



## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

3M™ Novec™ Engineered Fluid 7000

REACH registration number: 01-0000020246-76-0000

#### Product Identification Numbers

98-0212-2970-7      98-0212-2971-5

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### Identified uses

For industrial use only. Not intended for use as a medical device or drug.

##### Restrictions on Use

One or more components in this material are approved for specific commercial use(s) under a U.S. EPA TSCA Significant New Use Rule or Consent Order. Approved uses include: heat transfer fluid, refrigerant, aerosol spray cleaner, medium for low temperature immersion baths (e.g., histology baths), deposition coating solvent, vapor degreasing, specialty foam blowing additive, and line flushing for substances requiring special handling (e.g., liquid oxygen).

Novec™ Engineered Fluids 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 Novec 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. Details of the supplier of the safety data sheet

**Address:** 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.  
**Telephone:** +44 (0)1344 858 000

**E Mail:** tox.uk@mmm.com  
**Website:** www.3M.com/uk

**1.4. Emergency telephone number**  
+44 (0)1344 858 000

## **SECTION 2: Hazard identification**

**2.1. Classification of the substance or mixture**  
**CLP REGULATION (EC) No 1272/2008**

**CLASSIFICATION:**

This material is not classified as hazardous according to Regulation (EC) No. 1272/2008, as amended, on classification, labelling, and packaging of substances and mixtures.

**2.2. Label elements**  
**CLP REGULATION (EC) No 1272/2008**

Not applicable

**2.3. Other hazards**

None known.

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

<b>Ingredient</b>	<b>CAS Nbr</b>	<b>EU Inventory</b>	<b>% by Wt</b>	<b>Classification</b>
Methyl perfluoropropyl ether	375-03-1	ELINCS 484-450-7	> 99.5	Substance with a Community level exposure limit in the workplace

Please see section 16 for the full text of any H statements referred to in this section

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

## **SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**Inhalation**

Remove person to fresh air. If you are concerned, get medical advice.

**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. Extinguishing media

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

##### Condition

During combustion.

During combustion.

#### 5.3. Advice 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, tunic and trousers (leggings), 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.

#### 6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dykes 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. Collect the resulting residue containing solution. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Seal the container. Dispose of collected material as soon as possible.

#### 6.4. Reference to other sections

Refer to Section 8 and Section 13 for more information

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Contents may be under pressure, open carefully. Avoid inhalation of thermal decomposition products. For industrial or professional use only. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.)

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

Store in a well-ventilated place. Store at temperatures not exceeding 38C/100F. Store away from acids. Store away from strong bases. Store away from oxidising agents.

#### 7.3. Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

## 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	CAS Nbr	Agency	Limit type	Additional comments
Methyl perfluoropropyl ether	375-03-1	Manufacturer determined	TWA:250 ppm	

UK HSC : UK Health and Safety Commission

TWA: Time -Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

#### Biological limit values

No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

### 8.2. Exposure controls

#### 8.2.1. Engineering controls

Provide appropriate local exhaust ventilation on open containers. Provide appropriate local exhaust when product is heated. 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

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Safety glasses with side shields.

##### Skin/hand protection

No chemical protective gloves are required.

##### Respiratory 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.

## 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 liquid with slight ether odour
Odour threshold	No data available.
pH	Not applicable.
Boiling point/boiling range	34 °C
Melting point	-122.5 °C
Flammability (solid, gas)	Not applicable.

<b>Explosive properties</b>	Not classified
<b>Oxidising properties</b>	Not classified
<b>Flash point</b>	No flash point
<b>Autoignition temperature</b>	415 °C
<b>Flammable Limits(LEL)</b>	None detected
<b>Flammable Limits(UEL)</b>	None detected
<b>Vapour pressure</b>	53,728.8 Pa [@ 20 °C ]
<b>Relative density</b>	1.41 [Ref Std: WATER=1]
<b>Water solubility</b>	Negligible
<b>Solubility- non-water</b>	<i>No data available.</i>
<b>Partition coefficient: n-octanol/water</b>	<i>No data available.</i>
<b>Evaporation rate</b>	<i>No data available.</i>
<b>Vapour density</b>	8.2 kg/m3 [@ 25 °C ]
<b>Decomposition temperature</b>	<i>Not applicable.</i>
<b>Viscosity</b>	0.00047 Pa-s
<b>Density</b>	1.41 g/ml

**9.2. Other information**

<b>EU Volatile Organic Compounds</b>	1,410 g/l
<b>Molecular weight</b>	<i>No data available.</i>
<b>Percent volatile</b>	100 %

**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 polymerisation will not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Strong acids.

