

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

Acota HFE7500 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

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

Identified uses

Industrial use.

Restrictions on Use

Acota 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 Acota solvent may remain on the parts. It is highly recommended that the supporting test results and protocol be cited during FDA registration.

Acota will not knowingly sample, support, or sell its products for incorporation in medical and pharmaceutical products and applications in which the Acota product will be temporarily or permanently implanted into humans or animals. The customer is responsible for evaluating and determining that an Acota product is suitable and appropriate for its particular use and intended application. The conditions of evaluation, selection, and use of an Acota product can vary widely and affect the use and intended application of an Acota 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 Acota 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 substance or mixture

Address: Acota Limited, Centrepoint, Knights Way, Shrewsbury SY1 3BF. UK

E Mail: sales@acota.co.uk

Website: www.acota.co.uk

1.4. Emergency telephone number

+44 (0)1743 466200

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	CAS Nbr	EC No.	% by Wt
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-hexane	297730-93-9 (trifluoromethyl)-	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	CAS Nbr	EC No.	REACH Registration No.	% by Wt	Classification
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	297730-93-9	ELINCS 435-7901		> 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, 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. 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 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. 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 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

Avoid inhalation of thermal decomposition products. Avoid release to the environment.

7.2. Conditions for safe storage including any incompatibilities

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	CAS Nbr	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	

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.

Derived no effect level (DNEL)

Ingredient	Degradation Product	Population	Human exposure pattern	DNEL
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane		Worker	Dermal, Long-term exposure (8 hours), Systemic effects	3.3 mg/kg bw/d
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane		Worker	Inhalation, Long-term exposure (8 hours), Systemic effects	1,135 mg/m ³

Predicted no effect concentrations (PNEC)

Ingredient	Degradation Product	Compartment	PNEC
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane		Agricultural soil	0.89 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Hydrogen Fluoride (CAS 7664-39-3)	Agricultural soil	12 mg/kg d.w.

3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Perfluorobutyric acid (CAS 375-224)	Agricultural soil	0.541 mg/kg d.w.
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Trifluoroacetic acid (CAS 76-05-1)	Agricultural soil	0.0013 mg/kg d.w.
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane		Freshwater	0.01 mg/l
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Hydrogen Fluoride (CAS 7664-39-3)	Freshwater	0.4 mg/l
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Perfluorobutyric acid (CAS 375-224)	Freshwater	2.6 mg/l
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Trifluoroacetic acid (CAS 76-05-1)	Freshwater	0.0064 mg/l
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane		Freshwater sediments	7.6 mg/kg d.w.
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Hydrogen Fluoride (CAS 7664-39-3)	Freshwater sediments	1.44 mg/kg d.w.
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Perfluorobutyric acid (CAS 375-224)	Freshwater sediments	9.61 mg/kg d.w.
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane	Trifluoroacetic acid (CAS 76-05-1)	Freshwater sediments	0.023 mg/kg d.w.
3-Ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro- 2- (trifluoromethyl)-hexane		Grassland average	0.89 mg/kg d.w.

3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Hydrogen Fluoride (CAS 7664-39-3)	Grassland average	12 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Perfluorobutyric acid (CAS 375-224)	Grassland average	0.541 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Trifluoroacetic acid (CAS 76-05-1)	Grassland average	0.0113 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane		Marine water	0.001 mg/l
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Hydrogen Fluoride (CAS 7664-39-3)	Marine water	0.04 mg/l
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Perfluorobutyric acid (CAS 375-224)	Marine water	0.26 mg/l
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Trifluoroacetic acid (CAS 76-05-1)	Marine water	0.00064 mg/l
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane		Marine water sediments	0.76 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Hydrogen Fluoride (CAS 7664-39-3)	Marine water sediments	0.144 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Perfluorobutyric acid (CAS 375-224)	Marine water sediments	0.961 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Trifluoroacetic acid (CAS 76-05-1)	Marine water sediments	0.0023 mg/kg d.w.
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane		Sewage Treatment Plant	10 mg/l

3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Hydrogen Fluoride (CAS 7664-39-3)	Sewage Treatment Plant	51 mg/l
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Perfluorobutyric acid (CAS 375-224)	Sewage Treatment Plant	100 mg/l
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6dodecafluoro-2-(trifluoromethyl)-hexane	Trifluoroacetic acid (CAS 76-05-1)	Sewage Treatment Plant	1 mg/l

8.2. Exposure controls

In addition, refer to the annex for more information.

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.

8.2.3. Environmental exposure controls

Refer to Annex

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Specific Physical Form:	Liquid.
Appearance/Odour	Clear, colourless, odourless
Odour 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>

Flammable Limits(UEL)	<i>Not applicable.</i>
Vapour pressure	2.1 kPa [@ 25 °C]
Relative density	1.63 [Ref Std: WATER=1]
Water solubility	< 0.004 ppm
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	5.75
Evaporation rate	<i>No data available.</i>
Vapour density	approximately 14.3 [Ref Std: AIR=1]
Decomposition temperature	<i>No data available.</i>
Viscosity	0.8 mm ² /sec [@ 25 °C]
Density	1.63 g/ml [@ 20 °C]

9.2. Other information

EU Volatile Organic Compounds	1,630 g/l
Molecular weight	<i>No data available.</i>
Percent volatile	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 bases.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Hydrogen Fluoride	At elevated temperatures. - extreme conditions of heat
Irritant vapours or gases.	At elevated temperatures. - extreme conditions of heat
Toxic vapour, 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 Acota 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 Vapour (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 Sensitisation

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 Sensitisation

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

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

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	pre mating & 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	pre mating & 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	pre mating & 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 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 Acota 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) 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,dodecafluoro-2-(trifluoromethyl)hexane	297730-93-9	Ricefish	Experimental	96 hours	LC50	>100 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,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,dodecafluoro-2-(trifluoromethyl)-hexane	297730-93-9	Experimental Biodegradation	28 days	BOD	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,dodecafluoro-2-(trifluoromethyl)-hexane	297730-93-9	Experimental Bioconcentration		Log Kow	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 Acota, 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

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 Acota 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.

