

MINNESOTA MINING & MFG CO INDUSTRIAL CHEM PRODUCTS -- FC-77 FLUORINERT BRAND  
ELECTRONIC LIQUID -- 6850-00-905-9098

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

Product ID:FC-77 FLUORINERT BRAND ELECTRONIC LIQUID

MSDS Date:07/08/1999

FSC:6850

NIIN:00-905-9098

MSDS Number: BFVYD

=== Responsible Party ===

Company Name:MINNESOTA MINING & MFG CO INDUSTRIAL CHEM PRODUCTS

Address:3M CTR

City:SAINT PAUL

State:MN

Z

IP:55144

Country:US

Info Phone Num:800-364-3577

Emergency Phone Num:612-737-6501

Resp. Party Other MSDS Num.:10-3791-0

CAGE:28112

=== Contractor Identification ===

Company Name:MINNESOTA MINING AND MFG CO, DBA 3M

Address:3M CENTER BLDG 224-5S-04

Box:City:SAINT PAUL

State:MN

ZIP:55144-1000

Country:US

Phone:866-556 5712 / 612-733-1110

CAGE:76381

Company Name:MINNESOTA MINING AND MFG CO PERFORMANCE CHEM AND FLUIDS DIV

Address:3M CTR

Box:City:SAINT PAUL

State:MN

ZIP:55144-1000

Country:US

Phone:800-3

64-3577/651-737-6501

CAGE:28112

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

Ingred Name:PERFLUORO COMPOUNDS, C5-18 (PRIMARILY COMPOUNDS WITH 8  
CARBONS)

CAS:86508-42-1

= Wt:100.

Other REC Limits:NONE RECOMMENDED

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

LD50 LC50 Mixture:LD50 (ORAL, RAT) IS NOT KNOWN.

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

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

Health Hazards Acute and Chro

nic:TARGET ORGANS:EYES, SKIN. ACUTE-

EYE/SKIN: CONTACT IS NOT EXPECTED TO RESULT IN SIGNIFICANT IRRITATION. INHALATION: NO ADVERSE EFFECTS ARE EXPECTED UNLESS THE PRODUCT IS OVER HEATED AND DECOMPOSITION OCCURS. ORAL:INGESTION IS NOT A LIKELY ROUTE OF EXPOSURE TO THIS PRODUCT. PRACTICALLY NON-TOXIC. CHRONIC- UNKNOWN.

Explanation of Carcinogenicity:NONE SPECIFIED BY MANUFACTURER

Effects of Overexposure:DERMAL: MINIMALLY IRRITATING.

Medical Cond Aggravated by Exposure:NONE SPECIFIED BY MANUFACTURER

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

First Aid:EYES: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER. GET IMMEDIATE MEDICAL ATTENTION. SKIN CONTACT: WASH AFFECTED AREA WITH SOAP AND WATER. INHALATION: IF SIGNS/SYMPTOMS OCCUR, REMOVE PERSON TO FRESH AIR. IF SIGNS/SYMPTOMS CONTINUE, CALL A PHYSICIAN. INGESTED: NO NEED FOR FIRST AID IS ANTICIPATED.

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

Flash Poi

nt Method:SCC

Flash Point:NONE

Extinguishing Media:WATER SPRAY, CARBON DIOXIDE, FOAM OR DRY CHEMICAL FOR SURROUNDING FIRE. USE WATER SPRAY TO COOL FIRE EXPOSED CONTAINERS.

Fire Fighting Procedures:WEAR FULL PROTECTIVE CLOTHING, INCLUDING HELMET, BUNKER PANTS AND COAT, BANDS ON LEGS/ARMS, PROTECTIVE COVERING ON HEAD AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE. NO UNUSUAL EFFECTS ARE ANTICIPATED DURING FIRE E

XTINGUISHING OPERATIONS.

Unusual Fire/Explosion Hazard:EXPOSURE TO EXTREME HEAT CAN GIVE RISE TO THERMAL DECOMPOSITION.

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

Spill Release Procedures:OBSERVE PRECAUTIONS FROM OTHER SECTIONS. IN ACCORDANCE WITH GOOD INDUSTRIAL PRACTICE, PROVIDE EXHAUST VENTILATION FOR LARGE SPILLS OR IN CONFINED SPACES. COLLECT SPILLED MATERIAL WITH AN ABSORBENT. PLACE IN AN APPROVED CONTAINER.

Neutralizing Agent:NONE SPECIFIED

BY MANUFACTURER

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

Handling and Storage Precautions:STORE UNDER NORMAL WAREHOUSE CONDITIONS. KEEP AWAY FROM INCOMPATIBLE MATERIALS. NO SMOKING WHILE USING THIS PRODUCT. SMOKING WHILE USING THIS PRODUCT CAN RESULT IN CONTAMINATION OF THE TOBACCO AND/OR SMOKE AND LEAD TO HAZARDOUS DECOMPOSITION PRODUCTS.

