

DU PONT FLUOROPRODUCTS -- "VERTREL" MCA -- 6850-01-435-5658

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

Product ID:"VERTREL" MCA

MSDS Date:09/26/2000

FSC:6850

NIIN:01-435-5658

MSDS Number: CKVJS

=== Responsible Party ===

Company Name:DU PONT FLUOROPRODUCTS

Address:1007 MARKET STREET

City:WILMINGTON

State:DE

ZIP:19898

Country:US

Info Phone Num:1-800-441-7515

Emergency Phone Num:1-800-441-3637/MEDICAL EMERGENCY

Resp. Party Other MSDS Num.:6092FR

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:SP0450-01-M-D210

CAGE:2S827

Company Name:SDB CONSULTANTS LTD

Address:401 WHITNEY AVE SUITE 120

Box:City:GRETNA

State:LA

ZIP:70056

Country:US

Phone:504-366-9105

Contract Num:SP0450-01-M-ZE54

CAGE:0PGK2

===== Composition/Inform

ation on Ingredients =====

Ingred Name:1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE (HFC-43-10MEE)
CAS:138495-42-8
Minumum % Wt:59.
Maxumum % Wt:65.
Other REC Limits:200 PPM (DUPONT)

Ingred Name:TRANS-1,2-DICHLOROETHYLENE (T-DCE)
CAS:156-60-5
RTECS #:KV9400000
Minumum % Wt:35.
Maxumum % Wt:41.
Other REC Limits:200 PPM (DUPONT)
OSHA PEL:200 PPM TWA 8-HR
ACGIH TLV:200 PPM TWA 8-HR
EPA Rpt Qty:1000 LBS
DOT Rpt Qty:1000 LBS

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

L

D50 LC50 Mixture:NONE GIVEN FOR PRODUCT AS A WHOLE

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

Health Hazards Acute and Chronic:HFC-43-10MEE MAY CAUSE SUFFOCATION,

CENTRAL NERVOUS SYSTEM (CNS) STIMULATION FOLLOWED BY CNS
DEPRESSION. OVEREXPOSURE MAY CAUSE IRREGULAR HEARTBEAT. INTENTIONAL
MISUSE MAY CAUSE DEATH WITHOUT WARNING. SKIN CONTACT MAY CAUSE
SLIGHT IRRITATION. EYE CONTACT MAY CAUSE IRRITATION. ASPIRATION OF
LIQUID INTO LUNGS MAY CAUSE CHEMICAL PNEUMONIA. T-

DCE: INHALATION

MAY CAUSE CNS DEPRESSION. OTHER EFFECTS IN CLUDE IRREGULAR
HEARTBEAT. SKIN CONTACT MAY CAUSE SEVERE IRRITATION. EYE CONTACT
MAY CAUSE SEVERE IRRITATION. INGESTION MAY CAUSE PULMONARY EDEMA
(ASPIRATION OF LIQUID INTO LUNG). INGESTION MAY CAUSE PATHOLOGICAL
CHANGES IN LIVER & HEART.

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 CA

RCINOGEN.

Effects of Overexposure:INHALED-SLEEPLESSNESS, TREMORS, CONVULSIONS,
DIZZINESS, CONFUSION, INCOORDINATION, DROWSINESS, UNCONSCIOUSNESS,
STRANGE SENSATION IN CHEST, "HEART THUMPING", APPREHENSION,
LIGHTHEADEDNESS, FEELING OF FAINTING, DIZZINESS, WEAKNESS, LOSS OF
CONSCIOUSNESS, DEATH. SKIN: ITCHING, REDNESS, RASH. EYES: TEARING,
PAIN, BLURRED VISION. ASPIRATION: COUGHING, GASPING, CHOKING,
SHORTNESS OF BREATH, BLUISH DISC OLORATION OF SKIN, RAPID BREATHING

A

ND HEART RATE, FEVER, PULMONARY EDEMA OR BLEEDING, DROWSINESS,
CONFUSION, COMA SEIZURES.

