

DU PONT E I NEMOURS & CO CHEMICALS & PIGMENTS DEPT -- "SUVA" MP39 (R401A) --
6830-01-391-9298

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

Product ID:"SUVA" MP39 (R401A)

MSDS Date:03/23/1999

FSC:6830

NIIN:01-391-9298

Status Code:A

MSDS Number: CJNRX

=== Responsible Party ===

Company Name:DU PONT E I NEMOURS & CO CHEMICALS & PIGMENTS DEPT

Address:1007 MARKET ST

City:WILMINGTON

State:DE

ZIP:19898

Country:US

Info Phone Num:800-441-7515

Emergency Phone Num:800-441-3637

Resp. Party Other MSDS Num.:DU004507

Chemtec Ind/Phone:(800)424-9300

CAGE:23037

=== Contractor Identification ===

Company Name:DU PONT E I NEMOURS & CO CHEMICALS & PIGMENTS DEPT

Address:1007 MARKET ST

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Phone:800-441-7515

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Company Name:DU PONT FLUOROPRODUCTS

Address:1007 MARKET STREET

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State:DE

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Country:US

Phone:1-800-441-7515

Contract Num:SP0450-99-

C-5448
CAGE:2S827

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Composition/Information on Ingredients
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Ingred Name:METHANE, CHLORODIFLUORO- (HCFC-22)
CAS:75-45-6
RTECS #:PA6390000
= Wt:53.
Other REC Limits:NONE RECOMMENDED
ACGIH TLV:3540 MG/M3;1000 PPM
Ozone Depleting Chemical:2

Ingred Name:ETHANE, 1,1-DIFLUORO- (HFC-152A)
CAS:75-37-6
RTECS #:K11410000
= Wt:13.
Other REC Limits:AEL/WEEL 1000 PPM

Ingred Name:ETHANE, 2-CHLORO-1,1,1,2-TETRAFLUORO (HCFC-124)
CAS:2837-89-0
= Wt:34.
Other REC Limits:AEL/WEEL 1000
PPM

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Hazards Identification
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LD50 LC50 Mixture:UNTESTED.

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

Health Hazards Acute and Chronic:TARGET ORGANS: RESPIRATORY SYSTEM,
CNS, CVS, LIVER, KIDNEYS, SPLEEN (HMIS). SKIN CONTACT MAY CAUSE
FROSTBITE FROM EXPOSURE TO LIQUID. INHALATION MAY INCLUDE
NONSPECIFIC DISCOMFORT, SUCH AS NAUSEA, HEA DACHE, OR WEAKNESS; OR
TEMPORARY NERVOUSSYSTEM DEPRESSION WITH ANESTHETIC EFFECTS SUCH AS

DIZZINESS, CONFUSION, INCOORDINATION, UNCONSCIOUSNESS. HIGHER
EXPOSURES MAY LEAD TO COUGH, DIFFICULTY BREATHIN G, OR SHORTNESS OF
BREATH; IRREGULAR PULSE, PALPITATIONS, OR INADEQUATE CIRCULATION;
ABNORMAL KIDNEY FUNCTION AS DETECTED BY LABORATORY TESTS; OR
FATALITY FROM GROSS OVEREXPOSURE.

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

Effects o

f Overexposure:INHALATION OF HIGH CONCENTRATIONS OF VAPOR IS HARMFUL AND MAY CAUSE HEART IRREGULARITIES, LOSS OF CONSCIOUSNESS, OR DEATH. SKIN CONTACT MAY CAUSE FROSTBITE. INHALATION MAY CAUSE NAUSEA, HEADACHE, WEAK NESS, DIZZINESS, CONFUSION, INCOORDINATION, COUGH, DIFFICULTY BREATHING, OR SHORTNESS OF BREATH; IRREGULAR PULSE, PALPITATIONS, OR INADEQUATE CIRCULATION.

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

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

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 PHYSICI AN. SKIN CONTACT: FLUSH SKIN WITH WATERFOR AT LEAST 15 MINUTES AFTER EXCESSIVE CON TACT. SEEK MEDICAL ASSISTANCE IF IRRITATION IS PRESENT. TREAT FOR FROSTBITE IF NECESSARY BY GENTLY WARMING AFFECTED AR EA. 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.

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

Flash Point:WILL NOT BURN

Autoignition Temp:>681.1C, 1258.F

Lower Limits:NA

Upper Limits:NA

Extinguishing Media:USE MEDIA APPROPRIATE FOR SURROUNDING MATERIAL.