Other Precautions:IF THE PRODUCT IS EXPOSED TO EXTREME CONDITION OF HEAT FROM MISUSE OR EQUIPMENT FAILURE, TOXIC DECOMPOSITION PRODUCTS THAT INCLUDE HYDROGEN FLUORIDE AND PERFLUOROISOBUTYLENE CAN OCCUR.

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

Respiratory Protection:AVOID BREATHING OF THERMAL DECOMPOSITION PRODUCTS. SELECT ONE OF THE FOLLOWING NIOSH APPROVED RESPIRATORS BASED ON AIRBORNE CONCENTRATION IAW OSHA REGULATIONS: HALF-MASK SUPPLIED AIR RESPIRATOR, FULL- FACE SUPPLIED AIR RESPIRATOR.

Ventilation:IF HEATED TO DECOMPOSITION: APPROPRIATE LOCAL EXHAUST VENTILATION SUFFICIENT TO MAINTAIN LEVELS OF DECOMPOSITION PRODUCTS BELOW THEIR EXPOSURE GUIDELINES.

Protective Gloves:GLOVES ARE NOT REQUIRED.

Eye Protection:WEAR SAFETY GLASSES WITH SIDE SHIELDS.

Other Protective Equipment:EYE WASH STATION, SAFETY SHOWER, PROTECTIVE CLOTHING

Work Hygienic Practices:OBSERVE GOOD INDUSTRIAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. DO NOT EAT/DRINK WHILE WORKING WITH THIS PRODUCT.

Supplemental Safety and Health  
FOR INDUSTRIAL USE ONLY. NO

IT INTENDED FOR USE AS A MEDICAL DEVICE OR DRUG. HYDROGEN FLUORIDE HAS AN ACGIH THRESHOLD LIMIT VALUE (TLV) OF 3 PARTS PER MILLION PARTS AIR AND AN OSHA PEL OF 3 PPM FLUORIDE AS AN 8-HOUR TIME-WEIGHTED AVERAGE AND 6 PPM FLUORIDE AS A SHORT-TERM EXPOSURE LIMIT (STEL).

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

HCC:N1

Boiling Pt:1 (N-BUTYL ACETATE=1)

Solubility in Water:NIL

Appearance and Odor:COLORLESS LIQUID - ODORLESS

Percent Volatiles by Volume:100

=

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

Stability Indicator/Materials to Avoid: YES

FINELY DIVIDED ACTIVE METALS, ALKALI AND ALKALINE EARTH METALS

Stability Condition to Avoid: NONE SPECIFIED BY MANUFACTURER. DLA-HMIS:  
EXTREME HEAT

Hazardous Decomposition Products: MAY FORM CARBON MONOXIDE, CARBON  
DIOXIDE, HYDROGEN FLUORIDE AND PERFLUOROISOBUTYLENE.

Conditions to Avoid Polymerization: WILL NOT OCCUR.

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

===

Toxicological Information: NONE SPECIFIED BY MANUFACTURER.

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

Ecological: BIODEGRADATION: CHEMICAL OXYGEN DEMAND (COD): NIL. 20-DAY  
BIOCHEMICAL OXYGEN DEMAND (BOD20): NIL. AQUATIC TOXICITY: FATHEAD  
MINNOW (PIMEPHALES PROMELAS) 96 HR: LL50 > 1000 MG/L. WATER FLEA  
(DAPHNIA MAGN A) 48-HR EL50: > 1500 MG/L.

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

Waste Disposal Methods: AS A DISPOSAL ALTERNATIVE, INCINERATE IN THE  
PRESENCE OF A COMBUSTIBLE MATERIAL IN AN INDUSTRIAL OR COMMERCIAL

FACILITY CAPABLE OF HANDLING HALOGENATED WASTE. RECLAIM IF  
FEASIBLE. FOR INFORMATION ON PRODUCT RETURN, SEE YOUR DISTRIBUTOR.

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

Transport Information: TRANSPORTATION INFORMATION: NOT REGULATED ALL  
MODES.

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

SARA Title III Information: EPCRA 311/312 REPORTABLE  
QUANTITY = NOT REPORTABLE.

Federal Regulatory Information: SINCE REGULATIONS VARY, CONSULT  
APPLICABLE REGULATIONS OR AUTHORITIES BEFORE DISPOSAL. US CLEAN  
WATER ACT, SECTION 307, TOXIC POLLUTANTS = NONE. US EPA HAZARDOUS  
WASTE NUMBER = NONE. THE COMPONENTS OF THIS PRODUCT ARE IN  
COMPLIANCE WITH THE REQUIREMENTS OF: TSCA.

State Regulatory Information: NONE SPECIFIED BY MANUFACTURER

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

Disclaimer (provided with)

th 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.