



## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Canadian Hazardous Products Regulations.

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ FA-188 Foam Additive

#### Product Identification Numbers

98-0212-3311-3

#### 1.2. Recommended use and restrictions on use

##### Intended Use

For Industrial Use Only. Not Intended for Use as a Medical Device or Drug. For use as a foam insulation additive.

##### Restrictions on use

3M Electronics Materials Solutions Division (EMSD) will not knowingly sample, support, or sell its products for incorporation in medical and pharmaceutical products and applications in which the 3M product will be temporarily or permanently implanted into humans or animals. The customer is responsible for evaluating and determining that a 3M EMSD product is suitable and appropriate for its particular use and intended application. The conditions of evaluation, selection, and use of a 3M product can vary widely and affect the use and intended application of a 3M product. Because many of these conditions are uniquely within the user's knowledge and control, it is essential that the user evaluate and determine whether the 3M product is suitable and appropriate for a particular use and intended application, and complies with all local applicable laws, regulations, standards, and guidance.

#### 1.3. Supplier's details

<b>Company:</b>	3M Canada Company
<b>Division:</b>	Electronics Materials Solutions Division
<b>Address:</b>	1840 Oxford Street East, Post Office Box 5757, London, Ontario N6A 4T1
<b>Telephone:</b>	(800) 364-3577
<b>Website:</b>	www.3M.ca

#### 1.4. Emergency telephone number

Medical Emergency Telephone:1-800-3M HELPS / 1-800-364-3577; Transportation Emergency Telephone (CANUTEC): (613) 996-6666

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

Acute Toxicity (oral): Category 4.

**2.2. Label elements****Signal word**

Warning

**Symbols**

Exclamation mark |

**Pictograms****Hazard statements**

Harmful if swallowed.

**Precautionary statements****Prevention:**

Do not eat, drink or smoke when using this product. Wash exposed skin thoroughly after handling.

**Response:**

Rinse mouth. IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Other hazards**

None known.

3% of the mixture consists of ingredients of unknown acute oral toxicity.

**SECTION 3: Composition/information on ingredients**

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt	Common Name
Fluroalkene	3709-71-5	97 - 100 Trade Secret *	No Data Available
Fluoroalkene Oligomer	6792-31-0	<= 3	No Data Available

\*The actual concentration of this ingredient has been withheld as a trade secret.

**SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**

If exposed, wash with soap and water. If signs/symptoms develop, get medical attention.

**Eye Contact:**

If exposed, flush eyes with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms develop, get medical attention.

**If Swallowed:**

Rinse mouth. If you feel unwell, get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**

No critical symptoms or effects. See Section 11.1, information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**

Not applicable

**SECTION 5: Fire-fighting measures**

**5.1. Suitable extinguishing media**

Use a fire fighting agent suitable for the surrounding fire.

**5.2. Special hazards arising from the substance or mixture**

Exposure to extreme heat can give rise to thermal decomposition.

**Hazardous Decomposition or By-Products**

**Substance**

Carbon monoxide  
Carbon dioxide  
Hydrogen Fluoride  
Toxic Vapor, Gas, Particulate

**Condition**

During Combustion  
During Combustion  
During Combustion  
During Combustion

**5.3. Special protective actions for fire-fighters**

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. 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.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Do not breathe thermal decomposition products. For industrial or professional use only. Not for consumer sale or use. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.

## 7.2. Conditions for safe storage including any incompatibilities

Store away from heat. Store away from strong bases. Store away from amines.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Fluroalkene	3709-71-5	Manufacturer determined	TWA:6 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

### 8.2. Exposure controls

#### 8.2.1. Engineering controls

For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

#### 8.2.2. Personal protective equipment (PPE)

##### Eye/face protection

None required.

##### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Neoprene

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - Neoprene

##### Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use a positive pressure supplied-air respirator.