Strong bases.

Strong oxidising agents.

**10.6 Hazardous decomposition products**

<b><u>Substance</u></b>	<b><u>Condition</u></b>
Carbonyl fluoride.	At elevated temperatures. - extreme conditions of heat
Hydrogen Fluoride	At elevated temperatures. - extreme conditions of heat
Toxic vapour, gas, particulate.	At elevated temperatures. - extreme conditions of heat

Refer to section 5.2 for hazardous decomposition products during combustion.

If the product is exposed to extreme conditions 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 agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from 3M assessments.

### 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 known health effects.

##### 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.

##### Acute Toxicity

Name	Route	Species	Value
Methyl perfluoropropyl ether	Inhalation-Vapour (4 hours)	Mouse	LC50 820 mg/l
Methyl perfluoropropyl ether	Ingestion	Rat	LD50 > 2,000 mg/kg

AT E = acute toxicity estimate

##### Skin Corrosion/Irritation

Name	Species	Value
Methyl perfluoropropyl ether	Rabbit	No significant irritation

##### Serious Eye Damage/Irritation

Name	Species	Value
Methyl perfluoropropyl ether	Rabbit	No significant irritation

##### Skin Sensitisation

Name	Species	Value
Methyl perfluoropropyl ether	Mouse	Not sensitising

##### Respiratory Sensitisation

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

**3M™ Novec™ Engineered Fluid 7000****Germ Cell Mutagenicity**

Name	Route	Value
Methyl perfluoropropyl ether	In Vitro	Not mutagenic

**Carcinogenicity**

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

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

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

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

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

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Methyl perfluoropropyl ether	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 82 mg/l	30 days
Methyl perfluoropropyl ether	Inhalation	blood   liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 246 mg/l	30 days
Methyl perfluoropropyl ether	Inhalation	heart   endocrine system   hematopoietic system   nervous system   respiratory system	All data are negative	Rat	NOAEL 246 mg/l	30 days

**Aspiration Hazard**

For the component/components, either no data is currently available or the data is 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**

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

**12.1. Toxicity**

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Methyl perfluoropropyl ether	375-03-1	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Methyl perfluoropropyl ether	375-03-1	Green Algae	Experimental	48 hours	EC50	>100 mg/l

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Methyl perfluoropropyl ether	375-03-1	Water flea	Experimental	48 hours	EC50	>100 mg/l
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**12.2. Persistence and degradability**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Methyl perfluoropropyl ether	375-03-1	Experimental Photolysis		Photolytic half-life (in air)	7.45 years (t <sub>1/2</sub> )	Other methods
Methyl perfluoropropyl ether	375-03-1	Experimental Biodegradation	28 days	BOD	45 % weight	OECD 301D - Closed bottle test

**12.3 : Bioaccumulative potential**

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Methyl perfluoropropyl ether	375-03-1	Experimental Bioconcentration		Log Kow	3.53	Other methods

**12.4. Mobility in soil**

Please contact manufacturer for more details

**12.5. Results of the PBT and vPvB assessment**

No information available at this time, contact manufacturer for more details

**12.6. Other adverse effects**

No information available.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods**

See Section 11.1 Information on toxicological effects

Dispose of waste product in a permitted industrial waste facility. Combustion products will include HF. Facility must be capable of handling halogenated materials. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty and clean product containers may be disposed as non-hazardous waste. Consult your specific regulations and service providers to determine available options and requirements.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

**EU waste code (product as sold)**

- 070103\* Organic halogenated solvents, washing liquids and mother liquors
- 14 06 02\* Other halogenated solvents and solvent mixtures

**SECTION 14: Transportation information**

98-0212-2970-7, 98-0212-2971-5



Not hazardous for transportation

## **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 China "Measures on Environmental Management of New Chemical Substance". 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 chemical notification requirements of TSCA.

### **15.2. Chemical Safety Assessment**

Not applicable

## **SECTION 16: Other information**

### **Revision information:**

Section 3: Composition/ Information of ingredients table information was modified.

Section 3: Reference to section 15 for Nota info information was deleted.

Section 7: Conditions safe storage information was modified.

Section 7: Precautions safe handling information information was modified.

Section 9: Property description for optional properties information was added.

Section 9: Property description for optional properties information was deleted.

Section 9: Viscosity information information was modified.

Section 11: Acute Toxicity table information was modified.

Section 13: Standard Phrase Category Waste GHS information was modified.

**DISCLAIMER:** The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

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