Medical Cond Aggravated by Exposure:NOT PROVIDED BY MANUFACTURER

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

First Aid:INHALATION: IF 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: FLUSH
SKIN WITH WATER AFTER CONTACT. WASH CONTAMINATED CLOTHING

BEFORE

REUSE. EYE: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT
LEAST 15 MINUTES. CALL A PHYSICIAN. INGESTION: MATERIAL POSES AS
ASPIRATION HAZARD. IF SWALLOWED, DO NOT INDUCE VOMITING.
IMMEDIATELY GIVE 2 GLASSES OF WATER. NEVER GIVE ANYTHING BY MOUTH
TO AN UNCONSCIOUS PERSON. CALL A PHYSICIAN. IF VOMITING OCCURS
NATURALLY, HAVE VICTIM LEAN FORWARD TO REDUCE THE RISK OF
ASPIRATION.

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

Flash

Point Method:PMCC

Flash Point:NONE

Lower Limits:NONE

Upper Limits:NONE

Extinguishing Media:USE MEDIA APPROPRIATE FOR SURROUNDING MATERIAL.

Fire Fighting Procedures:SELF-CONTAINED BREATHING APPARATUS (SCBA) IS
REQUIRED IF DRUMS RUPTURE AND CONTENTS ARE SPILLED UNDER FIRE
CONDITIONS.

Unusual Fire/Explosion Hazard:USE WATER SPRAY OR FOG TO COOL
CONTAINERS. DRUMS MAY RUPTURE UNDER FIRE CONDITIONS. DECOMPOSITION
MAY OCCUR.

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

=====

Spill Release Procedures:INITIAL CONTAINMENT-DIKE SPILL. PREVENT
MATERIAL FROM ENTERING SEWERS, WATERWAYS, OR LOW AREAS. IMMEDIATELY
EVACUATE THE AREA AND PROVIDE MAXIMUM VENTILATION ESPECIALLY IN LOW
PLACES WHERE HEAVY VAPORS MIGHT COLLECT. UNPROTECTED PERSONNEL
SHOULD MOVE UPWIND OF SPILL. ONLY PERSONEL EQUIPPED WITH PROPER
RESPIRATORY AND SKIN/EYE PROTECTION SHOULD BE PERMITTED IN AREA.
SOAK UP WITH SAWDUST, SAND, OIL

Neutralizing Agent:NOT PROVIDED BY MANUFAC

TURER

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

Handling and Storage Precautions:STORE IN A CLEAN, DRY AREA. DO NOT ALLOW STORED PRODUCT TO EXCEED 52C (125F) TO PREVENT LEAKAGE OR POTENTIAL RUPTURE OF CONTAINER FROM PRESSURE & EXPANSION. PROTECT FROM FREEZING TEMPERATURES. IF SOLV ENT IS STORED BELOW -10C(14F), MIX PRIOR TO USE.

Other Precautions:AVOID BREATHING VAPORS OR MIST. AVOID CONTACT WITH EYES, SKIN OR CLOTHING. WASH THOROUGHLY AFTER HANDLING. USE OF

GLOVES IS RECOMMENDED WHEN WORKING WITH THE MATERIAL CONTAINERS. MATERIAL SHOULD NOT BE DISPENSED FROM ITS CONTAINER BY POURING, EXCEPT FOR SMALL SAMPLE CONTAINERS WHERE FUME HOODS USED TO CONTROL EXPOSURE.

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

Respiratory Protection:WHERE THERE IS POTENTIAL FOR AIRBORNE EXPOSURES IN EXCESS OF APPLICABLE LIMITS, WEAR NIOSH APPROVED RESPIRATORY PROTECTION.

Ventilation:USE ONLY WITH ADEQUATE VENTILATION.

Protective Gloves:WEAR AS APPROPRIATE IMPERVIOUS GLOVES.

Eye Protection:WEAR SAFETY GLASSES OR COVERALL CHEMICAL SPLASH GOGGLES.

Other Protective Equipment:WHERE THERE IS POTENTIAL FOR SKIN CONTACT HAVE AVAILABLE & WEAR AS APPROPRIATE IMPERVIOUS GLOVES, APRON, PANTS & JACKET. PROTECTIVE GLOVES & CHEMICAL SPLASH GOGGLES SHOULD BE USED WHEN HANDLING LIQUID

Work Hygienic Practices:KEEP CONTAINER TIGHTLY CLOSED. VAPORS ARE HEAVIER THAN AIR POSING A HAZARD OF ASPHYXIA IF THEY ARE TRAPPED IN ENCLOSED OR LOW PLACES.

