

DU PONT E I DE NEMOURS AND CO INC -- "SUVA" HP62 (R404A) -- 6830-01-392-0960  
===== Product Identification =====

Product ID:"SUVA" HP62 (R404A)

MSDS Date:03/04/1996

FSC:6830

NIIN:01-392-0960

MSDS Number: CGMZT

=== 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:800-441-7515/ 3

02-774-6822

Emergency Phone Num:800-441-3637

Chemtec Ind/Phone:(800)424-9300

CAGE:2S827

=== Contractor Identification ===

Company Name:ALLIED SIGNAL INC DBA ALLIED SIGNAL AEROSPACE CO

Address:780 BAY BLVD

Box:City:CHULA VISTA

State:CA

ZIP:91910-5254

Country:US

Phone:619-585-2592

CAGE:0DA22

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-JT04

CAGE:2S827

===== Composition/Infor

mation on Ingredients =====

Ingred Name:PENTAFLUOROETHANE,  
CAS:354-33-6  
= Wt:44.  
Other REC Limits:NONE RECOMMENDED

Ingred Name:1,1,1-TRIFLUOROETHANE  
CAS:420-46-2  
RTECS #:KJ4110000  
= Wt:52.  
Other REC Limits:NONE RECOMMENDED

Ingred Name:1,1,1,2-TETRAFLUOROETHANE  
CAS:811-97-2  
= Wt:4.  
Other REC Limits:NONE RECOMMENDED

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

LD50 LC50 Mixture:LC50 (4-HOUR)-709,000 PPM  
Routes of Entry: Inhalation:YES Skin:YES Ingestion:NO  
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ports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:INHALATION IS HARMFUL. OVEREXPOSURE TO THE VAPORS MAY INCLUDE TEMPORARY NERVOUS SYSTEM DEPRESSION WITH ANESTHETIC EFFECTS. HIGHER EXPOSURES TO THE VAPORS MAY CAUSE TEMPORARY ALTERATION OF THE HEART'S ELECTRICAL ACTIVITY. INTENTIONAL MISUSE OR DELIBERATE INHALATION MAY CAUSE DEATH WITHOUT WARNING. VAPOR REDUCES OXYGEN AVAILABLE FOR BREATHING & IS HEAVIER THAN AIR. LIQUID CONTACT CAN CAUSE FROSTBITE .

Explanation of Carcinogenicity:NONE OF THE COMPONENTS PRESENT IN THIS MATERIAL AT CONCENTRATIONS EQUAL TO OR GREATER THAN 0.1% ARE LISTED BY IARC, NTP, OSHA OR ACGIH AS A CARCINOGEN.

Effects of Overexposure:SKIN CONTACT MAY CAUSE FROSTBITE FROM EXPOSURE TO THE LIQUID. INHALATION MAY INCLUDE NONSPECIFIC DISCOMFORT, SUCH AS NAUSEA, HEADACHE, OR WEAKNESS OR TEMPORARY NERVOUS SYSTEM DEPRESSION WITH ANESTHETIC EFFECTS SUCH AS DIZZINESS, HEADACHE, CONFUSION, INCOO

RDINATION AND LOSS OF CONSCIOUSNESS.

Medical Cond Aggravated by Exposure: PERSONS WITH PREEXISTING DISEASES OF THE CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, LUNGS OR KIDNEYS MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF EXCESSIVE EXPOSURES.

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

First Aid: INHALATION-REMOVE TO FRESH AIR. KEEP PERSON CALM, IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN. SKIN-FLUSH WITH WATER. TREAT FOR FROSTBITE IF NECESSARY BY GENTLY WARMING AFFECTED AREA. CALL A PHYSICIAN. EYES-FLUSH W/PLENTY OF WATER FOR 15 MINUTES. CALL A PHYSICIAN. NOTES TO PHYSICIANS: THIS MATERIAL MAY MAKE THE HEART MORE SUSCEPTIBLE TO A RRTHMIAS. CATECHOLAMINES SUCH AS ADRENALINE, AND OTHER COMPOUNDS HAVING SIMILAREFFECT, SHOULD BE RESERVED FOR EMERGENCIES & THEN USED ONLY WITH SPECIAL CAUTION.

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

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Flash Point Method: TOC

Flash Point: WILL NOT BURN

Autoignition Temp: Autoignition Temp Text: N/D

Extinguishing Media: AS APPROPRIATE FOR COMBUSTIBLES IN AREA.

Fire Fighting Procedures: COOL CYLINDER WITH WATER SPRAY OR FOG.

SELF-CONTAINED BREATHING APPARATUS (SCBA) IS REQUIRED IF CYLINDERS RUPTURE AND CONTENTS ARE RELEASED UNDER FIRE CONDITIONS. WATER RUN-OFF SHOULD BE CONTAINED AND NEUTRALIZED BEFORE RELEASE.

Unusual Fire/Explosion Hazard: CYLINDERS MAY REPTURE UNDER FIRE

CONDITIONS. DECOMPOSITION MAY OCCUR.