Fire Fighting Procedures:COOL TANK/CONTAINER WITH WATER SPRAY.

SELF-CONTAINED BREATHING APPARATUS (SCBA) MAY BE REQUIRED IF CYLINDERS RUPTURE OR RELEASE UNDER FIRE CONDITIONS.

Unusual Fire/Explosion Hazard:CYLINDERS MAY RUPTURE UNDER FIRE CONDITIONS. DECOMPOSITION MAY OCCUR. THIS PRODUCT IS NOT FLAMMABLE AT TEMPERATURES UP TO 100 DEG C (212 DEG F). HOWEVER, MIXTURE OF THI

S PRODUCT WITH HIGH CONCENTRATIONS OF AIR AT ELEVATED PRESSURE CAN BECOME COMBUSTIBLE AT AMBIENT TEMPERATURE.

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

Spill Release Procedures: REVIEW FIRE FIGHTING MEASURES AND HANDLING SECTIONS BEFORE 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/LEAK OCCURS. SPILL CLEAN UP: COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS FOR REPORTING RELEASES.

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

Handling and Storage Precautions: STORE IN A CLEAN, DRY PLACE. DO NOT HEAT ABOVE 52 C (126 F).

Other Precautions: AVOID BREATHING VAPORS OR MIST. AVOID CONTACT WITH EYES OR SKIN. USE WITH SUFFICIENT VENTILATION TO KEEP EMPLOYEE EXPOSURE BELOW 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: LOCAL EXHAUST SHOULD BE USED WHEN LARGE AMOUNTS ARE RELEASED. MECHANICAL VENTILATION SHOULD BE USED IN LOW OR ENCLOSED PLACES.

Protective Gloves: LINED BUTYL GLOVES

Eye Protection: CHEMICAL SPLASH GOGGLES

Supplemental

Safety and Health

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.

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

HCC: G3

Melt/Freeze Pt: -32.8C, -27.F

Vapor Pres: 5796 @ 77F

Vapor Density: 3.3

Spec Gravity: 1.194

Evaporation Rate & Reference: >1 (CC14=1.0)

Solubility in Water: 0.1 WT% @ 25C

Appearance and Odor: CLEAR, COLORLESS

SS LIQUIFIED GAS, SLIGHT ETHER ODOR

Percent Volatiles by Volume:100

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

Stability Indicator/Materials to Avoid:YES

INCOMPATIBLE WITH ALKALI OR ALKALINE EARTH METALS - POWDERED AL, ZN, BE, ETC.

Stability Condition to Avoid:AVOID OPEN FLAMES AND HIGH TEMPERATURES.

Hazardous Decomposition Products:THIS MATERIAL CAN BE DECOMPOSED BY HIGH TEMPERATURES (OPEN FLAMES, GLOWING METAL SURFACES, ETC) FORMING HAZARDOUS.HYDROCHLORIC AND HYDROFLOURIC ACIDS, AND POSSIBLY CARBONYL HALIDES.

Conditions to Avoid Polymerization:WILL NOT OCCUR.

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

Toxicological Information:THE BLEND IS UNTESTED. CHLORODIFLUOROMETHANE INHALATION 4-HOUR LC50: 220,000 PPM IN RATS. CARDIAC SENSITIZATION OCCURRED IN DOGS AT 50,000 PPM OR GREATER. DIFLUOROETHANE INHALATION 4-HOUR ALC: 383,000 PPM IN RATS; ORAL ALD: >1,500 MG/KG IN RATS. CHLOROTETRAFLUROETHANE INHALATION 4-HOUR ALC: >230,000 PPM IN RATS.

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

Ecological:AQUATIC TOXCITY: HCFC-22 48 HOUR EC50 - DAPHNIA MAGNA: 433 MG/L

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

Waste Disposal Methods:TREATMENT, STORAGE, TRANSPORTATION AND DISPOSAL MUST BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE/PROVINCIAL, AND LOCAL REGULATIONS. RECOVER BY DISTILLATION OR REMOVE TO A PERMITTED WASTE DISPOSAL FACILITY.

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

SARA Title III Information:TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312 ACUTE AND PRESSURE: YES. THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) OF 1986 AND 40 CFR PART 372: METHANE, CHLORODIFLUORO- (HCFC-22) 75-45-6 53% AND ETHANE, 2-CHLORO-1,1,1,2-TETRAFLUOR

O (HCFC-124) 2837-89-0 34%.

Federal Regulatory Information:TSCA INVENTORY STATUS:
REPORTED/INCLUDED.

State Regulatory Information:

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

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particular situation.