

3M General Offices  
 3M Center  
 St. Paul, Minnesota 55144-1000  
 612/733 1110

00-08  
 2156

Duns No.: 00-617-3082

MATERIAL SAFETY  
 DATA SHEET



**DIVISION:** INDUSTRIAL CHEMICAL PRODUCTS DIVISION  
**TRADE NAME:**  
 FC-118 FLUORAD Brand Fluorochemical Surfactant  
**3M I.D. NUMBER:** 98-0211-4833-7

**ISSUED:** DECEMBER 22, 1989  
**SUPERSEDES:** FEBRUARY 23, 1989  
**DOCUMENT:** 10-4221-7

1. INGREDIENT	C.A.S. NO.	PERCENT	EXPOSURE		LIMITS	
			VALUE	UNIT	TYPE	AUTH
Water	7732-18-5	80.0	NONE	NONE	NONE	NONE
Ammonium Perfluoroalkyl Carboxylate	3825-26-1	19.0 - 20.0	0.1	mg/m3	TWA	ACGIH
Ammonium Perfluoroalkyl Carboxylate	6130-43-4	< 1.0	0.1	mg/m3	TWA	3M
Ammonium Perfluoroalkyl Carboxylate	21615-47-4	< 1.0	0.1	mg/m3	TWA	3M
Ammonium Perfluoroalkyl Carboxylate	68259-11-0	< 1.0	0.1	mg/m3	TWA	3M

**SOURCE OF EXPOSURE LIMIT DATA:**

- ACGIH: American Conference of Governmental Industrial Hygienists
- 3M: 3M Medical Department Guideline
- NONE: None Established

**2. PHYSICAL DATA**

**BOILING POINT:**..... ca. 98.00 C  
**VAPOR PRESSURE:**..... ca. 31.0000 mmHg  
 Calc. @ R.T.  
**VAPOR DENSITY:** ..... ca. 0.62 Air = 1  
 Calc. @ R.T.  
**EVAPORATION RATE:**..... < 1.00 Butyl Acetate = 1  
**SOLUBILITY IN WATER:** ..... complete  
**SP. GRAVITY:**..... ca. 1.100 Water = 1  
**PERCENT VOLATILE:** ..... 80.00 %  
**VOLATILE ORGANICS:** ..... N/D  
**pH:** ..... ca. 5.00  
 (2.0% Aqueous)  
**VISCOSITY:** ..... N/D  
**APPEARANCE AND ODOR:** Light colored liquid; slight odor.

**3. FIRE AND EXPLOSION HAZARD DATA**

**FLASH POINT:**..... Non-Flammable  
**FLAMMABLE LIMITS - LEL:** ..... N/A  
**FLAMMABLE LIMITS - UEL:** ..... N/A  
**AUTOIGNITION TEMPERATURE:** ... N/D  
**EXTINGUISHING MEDIA:**  
 Water, Foam, CO2, Dry Chemical  
**SPECIAL FIRE FIGHTING PROCEDURES:**  
 None Known  
**UNUSUAL FIRE AND EXPLOSION HAZARDS:**  
 Heat of fire may release ammonia and HF.

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



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**4. REACTIVITY DATA**

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**STABILITY:** Stable

**INCOMPATIBILITY - MATERIALS TO AVOID:**

NA

**HAZARDOUS POLYMERIZATION:** Will Not Occur

**HAZARDOUS DECOMPOSITION PRODUCTS:**

Thermal decomposition may produce toxic materials including HF.

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**5. ENVIRONMENTAL INFORMATION**

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**SPILL RESPONSE:**

Observe precautions from other sections. Cover with absorbent material. Collect spilled material. Place in an approved metal container, and seal.

**RECOMMENDED DISPOSAL:**

Discharge spent solutions and small product quantities, <5 gal., to a wastewater treatment system. Incinerate bulk product in an industrial or commercial facility. Combustion products will include HF. Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste No.: None

**ENVIRONMENTAL DATA:**

Data for product solids: Chemical Oxygen Demand (COD): Nil (700 mg/Kg); 20-Day Biochemical Oxygen Demand (BOD20): Nil; 96-Hr. LC50, Bluegill Sunfish (*Lepomis macrochirus*): 569 mg/L; 96-Hr. LC50, Fathead Minnow (*Pimephales promelas*): 766 mg/L; 48-Hr EC50, *Daphnia magna*: 632 mg/L; 14-Day EC50 (cell dry weight), Green Algae (*Selenastrum capricornutum*) 73 mg/L.

**SARA HAZARD CLASS:**

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

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**6. SUGGESTED FIRST AID**

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**EYE CONTACT:**

Immediately flush with plenty of water. Continue for 10 minutes. Call a physician.

**SKIN CONTACT:**

Wash affected area with soap and water.

**INHALATION:**

If symptoms occur, remove person to fresh air. If symptoms continue, call a physician.

**IF SWALLOWED:**

DO NOT INDUCE VOMITING. Give copious amounts of water. IMMEDIATELY call a physician or Poison Control Center.

**OTHER FIRST AID:**

NONE

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**7. PRECAUTIONARY INFORMATION**

General safe practice requires that contact with the skin/eyes and breathing of vapors, fumes, mists, or dusts should be avoided. When not in use, the container should be kept tightly closed. Avoid prolonged/repeated breathing of concentrated vapors. Use only in areas sufficiently ventilated to prevent vapor buildup. NOTE: Ammonium perfluoroalkyl carboxylate was fed to albino rats for 2 years, no compound induced carcinogenicity was found in the study; statistically significant compound related benign testicular tumors. Based on current knowledge, the findings have no human health implications.

**SPECIAL PROTECTION:**

EYE PROTECTION: Safety Goggles

SKIN PROTECTION: Rubber gloves, protective clothing.

VENTILATION: Local exhaust ventilation is recommended.

RESPIRATORY PROTECTION: Air supplied respirator where local exhaust ventilation is not available.

**ADDITIONAL EXPOSURE LIMITS**

INGREDIENTS	EXPOSURE LIMITS			
	VALUE	UNIT	TYPE	AUTH
Ammonium Perfluoroalkyl Carboxylate	0.1	mg/m <sup>3</sup>	TWA	3M

**SOURCE OF EXPOSURE LIMIT DATA:**

- 3M: 3M Medical Department Guideline

**8. HEALTH HAZARD DATA**

**EYE CONTACT:** No toxicity data for FC-118. Ammonium perfluoroalkyl carboxylate can be irritating to the eye and may cause eye injury from airborne exposure.

**SKIN CONTACT:** No toxicity data for FC-118. Ammonium perfluoroalkyl carboxylate is slightly toxic when absorbed through the skin; it is non-irritating to the skin.

**INHALATION:** No toxicity data for FC-118. Ammonium perfluoroalkyl carboxylate may cause respiratory system irritation from inhalation; can be considered moderately toxic by inhalation on a single exposure; a median lethal concentration for a 4-hour exposure in the albino rat is 980 milligrams per cubic meter. Repeated inhalation exposure produced liver changes and elevated blood organofluoride levels in rats.

**INGESTION:** No toxicity data for FC-118. Ammonium perfluoroalkyl carboxylate is considered moderately toxic from a single oral exposure; acute oral LD50 (rat) is 540 mg. per kg. of body weight. See precaution section for results of 2 year study.

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The information on this Data Sheet represents our current data and best opinion as to the proper use in handling of this material under normal conditions. Any use of the material which is not in conformance with this Data Sheet or which involves using the material in combination with any other material or any other process is the responsibility of the user.