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

Spill Release Procedures: USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. VENTILATE AREA USING FORCED VENTILATION, ESPECIALLY LOW OR ENCLOSED PLACES WHERE HEAVY VAPORS MIGHT COLLECT. REMOVE OPEN FLAMES. USE SELF-CONTAINED BREAT HING APPARATUS (SCBA) FOR LARGE SPILLS OR RELEASES.

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage ==

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Handling and Storage Precautions:STORE IN A CLEAN, DRY PLACE. DO NOT HEAT ABOVE 52C (125F). CONTACT WITH CHLORINE OR OTHER STRONG OXIDIZING AGENTS SHOULD BE AVOIDED.

Other Precautions:AVOID BREATHING VAPORS OR MIST. AVOID CONTACT WITH EYES OR SKIN. USE WITH SUFFICIENT VENTILATION TO KEEP EMPLOYEE EXPOSURE BELOW THE RECOMMENDED LIMIT.

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

Respiratory Protection:UNDER NORMAL MANUFACTURING CONDITIONS, NO

RESPIRATORY PROTECTION IS REQUIRED WHEN USING THIS PRODUCT. SELF-CONTAINED BREATHING APPARATUS IS REQUIRED IF LARGE RELEASE OCCURS.

Ventilation:LOCAL EXHAUST SHOULD BE USED IF LARGE AMOUNTS ARE RELEASED. MECHANICAL VENTILATION SHOULD BE USED IN LOW OR ENCLOSED PLACES.

Protective Gloves:IMPERVIOUS GLOVES SHOULD BE USED TO AVOID PROLONGED OR REPEATED EXPOSURE.

Eye Protection:CHEMICAL SPLASH GOGGLES.

Other Protective Equipment:NONE SPECIFIED BY MANUFACTURER.

Work Hygiene

Practices:NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health

NONE SPECIFIED BY MANUFACTURER.

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

HCC:G3

Boiling Pt:=-46.7C, -52.1F

B.P. Text:AVERAGE

Vapor Pres:9412 MM HG @ 25 DEG C

Spec Gravity:1.05 @ 25C (77F)

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

Solubility in Water:NOT DETERMINED

Appearance and Odor:CLEAR, COLORLESS LIQUIDIFIED GAS WITH SLIGHT ETHEREAL ODOR.

Percent Volatiles by Volume:100 WT %

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

Stability Indicator/Materials to Avoid: YES

INCOMPATIBLE WITH ACTIVE METALS, 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.  
THIS MATERIAL CAN BE DECOMPOSED BY HIGH TEMPERATURES (OPEN FLAMES,  
GLOWING METAL SURFACES, ETC.) F

FORMING HYDROFLUORIC ACID AND  
POSSIBLY CARBONYL FLUORIDE.

Conditions to Avoid Polymerization: POLYMERIZATION WILL NOT OCCUR.

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

Toxicological Information: ANIMAL DATA: THE BLEND IS UNTESTED. HFC-125:  
INHALATION 4 HR ALC: >709,000 PPM IN RATS. SINGLE, HIGH INHALATION  
EXPOSURES CAUSED LETHARGY, DECREASED ACTIVITY, LABORED BREATHING &  
WEIGHT LOSS. WEAK CARDIAC SENSITIZATION EFFECT, A DISTURBANCE OF  
HEART RHYTHM CAU

SED BY A HEIGHTENED SENSITIVITY TO THE ACTION OF  
EPINEPHRINE. LOWEST-OBSERVED-ADVERSE-EFFECT-LEVEL (LOAEL) FOR  
CARDIAC SENSITIZATION: 100,000 PPM. REPEATED EXPOSURE CAUSED: NO  
SIGNIFICANT TOXICOLOGICAL EFFECTS. NO-OBSERVED-ADVERSE-EFFECT-LEVEL  
(NOAEL): 50,000 PPM. HFC-134A: INHALATION 4HR LC50: 567,000 PPM IN  
RATS. CAUSED CARDIAC SENSITIZATION.

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

Ecological: ECOTOXICOLOGICAL INFORMATION: AQUATIC TOXICITY: H  
FC 143A: 96

HR LC50, RAINBOW TROUT: >40 MG/L. HFC-134A: 48 HR EC50, DAPHNIA  
MAGNA: 980 MG/L; 96 HR LC50, RAINBOW TROUT: 450 MG/L.

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

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

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

Transport Information: DOT/IMO PROPER SHIPPING NAME: LIQUIFIED GAS,

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

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Regulatory Information  
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SARA Title III Information:SECTIONS 311/312: ACUTE:NO; CHRONIC:NO;  
FIRE:NO; REACTIVITY:NO; PRESSURE:YES. SARA EXTREMELY HAZARDOUS  
LIST: NO. SARA TOXIC CHEMICALS LIST: NO.

Federal Regulatory Information:CERCLA HAZARDOUS MATERIAL: NO. TSCA

INVENTORY STATUS: REPORTED/INCLUDED.

State Regulatory Information:NONE SPECIFIED BY MANUFACTURER.

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Other Information  
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