media:AS APPROPRIATE FOR COMBUSTIBLES IN AREA.

Fire Fighting Procedures:KEEP CYLINDERS COOL WITH WATER SPRAY OR FOG.

SELF-CONTAINED BREATHING APPARATUS

US (SCBA) IS REQUIRED IF CYLINDERS

RUPTURE AND CONTENTS ARE RELEASED UNDER FIRE CONDITIONS. WATER RUNOFF SHOULD BE CONTAINED AND NEUTRALIZED PRIOR TO RELEASE.

Unusual Fire/Explosion Hazard:CYLINDERS MAY RUPTURE UNDER FIRE

CONDITIONS. PRODUCT SHOULD NOT BE USED OR ALLOWED TO EXIST WITH HIGH CONCENTRATIONS OF AIR ABOVE ATMOSPHERIC PRESSURE.

===== Accidental Release Measures =====

Spill Release Procedures:VENTILATE AREA, ESPECIALLY LOW PLACES WHERE

VAPORS MIGHT COLLECT. REMOVE OPEN FLAMES. USE SELF-CONTAINED BREATHING APPARATUS FOR LARGE SPILLS OR RELEASES.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage =====

Handling and Storage Precautions:STORE IN A COOL, DRY AREA. DO NOT HEAT ABOVE 125F (52C).

Other Precautions:AVOID BREATHING VAPORS. AVOID EYE OR SKIN CONTACT WITH LIQUID. WASH THOROUGHLY AFTER HANDLING. USE WITH ADEQUATE VENTILATION TO KEEP EMPLOYEE

EXPOSURE BELOW THE RECOMMENDED LIMITS.

===== Exposure Controls/Personal Protection =====

Respiratory Protection: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.

Ventilation:USE WITH SUFFICIENT VENTILATION TO KEEP EMPLOYEE EXPOSURE BELOW THE RECOMMENDED LIMITS. LOCAL EXHAUST FOR LARGE RELEASES. MECHANICAL FOR ENCLOSED SPACES

Protective Gloves:IMPERVIOUS GLOVES.

Eye Protection:CHEMICAL SPLASH GOGGLES.

Other Protective Equipment:REFRIGERANT CONCENTRATION MONITORS MAY BE NECESSARY TO DETERMINE VAPOR CONCENTRATIONS IN WORK AREAS PRIOR TO USE OF TORCHES OR OTHER OPEN FLAMES, OR IF EMPLOYEES ARE ENTERING ENCLOSED AREAS.

Work Hygienic Practices:WASH THOROUGHLY AFTER HANDLING.

Supplemental Safety and Health
NONE SPECIFIED BY MANUFACTURER.

===== Physical/Chemical Properties =====

HCC:G3

Boiling Pt:=-47.2C, -53.F

Vapor Pres:9257 MM HG @ 77F

Vapor Density:>1

Spec Gravity:1.14 @ 77F LIQ.

Evaporation Rate & Reference:>1 (CCL4=1)

Solubility in Water:NOT DETERMINED

Appearance and Odor:CLEAR, COLORLESS LIQUEFIED GAS - SLIGHT ETHEREAL ODOR.

Percent Volatiles by Volume:100 %

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

ALKALI OR ALKALINE EARTH METALS, POWDERED ALUMINUM, ZINC, BERYLLIUM, ETC.

Stability

Condition to Avoid:MATERIAL IS STABLE. HOWEVER, AVOID OPEN
FLAMES AND HIGH TEMPERATURES.

Hazardous Decomposition Products:DECOMPOSITION PRODUCTS ARE HAZARDOUS.
"SUVA" HP 81 CAN BE DECOMPOSED BY HIGH TEMPERATURES (OPEN FLAMES,
GLOWING METAL SURFACES, ETC.) FORMING HYDROCHLORIC AND HYDROFLUORIC
ACIDS AND IRRITATING.

Conditions to Avoid Polymerization:WILL NOT OCCUR.

===== Toxicological Information =====

Toxicological Information:ANIMAL DATA: THE BL
END IS UNTESTED.

PENTAFLUOROETHANE: INHALATION 4 HR ALC: >709,000 PPM IN RATS.
LOAEL: 100,000 PPM. NOAEL: 50,000 PPM. NO ANMAL DATA AVAILABLE TO
DEFINE CARCINOGENIC, DEVELOPMENTAL OR REPRODUCTIVE HAZARDS.
CHLORODIFLUOROMETHANE: INHALATION 4 HR LC50: 220,000 PPM IN RATS.
COMPOUND IS A SKIN IRRITANT AND SLIGHT EYE IRRITANT. COMPOUNDDID
EXHIBIT SOME CHRONIC EFFECTS: SMALL BUT ST ATISICALLY SIGNIFIGANT
INCREASE IN LATE-OCCURING TUMORS IN SALIVARY GLANDS OFMALE RATS;

MUTAGENIC TO SOME STRAINS OF BACTERIA BUT NOT TO MAMMALIAN CELL
CULTURE. SOME DEVELOPMENTAL TOXICITY AT HIGH CO NCENTRATIONS.

===== Ecological Information =====

Ecological:AQUATIC TOXICITY: HCFC-22: 48 HR EC50 (DAPHNIA MAGNA): 433
MG/L.

===== Disposal Considerations =====

Waste Disposal Methods:RECLAIM BY DISTILLATION OR REMOVE TO A PERMITTED
WASTE DISPOSAL FACILITY. COMPLY WITH FEDERAL, STATE AND LOCAL
REGU
LATIONS.

===== MSDS Transport Information =====

Transport Information:LIQUIFIED GAS, N.O.S. (CHLORODIFLUOROMETHANE AND
PENTAFLUOROETHANE). HAZARD CLASS: 2.2. UN NO: 3163. DOT/IMO LABEL:
NONFLAMMABLE GAS. SHIPPING CONTAINERS: TANK CARS, CYLINDERS, TON
TANKS.

===== Regulatory Information =====

SARA Title III Information:SECTIONS 311/312: ACUTE: YES; CHRONIC: NO;
FIRE: NO; REACTIVITY: NO; PRESSURE: YES. SARA TOXIC C

HEMICAL LIST:

NO. SARA EXTREMELY HAZARDOUS SUBSTANCE LIST: NO.

Federal Regulatory Information: CERCLA HAZARDOUS SUBSTANCE LIST: NO.

TSCA INVENTORY STATUS: REPORTED/INCLUDED.

State Regulatory Information: NONE SPECIFIED BY MANUFACTURER.

===== Other Information =====

Disclaimer (provided with this information by the compiling agencies):

This information is formulated for use by elements of the Department of Defense. The United States of America in

no manner whatsoever,

expressly or implied, warrants this information to be accurate and

disclaims all liability for its use. Any person utilizing this

document should seek competent professional advice to verify and

assume responsibility for the suitability of this information to their

particular situation.