



## Safety Data Sheet

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**Transportation version number:**

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

#### 1.1. Product identifier

3M™ Novec™ 7500 Engineered Fluid

REACH registration number	CASRN	EC Number	Ingredient Name
01-0000018188-64-0001	297730-93-9	ELINCS 435-790-1	3-ethoxy-1,1,1,2,3,4,4,5,5,6,6-dodecafluoro-2-trifluoromethyl-hexane

#### Product Identification Numbers

98-0212-2928-5 98-0212-2929-3

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

##### Identified uses

Industrial use

##### Uses advised against

Novec™ Engineered Fluids are used in a wide variety of applications, including but not limited to precision cleaning of medical devices and as lubricant deposition solvents 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 Israel, 91 Medinat Ha'Yehudim Street, Herzeliya 46120  
**Telephone:** 09-961 5000  
**E Mail:** innovation.il@mmm.com  
**Website:** www.3M.com/il

#### 1.4. Emergency telephone number

09-961 5000

**SECTION 2: Hazard identification****2.1. Classification of the substance or mixture**  
**CLP REGULATION (EC) No 1272/2008****CLASSIFICATION:**

Hazardous to the Aquatic Environment (Chronic), Category 4 - Aquatic Chronic 4; H413

For full text of H phrases, see Section 16.

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

Ingredient	C.A.S. No.	EC No.	% by Wt
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	297730-93-9	435-790-1	> 99

**HAZARD STATEMENTS:**

H413 May cause long lasting harmful effects to aquatic life.

**PRECAUTIONARY STATEMENTS****Disposal:**

P501 Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Other hazards**

None known

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

Ingredient	C.A.S. No.	EC No.	% by Wt	Classification
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	297730-93-9	ELINCS 435-790-1	> 99	**Aquatic Chronic 4**, H413

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:**

No need for first aid is anticipated.

**Skin Contact:**

No need for first aid is anticipated.

**Eye Contact:**

No need for first aid is anticipated.

**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**

Use a fire fighting agent suitable for the surrounding fire.

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

None inherent in this product.

**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, 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 vapors, 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.

**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**

Do not breathe thermal decomposition products. Avoid release to the environment.

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

## 3M™ Novec™ 7500 Engineered Fluid

Store away from strong bases.

### 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	C.A.S. No.	Agency	Limit type	Additional Comments
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	297730-93-9	Manufacturer determined	TWA: 100 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists

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

No engineering controls required.

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

##### Eye/face protection

None required.

##### Skin/hand protection

No chemical protective gloves are required.

##### Respiratory protection

None required.

## SECTION 9: Physical and chemical properties

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

Physical state	Liquid
Specific Physical Form:	Liquid
Appearance/Odor	Clear, colorless, odorless
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Boiling point/boiling range	129 °C
Melting point	-100 °C
Flammability (solid, gas)	Not Applicable
Explosive properties:	Not Classified
Oxidising properties:	Not Classified
Flash Point	No flash point
Autoignition temperature	330 °C
Flammable Limits(LEL)	<i>Not Applicable</i>

<b>Flammable Limits(UEL)</b>	<i>Not Applicable</i>
<b>Vapor Pressure</b>	2.1 kPa [ @ 25 °C ]
<b>Relative Density</b>	1.63 [Ref Std: WATER=1]
<b>Water solubility</b>	< 0.004 ppm
<b>Solubility- non-water</b>	<i>No Data Available</i>
<b>Partition coefficient: n-octanol/ water</b>	5.75
<b>Evaporation rate</b>	<i>No Data Available</i>
<b>Vapor Density</b>	Approximately 14.3 [Ref Std: AIR=1]
<b>Decomposition temperature</b>	<i>No Data Available</i>
<b>Viscosity</b>	0.8 mm <sup>2</sup> /sec [ @ 25 °C ]
<b>Density</b>	1.63 g/ml [ @ 20 °C ]

**9.2. Other information**

<b>EU Volatile Organic Compounds</b>	1,630 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 polymerization will not occur.

