

3M SPECIALTY MATERIALS DIV -- FC-40 FLUORINERT BRAND ELECTRONIC LIQUID

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MSDS Safety Information
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FSC: 6850
NIIN: 01-194-6614
MSDS Date: 12/17/1999
MSDS Num: CKZXX
Product ID: FC-40 FLUORINERT BRAND ELECTRONIC LIQUID
MFN: 02
Responsible Party
Cage: 52152
Name: 3M SPECIALTY MATERIALS DIV
Address: 3 M CENTER
City: ST
. PAUL MN 55144-1000
Info Phone Number: 800-364-3577
Emergency Phone Number: 800-364-3577
Resp. Party Other MSDS No.: 10-3783-7
Review Ind: Y
Published: Y

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Contractor Summary
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Cage: 52152
Name: MINNESOTA MINING & MFG CO INDUSTRIAL TAPE & SPECIALTIES DIV
Address: 3M CENTER
City: ST PAUL MN 55144-1000
Phone: 1-800-364-3577
Contract Number: SP0450-01-M-D786

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Item Description Information
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Item Manager: S9G
Item Name: HEAT TRANSFER FLUID
Specification Number: UNKNOWN
Unit of Issue: GL
UI Container Qty: 1
Type of Container: CAN

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Ingredients
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Cas: 86508-42-1
Name: PERFLUORO COMPOUNDS, (PRIMARILY COMPOUNDS WITH 12 CARBONS)
Percent by Wt: 100.
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Health Hazards Data
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Route Of Entry Inds - Inhalation: YES

Skin: YES

Ingestion: NO

Effects of Exposure: EYE: CONTACT WITH THE EYES DURING PRODUCT USE IS NOT EXPECTED TO RESULT IN SIGNIFICANT IRRITATION. SKIN: CONTACT WITH THE SKIN DURING PRODUCT USE IS NOT EXPECTED TO RESULT IN SIGNIFICANT IRRITATION. INHALATION: HEALTH EFFECTS FROM INHALATION ARE NOT EXPECTED UNLESS THE PRODUCT IS OVER HEAT

ED AND DECOMPOSITION OCCURS. SWALLOWED: INGESTION IS NOT A LIKELY ROUTE OF EXPOSURE TO THIS PRODUCT.

Signs And Symptoms Of Overexposure: ORAL: PRACTICALLY NON-TOXIC. DERMAL: NON-IRRITATING. EYE: NON-IRRITATING. INHALATION: PRACTICALLY NON-TOXIC.

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

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Handling and Disposal
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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.

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, CONTACT YOUR DISTRIBUTOR.

Handling And Storage Precautions: STORE UNDER NORMAL WAREHOUSE CONDITIONS.

Other Precautions: NO SMOKING: SMOKING WHILE USING THIS PRODUCT CAN RESULT IN CONTAMINATION OF THE TOBACCO AND/OR SMOKE AND LEAD TO THE FORMATION OF THE HAZARDOUS DECOMPOSITION PRODUCTS MENTIONED IN THE REACTIVITY DATA SECTION OF THIS MSDS. FIRE & EXPLOSION AVOIDANCE: NONFLAMMABLE.

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Fire and Explosion Hazard Information
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Flash Point Method: SCC

Flash Point Text: NONE

Lower Limits: NONFLAMMABLE

Upper Limits: NONFLAMMABLE

Extinguishing Media: NONFLAMMABLE.

Fire Fighting Procedures: WHEN FIRE FIGHTING CONDITIONS ARE SEVERE & TOTAL THERMAL DECOMPOSITION OF THE

E PRODUCT IS POSSIBLE, WEAR FULL PROTECTIVE CLOTHING, INCLUDING HELMET, SELF-CONTAINED, POSITIVE PRESSURE OF PRESSURE DEMAND BREATHING APPARATUS, BUNKER COAT & PANTS, BANDS AROUND ARMS, WAIST & LEGS, FACE MASK, & PROTECTIVE COVERING FOR HEAD. Unusual Fire/Explosion Hazard: EXPOSURE TO EXTREME HEAT CAN GIVE RISE TO THERMAL DECOMPOSITION. SEE REACTIVITY SECTION. NO UNUSUAL EFFECTS ARE ANTICIPATED DURING FIRE EXTINGUISHING OPERATIONS. AVOID BREATHING PRODUCTS & SUBSTANCES THAT MAY RESULT FROM THERMAL DECOMPOSITION OF THE PRODUCT/PRODUCTS IN FIRE ZONE. KEEP CONTAINERS COOL WITH WATER SPRAY.