Supplemental Safety and Health

NOTE TO PHYSICIAN:THIS MATERIAL MAY MAKE THE HEART MORE SUSCEPTIBLE TO ARRHYTHMIAS. CATECHOLAMINES, SUCH AS ADRENALINE, AND OTHER COMPOUNDS HAVING SIMILAR EFFECTS, SHOULD BE RESERVED FOR EMERGENCIES AND THEN USED ONLY WITH SPECIAL CAUTION.

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

HCC:T6

Boiling Pt:=39.C, 102.2F

Vapor Pres:464 MMHG@25C(77F)

Vapor Density:5.4

Appearance and Odor:CO

LORLESS LIQUID

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

Stability Indicator/Materials to Avoid: YES

INCOMPATIBLE WITH ALKALI OR ALKALINE EARTH METALS-POWDERED AL, ZN, BE, NA, MG, ETC. INCOMPATIBLE WITH STRONG BASES SUCH AS NAOH, KOH, ETC.

Stability Condition to Avoid: STABLE AT NORMAL TEMPERATURES AND STORAGE CONDITIONS.

Hazardous Decomposition Products: DECOMPOSES WITH HEAT. HIGH TEMPERATURES (OPEN FLAMES, GLOWING METAL SURFACES, ETC.) CAN DECOMPOSE HFC

-43-10MEE FORMING HYDROFLUORIC ACIDS AND POSSIBLY CARBONYL HALIDES. HFC-43-10MEE IS INCOMPATIBLE

Conditions to Avoid Polymerization: WILL NOT OCCUR.

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

Toxicological Information: ANIMAL DATA: HFC-43-10MEE: ORAL LD50: >5,000 MG/KG IN RATS. DERMAL ALD: > 5,000 MG/KG IN RABBITS. INHALATION, 4-HR LC50: 11,100 PPM IN RATS. T-DCE: ORAL LD50: 1275 MG/KG IN RATS. DERMAL LD50: >5,000 MG/KG IN RABBITS. INHALATION LC50, 4 HR:

24,100 PPM IN RATS.

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

Ecological: ECOTOXICOLOGICAL TOXICITY: HFC-43-10MEE: 96-HOUR LC50, FATHEAD MINNOWS: 27.2 MG/L. 96-HOUR LC50, RAINBOW TROUT: 13.9 MG/L. 48-HOUR LC50, DAPHNIA MAGNA: 11.7 MG/L. T-DCE: 96-HOUR LC50, BLUEGILL SUNFISH : 1350 MG/L. 48 HOUR LC50, DAPHNIA MAGNA: 220 MG/L.

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

Waste Disposal Methods: TREATMENT, STORAGE, TRANSPORTATION, AND DISPOSAL

MUST BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE/PROVINCIAL, AND LOCAL REGULATIONS.

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

Transport Information: DOT/IMO/IATA: NOT REGULATED IN CONTAINERS LESS THAN 2600 LBS. IF GREATER THAN 2600 LBS USE: PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(TRANS-1,2-DICHLOROETHYLENE). HAZARD CLASS: 9. UN NUMBER: 3082.

PACKING GROUP: III. REPORTABLE QUANTITY: 1000

LBS
(TRANS-1,2-DICHLOROETHYLENE); 2600 LBS ("VERTREL" MCA).

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

SARA Title III Information:TITLE III HAZARD CLASSIFICATIONS SECTIONS
311, 312: ACUTE: YES, CHRONIC: NO, FIRE: NO, REACTIVITY-NO,
PRESSURE-NO. SARA EXTREMELY HAZARDOUS SUBSTANCE: NO.

Federal Regulatory Information:CERCLA HAZARDOUS SUBSTANCE:
1,2-DICHLOROETHYLENE ONLY. TSCA: ALL COMPONENTS ARE LISTED ON THE
TSCA PUBLIC INVENTORY. 1,1,1,2,2,3,4,5,5,5

-DECAFLUOROPENTANE (CAS#
138495-42-8) IS CONTROLLED BY TSCA SECTION 5, SIGNIFIGANT NEW USE
RULE (SNUR; 40 CFR 721.5645). THE APPROVED USES ARE: PRECISION AND
GENERAL CLEANING, CARRIER FLUID, DISPLACEMENT DRYING, PRINTED
CIRCUIT BOARD CLEANING, PARTICULATE REMOVAL & FILM CLEANING,
PROCESS MEDIUM, HEAT TRANSFER FLUID (DIELECTRIC & NON-DIELECTRIC)
AND TEST FLUID.

State Regulatory Information:NOT PROVIDED 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
p
articular situation.