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials**

Strong bases

**10.6. Hazardous decomposition products**

<u>Substance</u>	<u>Condition</u>
Hydrogen Fluoride	At Elevated Temperatures - extreme conditions of heat
Irritant Vapors or Gases	At Elevated Temperatures - extreme conditions of heat
Toxic Vapor, Gas, Particulate	At Elevated Temperatures - extreme conditions of heat

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
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Dermal	Rat	LD50 > 2,000 mg/kg
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 50 mg/l
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

#### Skin Corrosion/Irritation

Name	Species	Value
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Rabbit	No significant irritation

#### Serious Eye Damage/Irritation

Name	Species	Value
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Rabbit	No significant irritation

#### Skin Sensitization

Name	Species	Value
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Guinea pig	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
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	In Vitro	Not mutagenic

#### Carcinogenicity

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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
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	prematuring & during gestation

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

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Inhalation	respiratory irritation	Not classified	Rat	NOAEL 207 mg/l	5 days

**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Inhalation	liver   kidney and/or bladder	Not classified	Rat	NOAEL 169 mg/l	5 days
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	Ingestion	liver   heart   endocrine system   hematopoietic system   immune system   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 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**

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****Acute aquatic hazard:**

Aquatic Toxicity classification is based on HFE-7500 LC50 (fish) data > 100 mg/L, Log Pow > 4 and PFBA, (ultimate degradation product): Fish 96hr EC50 > 4149 mg/L, Daphnia 48 hr EC50 3475 mg/L, Algae 96 hr EC50 (growth rate) >= 500 mg/L, 28 days BOD 1% (OECD 301D)

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No product test data available

Material	CAS #	Organism	Type	Exposure	Test Endpoint	Test Result
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	297730-93-9	Ricefish	Experimental	96 hours	Lethal Concentration 50%	>100 mg/l

**12.2. Persistence and degradability**

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	297730-93-9	Estimated Photolysis		Photolytic half-life (in air)	1.5 years (t 1/2)	Other methods
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	297730-93-9	Experimental Biodegradation	28 days	Biological Oxygen Demand	1 % BOD/ThBOD	OECD 301D - Closed Bottle Test

**12.3. Bioaccumulative potential**

Material	Cas No.	Test Type	Duration	Study Type	Test Result	Protocol
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-trifluoromethyl-hexane	297730-93-9	Experimental Bioconcentration		Log of Octanol/H <sub>2</sub> O part. coeff	6	Other methods

**12.4. Mobility in soil**

Please contact manufacturer for more details

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

This material does not contain any substances that are assessed to be a PBT or vPvB

**12.6. Other adverse effects**

No information available

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

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/CE 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)**



## 3M™ Novec™ 7500 Engineered Fluid

070103\* Organic halogenated solvents, washing liquids and mother liquors  
140602\* Other halogenated solvents and solvent mixtures

## SECTION 14: Transportation information

ADR/IMDG/IATA: Not hazardous for transport

## 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. One or more of the components of this product have been notified to ELINCS (European List of Notified or New Chemical Substances). Certain restrictions apply. Contact the selling division for additional 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. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. 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

### List of relevant H statements

H413 May cause long lasting harmful effects to aquatic life.

### Revision information:

Section 01: Product use information information was modified.  
Section 04: First aid for eye contact information information was modified.  
Section 04: First aid for ingestion (swallowing) information information was modified.  
Section 04: First aid for inhalation information information was modified.  
Section 04: First aid for skin contact information information was modified.  
Section 05: Fire - Extinguishing media information information was modified.  
Section 06: Accidental release personal information information was modified.  
Section 07: Conditions safe storage information was modified.  
Section 07: Precautions safe handling information information was modified.  
Section 08: Appropriate Engineering controls information information was modified.  
Section 08: Eye protection information information was added.  
Section 08: Eye/face protection information information was deleted.  
Section 08: Personal Protection - Eye information information was deleted.  
Section 08: Personal Protection - Respiratory Information information was deleted.  
Section 08: Respiratory protection information information was added.  
Section 09: Vapor pressure value information was modified.  
Section 11: Reproductive and/or Developmental Effects text information was deleted.  
Section 12: No PBT/vPvB information available warning information was modified.  
Section 13: Standard Phrase Category Waste GHS information was modified.  
Section 15: Regulations - Inventories 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.

**3M Israel SDSs are available at [www.3M.com/il](http://www.3M.com/il)**