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Control Measures
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Respiratory Protection: AVOID PROLONGED BREATHING OF VAPORS. AVOID BREATHING OF THERMAL DECOMPOSITION PRODUCTS. SELECT ONE OF THE FOLLOWING NIOSH APPROVED RESPIRATORS BASED ON AIRBORNE CONCENTRATION OF CONTAMINANTS AND IN ACCORDANCE WITH

OSHA REGULATIONS: HALF-MASK SUPPLIED AIR RESPIRATOR, FULL-FACE SUPPLIED AIR RESPIRATOR.

Ventilation: USE WITH APPROPRIATE EXHAUST VENTILATION SUFFICIENT TO MAINTAIN LEVELS OF THERMAL DECOMPOSITION PRODUCTS BELOW THEIR EXPOSURE GUIDELINES.

Protective Gloves: GLOVES ARE NOT REQUIRED.

Eye Protection: WEAR SAFETY GLASSES WITH SIDE SHIELDS.

Work Hygienic Practices: NO SMOKING: SMOKING WHILE USING THIS PRODUCT CAN RESULT IN CONTAMINATION OF THE TOBACCO AND/OR SMOKE AND LEAD TO THE FORMATION

OF THE HAZARDOUS DECOMPOSITION PRODUCTS.

Supplemental Safety and Health: NFPA HAZARD CODES: HEALTH=1, FIRE=0, REACTIVITY=0. UNUSUAL REACTION HAZARD: NONE. FOR INDUSTRIAL USE ONLY. NOT INTENDED FOR USE AS A MEDICAL DEVICE OR DRUG. HAZARD RATINGS: HEALTH=0, FLAMMIBILITY= 0, REACTIVITY=0, PERSONAL PROTECTION=X.

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Physical/Chemical Properties
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HCC: N1

Boiling Point: =139.C, 282.2F

B.P.

Text: 139-189C

Vapor Pres: CA.3 MMHG@25C

Vapor Density: CA.22.5

Spec Gravity: CA.1.9 WATER=1

Viscosity: CA.2 CENTISTOKE@25C

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

Solubility in Water: NIL

Appearance and Odor: COLORLESS, ODORLESS LIQUID

Percent Volatiles by Volume: 100

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Reactivity Data
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Stability Indicator: YES

Materials To Avoid: FINELY DIVIDED ACTIVE METALS, ALKALI AND ALKA

LINE EARTH
METALS.

Hazardous Decomposition Products: 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.

Hazardous Polymerization Indicator: NO

Conditions To Avoid Polymerization: WILL NOT OCCUR.

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Toxicological Information
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Toxicological Information:

IF THE PRODUCT IS EXPOSED TO EXTREME CONDITION OF
HEAT FROM MIUSE OR EQUIPMENT FAILURE, TOXIC DECOMPOSITION PRODUCTS THAT
INCLUDE HYDROGEN FLUORIDE & PERFLUOROISOBUTYLENE CAN OCCUR. HYDROGEN
FLUORIDE HAS AN ACGIH THRESHOLD LIMIT VALUE OF 3 PPM (AS FLUORIDE) AS A
CEILING LIMIT & AN OSHA PEL OF 3 PPM OF FLUORIDE AS AN EIGHT HOUR TWA
& 6 PPM OF FLUORIDE AS HORT TERM EXPOSURE LIMIT. THE ODOR THRESHOLD FOR
HF IS 0.04 PPM, PROVIDING GOOD WARNING PROPERTIES FOR EXPOSURE.

PER

FLUROISOBUTYLENE HAS AN ACGIH THRESHOLD LIMIT VALUE OF 0.01 PPM OF AIR AS
A CEILING LIMIT OR 0.082 MILLIGRAMS PER CUBIC METER AS A CEILING LIMIT.

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Ecological Information
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Ecological: SUPPORTING DATA: 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. *T

HIS S UBSTANCE DID

NOT DEGRADE SIGNIFICANTLY IN A READY BIODEGRADATION TEST. THIS COMPOUND IS
COMPLETELY FLUOINATED (PERFLUORINATED) OR IT CONTAINS OERFLUORINATED
PORTIONS. PERFLUORINATED PORTIONS. PERFLUOR OALKYL GROUPS RESIST DEGRADATION
IN MOST NATURAL ENVIRONMENTS.

