



## 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(TM) Fluorinert(TM) FC-70 Electronic Liquid

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

##### Recommended use

For Industrial Use Only. Not Intended for Use as a Medical Device or Drug., Testing Fluid or Heat Transfer Fluid for Electronics

##### Restrictions on use

Fluorinert™ Electronic Liquids are used in a wide variety of applications, including but not limited to precision cleaning of medical devices and as a lubricant deposition solvent for medical devices. When the product is used for applications where the finished device is implanted into the human body, no residual Fluorinert solvent may remain on the parts. It is highly recommended that the supporting test results and protocol be cited during FDA registration.

3M Electronics Markets Materials Division (EMMD) 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 EMMD 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: (519) 451-2500, Ext. 2222; Transportation Emergency Telephone (CANUTEC): (613) 996-6666

### SECTION 2: Hazard identification

## 3M(TM) Fluorinert(TM) FC-70 Electronic Liquid

### 2.1. Classification of the substance or mixture

Not classified according to the Canadian Hazardous Products Regulation.

### 2.2. Label elements

#### Signal word

Not applicable.

#### Symbols

Not applicable.

#### Pictograms

Not applicable.

### 2.3. Other hazards

None known.

## SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
PERFLUOROTRIAMYLAMINE	338-84-1	100

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

No need for first aid is anticipated.

#### Skin Contact:

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

#### Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

#### If Swallowed:

No need for first aid is anticipated.

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

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. Non-combustible. Use a fire fighting agent suitable for surrounding fire.

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

### 3M(TM) Fluorinert(TM) FC-70 Electronic Liquid

Exposure to extreme heat can give rise to thermal decomposition.

#### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	During Combustion
Carbon dioxide	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.

## SECTION 6: Accidental release measures

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

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.

#### 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. 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.

## SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Do not breathe thermal decomposition products. Avoid skin contact with hot material. For industrial or professional use only. Store work clothes separately from other clothing, food and tobacco products. Keep away from reactive metals (eg. Aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard. No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of hazardous decomposition products.

#### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

## SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

No occupational exposure limit values exist for any of the components listed in Section 3 of this SDS.

#### 8.2. Exposure controls

##### 8.2.1. Engineering controls

Provide appropriate local exhaust when product is heated.

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

None required.

#### Skin/hand protection

No chemical protective gloves are required.

#### Respiratory protection

Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

During heating:

Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

#### Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

## SECTION 9: Physical and chemical properties

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

Physical state	Liquid
Specific Physical Form:	Liquid
Appearance/Odour	Colourless, odourless liquid.
Odour threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point/Freezing point	<i>Not Applicable</i>
Boiling point/Initial boiling point/Boiling range	201 - 221 °C
Flash Point	No flash point
Evaporation rate	> 1 [ <i>Ref Std:BUOAC=1</i> ]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	None detected
Flammable Limits(UEL)	None detected
Vapour Pressure	<=13.3 Pa [ <i>@ 25 °C</i> ]
Vapour Density	28.3 [ <i>@ 25 °C</i> ] [ <i>Ref Std: AIR=1</i> ]
Density	1.9 g/ml
Relative density	1.9 [ <i>Ref Std: WATER=1</i> ]
Water solubility	Nil
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	14 mm <sup>2</sup> /sec [ <i>@ 25 °C</i> ]
Molecular weight	<i>No Data Available</i>
Volatile Organic Compounds	[ <i>Details:Exempt</i> ]
Percent volatile	100 %
VOC Less H <sub>2</sub> O & Exempt Solvents	[ <i>Details:Exempt</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.

## 3M(TM) Fluorinert(TM) FC-70 Electronic Liquid

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

Alkali and alkaline earth metals

Finely divided active metals

### 10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Hydrogen Fluoride	At Elevated Temperatures - greater than 200 °C
Perfluoroisobutylene (PFIB)	At Elevated Temperatures - greater than 200 °C

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.

## 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:

No health effects are expected.

#### 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:

No known health effects.

#### 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.

**3M(TM) Fluorinert(TM) FC-70 Electronic Liquid****Acute Toxicity**

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
PERFLUOROTRIAMYLAMINE	Dermal		LD50 estimated to be > 5,000 mg/kg
PERFLUOROTRIAMYLAMINE	Inhalation-Vapor (4 hours)	Rat	LC50 > 50 mg/l
PERFLUOROTRIAMYLAMINE	Ingestion	Rat	LD50 > 4,115 mg/kg

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
PERFLUOROTRIAMYLAMINE	Rabbit	No significant irritation

**Serious Eye Damage/Irritation**

Name	Species	Value
PERFLUOROTRIAMYLAMINE	Rabbit	No significant irritation

**Skin Sensitization**

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

**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
PERFLUOROTRIAMYLAMINE	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**

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

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

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

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
PERFLUOROTRIAMYLAMINE	Inhalation	heart   endocrine system   bone, teeth, nails, and/or hair   hematopoietic system   liver   immune system   nervous system   eyes   kidney and/or bladder   respiratory system	All data are negative	Rat	NOAEL 1,674 mg/l	13 weeks
PERFLUOROTRIAMYL	Ingestion	heart   endocrine	All data are negative	Rat	NOAEL	28 days

### 3M(TM) Fluorinert(TM) FC-70 Electronic Liquid

AMINE		system   hematopoietic system   liver   nervous system   kidney and/or bladder   respiratory system			2,058 mg/kg/day	
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#### 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

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

### 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

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. 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 Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC 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: 0 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: 0    Flammability: 0    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).

**Reason for Reissue**

Conversion to GHS format SDS.

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