

MATERIAL SAFETY 3M
 DATA SHEET 3M Center
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DIVISION: 3M SPECIALTY MATERIALS
 TRADE NAME:
 CEA-410 3M Brand Clean Fire Extinguishing Agent
 ID NUMBER/U.P.C. :
 98-0211-7172-7 00-51135-10589-4 98-0211-7173-5 00-51135-10590-0
 98-0211-7174-3 00-51135-10591-7 98-0211-7913-4 00-51135-10775-1
 98-0211-7976-1 00-51135-10838-3
 ISSUED: December 08, 1999
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1. INGREDIENT	C.A.S. NO.	PERCENT
Perfluorobutane (C4F10).....	355-25-9	> 99.5
Perfluoro Compounds.....	86508-42-1	0.1 - 0.5

The ingredients of this product are in compliance with TSCA.

2. PHYSICAL DATA

BOILING POINT:..... ca. -2 C
 Typical
 VAPOR PRESSURE:..... ca. 1980 mmHg
 @ 25 C
 VAPOR DENSITY:..... ca. 8.4 Air=1
 Calc. @ R.T.
 EVAPORATION RATE:..... > 1 BuOAc=1
 (BuOAc=1)
 SOLUBILITY IN WATER:..... neglig.
 SPECIFIC GRAVITY:..... ca. 1.5 Water=1
 PERCENT VOLATILE:..... 100 %
 pH:..... N/A
 VISCOSITY:..... N/D
 MELTING POINT:..... N/D

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

2. PHYSICAL DATA (continued)

APPEARANCE AND ODOR:
Compressed Gas

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:..... None
FLAMMABLE LIMITS - LEL:..... N/A
FLAMMABLE LIMITS - UEL:..... N/A
AUTOIGNITION TEMPERATURE:..... N/D

EXTINGUISHING MEDIA:
Product is a fire-extinguishing agent.

Use firefighting procedures appropriate for materials in the fire zone.

SPECIAL FIRE FIGHTING PROCEDURES:
When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Exposure to heat may cause the cylinder to rupture.

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:
Not Applicable.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon Monoxide and Carbon Dioxide, Hydrogen Fluoride

Thermal decomposition during intended usage is not expected to present a hazard.

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5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Observe precautions from other sections. Ventilate area. Close cylinder. Place leaking container in ventilation hood.

RECOMMENDED DISPOSAL:

Incinerate at a facility equipped to handle gaseous waste. Combustion products will include HF.

If necessary, vent in hood or remote area.

ENVIRONMENTAL DATA:

No data available.

Aquatic toxicity studies were conducted on an immiscible water-fluorochemical mixture. Testing is in progress, so the data given is for a product which is chemically similar. Chemical Oxygen Demand (COD): Nil; 20-Day Biochemical Oxygen Demand (BOD20): Nil; 96-Hr LC50, Fathead minnow (*Pimephales promelas*): >1,000 mg/L.

REGULATORY INFORMATION:

Volatile Organic Compounds: 0 gms/liter.
VOC Less H2O & Exempt Solvents: 0 gms/liter.

Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = None (Not U.S. EPA Hazardous).

The components of this product are in compliance with the chemical registration requirements of: TSCA, EINECS, AICS.

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: Yes REACTIVITY: No ACUTE: No CHRONIC: No

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water. Get immediate medical attention.

SKIN CONTACT:

Flush skin with large amounts of water. If irritation persists, get medical attention.

INHALATION:

Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

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6. SUGGESTED FIRST AID (continued)

IF SWALLOWED:
Not applicable.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:
Avoid eye contact.

SKIN PROTECTION:
Avoid prolonged or repeated skin contact. Wear appropriate gloves when handling this material.

RECOMMENDED VENTILATION:
Do not remain in area where available oxygen may be reduced by product usage.

RESPIRATORY PROTECTION:
If thermal decomposition occurs:

Avoid breathing of thermal decomposition products.

PREVENTION OF ACCIDENTAL INGESTION:
Not applicable.

RECOMMENDED STORAGE:
Keep container closed when not in use. Contents may be under pressure, open carefully. Store in explosion-proof containers.

FIRE AND EXPLOSION AVOIDANCE:
Not applicable. Nonflammable.

OTHER PRECAUTIONARY INFORMATION:
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.

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
Perfluorobutane (C4F10).....	NONE	NONE	NONE	NONE	
Perfluoro Compounds.....	NONE	NONE	NONE	NONE	

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly,

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EXPOSURE LIMITS (continued)

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
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by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:

Eye contact is not expected to occur during normal use of the product.

Frostbite: signs/symptoms can include pain, clouding of the cornea, redness, swelling and blindness.

SKIN CONTACT:

Frostbite: signs/symptoms can include firm blanched areas, redness, pain, tissue destruction, swelling and scar tissue formation.

INHALATION:

Simple Asphyxiation: signs/symptoms can include light-headedness, rapid heart beat, a feeling of suffocation and blue color. Unconsciousness and death may occur if oxygen deprivation is severe or prolonged. Simple asphyxiation results from the displacement of oxygen in air to a concentration which is less than that necessary to maintain life.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

No information was found regarding effects from swallowing.

OTHER HEALTH HAZARD INFORMATION:

A Product Toxicity Summary Sheet is available.

SECTION CHANGE DATES

PRECAUTIONARY INFO. SECTION CHANGED SINCE January 29, 1998 ISSUE

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