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	Colourless
Odour	Odourless
Odour threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point/Freezing point	< -80 °C
Boiling point	47.3 °C [ @ 101,325 Pa ]
Flash Point	No flash point
Evaporation rate	<i>No Data Available</i>
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	None detected
Flammable Limits(UEL)	None detected
Vapour Pressure	34.7 kPa [ @ 20 °C ]
Vapour Density and/or Relative Vapour Density	<i>No Data Available</i>
Density	1.6454 g/cm <sup>3</sup> [ @ 20 °C ]
Relative density	1.6454 [ <i>Ref Std: WATER=1</i> ]
Water solubility	0.649 mg/l [ @ 22.3 °C ]
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	4.1
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>No Data Available</i>
Viscosity/Kinematic Viscosity	0.3576 mm <sup>2</sup> /sec [ @ 20 °C ]
Volatile Organic Compounds	1,600 g/l
Percent volatile	100 %
VOC Less H <sub>2</sub> O & Exempt Solvents	<i>No Data Available</i>
Molecular weight	300.05
Self ignition temperature	405 °C [ <i>Details: @ 1004 - 1028 hPa</i> ]

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat

### 10.5. Incompatible materials

Alcohols

Amines

Strong bases

**10.6. Hazardous decomposition products****Substance****Condition**

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

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. Extreme heat arising from situations such as misuse or equipment failure can generate hydrogen fluoride as a decomposition product.

**SECTION 11: Toxicological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

**11.1. Information on Toxicological effects****Signs and Symptoms of Exposure**

Based on test data and/or information on the components, this material may produce the following health effects:

**Inhalation:**

May be harmful if inhaled. Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

**Skin Contact:**

Contact with the skin during product use is not expected to result in significant irritation.

**Eye Contact:**

Contact with the eyes during product use is not expected to result in significant irritation.

**Ingestion:**

Harmful if swallowed.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Fluoroalkene	Inhalation-Vapor (4 hours)	Rat	LC50 > 21.69 mg/l
Fluoroalkene	Ingestion	Rat	LD50 >450, <1000 mg/kg
Fluoroalkene Oligomer	Inhalation-Vapor (4 hours)	Rat	LC50 > 179 mg/l

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
Fluoroalkene	In vitro	No significant irritation

	data	
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**Serious Eye Damage/Irritation**

Name	Species	Value
Fluroalkene	In vitro data	No significant irritation

**Skin Sensitization**

Name	Species	Value
Fluroalkene	Mouse	Not classified

**Respiratory Sensitization**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Germ Cell Mutagenicity**

Name	Route	Value
Fluroalkene	In Vitro	Not mutagenic

**Carcinogenicity**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Reproductive Toxicity****Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure Duration
Fluroalkene	Inhalation	Not classified for female reproduction	Rat	NOAEL 4.29 mg/l	prematuring into lactation
Fluroalkene	Inhalation	Not classified for development	Rat	NOAEL 6.74 mg/l	during gestation
Fluroalkene	Ingestion	Not classified for male reproduction	Rat	NOAEL 450 mg/kg/day	28 days
Fluroalkene	Inhalation	Not classified for male reproduction	Rat	NOAEL 4.29 mg/l	25 days

**Target Organ(s)****Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Fluroalkene	Inhalation	respiratory system	Not classified	Rat	NOAEL 21.69 mg/l	4 hours
Fluroalkene Oligomer	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	LOAEL 55.78 mg/l	4 days

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Fluroalkene	Inhalation	bone, teeth, nails, and/or hair   heart   endocrine system   hematopoietic system   liver   nervous system   kidney and/or bladder   respiratory system	Not classified	Rat	NOAEL 3.07 mg/l	28 days
Fluroalkene	Inhalation	nervous system	Not classified	Rat	NOAEL 3.07 mg/kg	28 days
Fluroalkene	Ingestion	hematopoietic	Not classified	Rat	NOAEL 450	28 days

		system   liver   auditory system   heart   endocrine system   bone, teeth, nails, and/or hair   bone marrow   immune system   nervous system   eyes   kidney and/or bladder   respiratory system   vascular system			mg/kg/day	
Fluoroalkene Oligomer	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 55.78 mg/l	4 days
Fluoroalkene Oligomer	Inhalation	liver   kidney and/or bladder	Not classified	Rat	NOAEL 185.92 mg/l	3 days

**Aspiration Hazard**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.**

**SECTION 12: Ecological information**

No data available.

**SECTION 13: Disposal considerations****13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include HF. Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

**SECTION 14: Transport Information**

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Global inventory status**

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the



active portion of the TSCA Inventory.

## SECTION 16: Other information

**National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.**

**Health: 3 Flammability: 1 Instability: 0 Special Hazards: None**

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

### HMIS Hazard Classification

**Health: 2 Flammability: 1 Physical Hazard: 0 Personal Protection: X - See PPE section.**

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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**3M Canada SDSs are available at [www.3M.ca](http://www.3M.ca)**