15.2. Chemical Safety Assessment

A chemical safety assessment has been carried out for this substance/mixture in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information**List of relevant H statements**

H413 May cause long lasting harmful effects to aquatic life.

Revision information:

- Section 1: Product use information information was modified.
- Section 4: First aid for eye contact information information was modified.
- Section 4: First aid for ingestion (swallowing) information information was modified.
- Section 4: First aid for inhalation information information was modified.
- Section 4: First aid for skin contact information information was modified.
- Section 5: Fire - Extinguishing media information information was modified.
- Section 6: Accidental release personal information information was modified.
- Section 7: Conditions safe storage information was modified.
- Section 7: Precautions safe handling information information was modified.
- Section 8: Appropriate Engineering controls information information was modified.
- Section 8: Eye protection information information was added.
- Section 8: Eye/face protection information information was deleted.
- Section 8: Personal Protection - Eye information information was deleted.
- Section 8: Personal Protection - Respiratory Information information was deleted.
- Section 8: Respiratory protection information information was added.
- Section 9: Vapour 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: 13.1. Waste disposal note information was modified.
- Section 13: Standard Phrase Category Waste GHS information was modified.
- Section 15: Chemical Safety Assessment information was added.
- Section 15: Regulations - Inventories information was modified.

Annex

1. Title	
Substance identification	3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl)-hexane; EC No. 435-790-1; CAS Nbr 297730-93-9;
Exposure Scenario Name	Industrial Use in Closed Systems
Lifecycle Stage	Use at industrial sites
Contributing activities	PROC 01 -Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC 08a -Transfer of substance or mixture (charging and discharging) at nondedicated facilities PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities ERC 01 -Manufacture of the substance ERC 07 -Use of functional fluid at industrial site
Processes, tasks and activities covered	Charging material in closed systems with minimal opportunity for exposure. Use as heat transfer fluids.
2. Operational conditions and risk management measures	
Operating Conditions	Physical state: Liquid.
	General operating conditions: Continuous release; Emission days per year: 300 days/year;

Risk management measures	Under the operational conditions described above the following risk management measures apply: General risk management measures: Human health: None needed; Environmental: None needed;
Waste management measures	Do not release to waterways or sewers; Incinerate in a permitted hazardous waste incinerator;
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted. Contact Acota at the address or phone number listed on the first page of the SDS for information on exposure estimation.
1. Title	
Substance identification	3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl)-hexane; EC No. 435-790-1; CAS Nbr 297730-93-9;
Exposure Scenario Name	Professional Use in Closed Systems
Lifecycle Stage	Widespread use by professional workers
Contributing activities	PROC 01 -Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC 08a -Transfer of substance or mixture (charging and discharging) at nondedicated facilities PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC 20 -Use of functional fluids in small devices ERC 09a -Widespread use of functional fluid (indoor) ERC 09b -Widespread use of functional fluid (outdoor)
Processes, tasks and activities covered	Draining material from open systems.
2. Operational conditions and risk management measures	
Operating Conditions	Physical state: Liquid. General operating conditions: Continuous release; Emission days per year: 300 days/year;
Risk management measures	Under the operational conditions described above the following risk management measures apply: General risk management measures: Human health: None needed; Environmental: None needed;
Waste management measures	Do not release to waterways or sewers; Incinerate in a permitted hazardous waste incinerator;
3. Prediction of exposure	

Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted. Contact Acota at the address or phone number listed on the first page of the SDS for information on
	exposure estimation.
1. Title	
Substance identification	3-Ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl)-hexane; EC No. 435-790-1; CAS Nbr 297730-93-9;
Exposure Scenario Name	Widespread Use in Cooling Applications
Lifecycle Stage	Consumer
Contributing activities	PROC 0 -Other Process or activity ERC 10a -Widespread use of articles with low release (outdoor) ERC 11a -Widespread use of articles with low release (indoor)
Processes, tasks and activities covered	Passive system losses to environment. Use as heat transfer fluids.
2. Operational conditions and risk management measures	
Operating Conditions	Physical state: Liquid. General operating conditions: Discharge volume of sewage treatment plant: <= 0 ; Emission days per year: 365 days/year; Flow rate of receiving surface water: <= 0.00018 cubic meters per day; Local freshwater dilution factor: 10 ; Local marine water dilution factor: 100 ;
Risk management measures	Under the operational conditions described above the following risk management measures apply: General risk management measures: Human health: None needed; Environmental: None needed;
Waste management measures	No use-specific waste management measures are required for this product. Refer to Section 13 of main SDS for disposal instructions:
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted. Contact Acota at the address or phone number listed on the first page of the SDS for information on exposure estimation.

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.