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MSDS Transport Information
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Transport Information: TRANSPORTATION INFORMATION: NOT REGULATED, ALL
TRANSPORTA
TION MODES.

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Regulatory Information
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Sara Title III Information: EPCRA 311/312 REPORTABLE QUANTITY=NOT REPORTABLE.
EPCRA HAZARD CLASS: FIRE HAZARD-NO, PRESSURE-NO, REACTIVITY-NO, ACUTE-NO,
CHRONIC-NO.

Federal Regulatory Information: THE COMPONENTS OF THIS PRODUCT ARE IN
COMPLIANCE WITH THE CHEMICAL REGISTRATION REQUIREMENTS OF : TSCA, CDSL, AICS.
VOLATILE ORGANICS COMPOUNDS: N/A

. VOC LESS H2O & EXEMPT SOLVENTS: N/A.
SINCE REGULATIONS VARY, CONSULT APPLICABLE REGULATIONS OR AUTHORITIES BEFORE
DISPOSAL. U.S. CLEAN WATER ACT, SECTION 302, TOXIC POLLUTANTS=NONE. U.S. EPA
HAZARDOUS WASTE NUMBER=NONE. (NOT U.S. EPA HAZARDOUS).

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Other Information
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Other Information: OTHER ENVIRONMENTAL INFORMATION: THIS LOW-SOLUBILITY
SUBSTANCE HAS INSIGNIFICANT TOXICITY
TO AQUATIC ORGANISMS (LOWEST LL50 OR
EL50 IS >1000 MG/L). LL50 (LETHAL LEVEL) & EL50 ARE SIMILAR TO LC50
& EC50, BUT TESTS THE WATER PHASE FROM INCOMPLETELY-MISCIBLE MIXTURES.
BIOASSAYS HAVE BEEN RUN ON ORGANISMS FROM LESS THAN THREE PHyla. ORGANISMS
FROM TAXA THAT WERE NOT TESTED MAY SHOW GREATER SENSITIVITY. NO DATA ARE
AVAILABLE ON THE TOXICITY EFFECTS OF THIS SUBSTANCE ON WASTEWATER TREATMENT
SYSTEM ORGANISMS.

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ransportation Information
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Responsible Party Code: 52152
Trans ID NO: 156331
Product ID: FC-40 FLUORINERT BRAND ELECTRONIC LIQUID
MSDS Prepared Date: 12/17/1999
Review Date: 03/20/2001
MFN: 2
Net Unit Weight: 15.8 LBS
Multiple KIT Number: 0
Review IND: Y
Unit Of Issue: GL
Container QTY: 1
Type Of Container: CAN

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Detail DOT Information
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DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
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Detail IMO Information
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IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
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Detail IATA Information
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IATA PSN Code: ZZZ
IATA Proper Shipping Nam

e: NOT REGULATED BY THIS MODE OF TRANSPORTATION

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Detail AFI Information
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AFI PSN Code: ZZZ

AFI Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION

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HAZCOM Label
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Product ID: FC-40 FLUORINERT BRAND ELECTRONIC LIQUID

Cage: 52152

Company Name: MINNESOTA MINING & MFG CO INDUSTRIAL TAPE & SPECIALTIES
DIV

Street: 3M CENTER

City: ST PAUL MN

Zipcode: 55144-1000

Health Emergency Phone: 800-364-3577

Label Required IND: Y

Date Of Label Review: 03/20/2001

Status Code: A

Year Procured: 2001

Origination Code: F

Eye Protection IND: YES

Skin Protection IND: YES

Signal Word: CAUTION

Respiratory Protection IND: NO

Health Hazard: Slight

Contact Hazard: Slight

Fire Hazard: None

Reactivity Hazard: None

Hazard And Precautions: EYE: CONTACT WITH THE EYES DURING PRO
DUCT USE IS NOT

EXPECTED TO RESULT IN SIGNIFICANT IRRITATION. SKIN: CONTACT WITH THE SKIN
DURING PRODUCT USE IS NOT EXPECTED TO RESULT IN SIGNIFICANT IRRITATION.

INHALATION: HEALTH EFFECTS FROM INHALATION ARE NOT EXPECTED UNLESS THE
PRODUCT IS OVER HEATED AND DECOMPOSITION OCCURS. SWALLOWED: INGESTION IS NOT
A LIKELY ROUTE OF EXPOSURE TO THIS PRODUCT.

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nformation is formulated for use by elements of the Department of Defense.

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