

# SAFETY DATA SHEET



## Vertrel™ XP specialty fluid

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

#### 1.1 Product identifier

Trade name : Vertrel™ XP specialty fluid

SDS-Identcode : 130000000164

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

Use of the Sub-stance/Mixture : Cleaning agent

Recommended restrictions on use : For professional and industrial installation and use only.

#### 1.3 Details of the supplier of the safety data sheet

Company : Chemours Netherlands B.V.  
Baanhoekweg 22  
3313 LA Dordrecht Netherlands

Telephone : +31-(0)-78-630-1011

Telefax : +31-78-6163737

E-mail address of person responsible for the SDS : sds-support@chemours.com

#### 1.4 Emergency telephone number

0-800-983-611 (Toll free in-country) or +(44)-870-8200418

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.
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#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P273 Avoid release to the environment.

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### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.

Rapid evaporation of the product may cause frostbite.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)-1,1,1,2,2,3,4,5,5,5-decafluoropentane	138495-42-8 420-640-8 602-100-00-5 01-2119446695-28-0000	Aquatic Chronic 3; H412	>= 90 - <= 100
Propan-2-ol	67-63-0 200-661-7 603-117-00-0 01-2119457558-25	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336	>= 1 - < 10

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

Protection of first-aiders : No special precautions are necessary for first aid responders.

If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.

In case of skin contact : Wash with water and soap as a precaution.  
Get medical attention if symptoms occur.

In case of eye contact : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.

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

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Symptoms : May cause cardiac arrhythmia.

Skin contact may provoke the following symptoms:

Dermatitis

Irritation

Pain

superficial burning sensation

Itching

Redness

Swelling of tissue

Rash

Discomfort

Eye contact may provoke the following symptoms

Pain

tearing

Swelling of tissue

Redness

Impairment of vision

Inhalation may provoke the following symptoms:

Unconsciousness

Drowsiness

Lack of coordination

confusion

Dizziness

Central nervous system depression

Effects of breathing high concentrations of vapour may include:

Tiredness

Drowsiness

central nervous system effects

Convulsions

Adverse effects from repeated inhalation may include  
central nervous system effects

Aspiration may cause pulmonary oedema and pneumonitis.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

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Unsuitable extinguishing media : None known.

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

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Hydrogen fluoride  
carbonyl fluoride  
Carbon oxides

**5.3 Advice for firefighters**

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

**6.2 Environmental precautions**

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

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

Methods for cleaning up : Soak up with inert absorbent material.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- |                         |   |  |
|-------------------------|---|--|
| Technical measures      | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.  |
| Local/Total ventilation | : | Use only with adequate ventilation.  |
| Advice on safe handling | : | Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Take care to prevent spills, waste and minimize release to the environment.    |
| Hygiene measures        | : | If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. |

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

- |   |   |   |
|---|---|---|
| Requirements for storage areas and containers | : | Do not expose drums to direct heat or temperature above 46°C (115°F) to avoid pressurizing and possibly distorting the drums. Material should not be dispensed by pouring from pail/drum shipping containers containing 5 gallons or more. The use of a drum pump is recommended for dispensing from pail/drum shipping containers with 5 gallons or more, except for smaller containers where adequate ventilation can be used to manage the exposure. Keep in properly labelled containers. Store in accordance with the particular national regulations. |
| Advice on common storage                      | : | No special restrictions on storage with other products.   |
| Recommended storage temperature               | : | < 46 °C   |
| Further information on storage stability      | : | The product has an indefinite shelf life when stored properly.  |

### 7.3 Specific end use(s)

- |                 |   |                   |
|-----------------|---|-------------------|
| Specific use(s) | : | No data available |
|-----------------|---|-------------------|
- 

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

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Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)-1,1,1,2,2,3,4,5,5,5-decafluoropentane	138495-42-8	TWA	225 ppm 2.320 mg/m <sup>3</sup>	WEEL
		STEL	700 ppm 7.217 mg/m <sup>3</sup>	WEEL
Propan-2-ol	67-63-0	OEL-RL	400 ppm	ZA OEL
Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents				
		OEL- RL STEL/C	800 ppm	ZA OEL
Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents				

## Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Propan-2-ol	67-63-0	Acetone: 40 mg/l (Urine)	End of shift at end of workweek	ZA BEI

## Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)-1,1,1,2,2,3,4,5,5,5-decafluoropentane	Workers	Inhalation	Long-term systemic effects	2072 mg/m <sup>3</sup>
	Workers	Inhalation	Acute systemic effects	2072 mg/m <sup>3</sup>
	Consumers	Inhalation	Long-term systemic effects	1546 mg/m <sup>3</sup>
	Consumers	Ingestion	Long-term systemic effects	37 mg/kg bw/day
	Consumers	Inhalation	Acute systemic effects	1546 mg/m <sup>3</sup>
Propan-2-ol	Workers	Inhalation	Long-term systemic effects	500 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	888 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	89 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term systemic effects	319 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	26 mg/kg bw/day

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### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)-1,1,1,2,2,3,4,5,5,5-decafluoropentane	Fresh water	0,0344 mg/l
	Freshwater - intermittent	0,106 mg/l
	Marine water	0,0034 mg/l
	Marine sediment	0,175 mg/kg dry weight (d.w.)
	Fresh water sediment	1,75 mg/kg dry weight (d.w.)
	Soil	0,215 mg/kg dry weight (d.w.)
Propan-2-ol	Fresh water	140,9 mg/l
	Marine water	140,9 mg/l
	Intermittent use/release	140,9 mg/l
	Sewage treatment plant	2251 mg/l
	Fresh water sediment	552 mg/kg dry weight (d.w.)
	Marine sediment	552 mg/kg dry weight (d.w.)
	Soil	28 mg/kg dry weight (d.w.)
	Oral (Secondary Poisoning)	160 mg/kg food

## 8.2 Exposure controls

### Engineering measures

Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

### Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:  
Safety glasses

Hand protection  
Material : Viton®  
Glove thickness : 0,7 mm  
Wearing time : 120 min

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!

Skin and body protection : Skin should be washed after contact.

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Respiratory protection : Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown.

### SECTION 9: Physical and chemical properties

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

Appearance	: liquid
Colour	: colourless
Odour	: slight, ether-like
Odour Threshold	: No data available
pH	: No data available
Melting point/freezing point	: < -80,0 °C
Initial boiling point and boiling range	: 52 °C (1.013 hPa)
Flash point	: does not flash
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Upper explosion limit / Upper flammability limit	: Upper flammability limit Method: ASTM E681 None.
Lower explosion limit / Lower flammability limit	: Lower flammability limit Method: ASTM E681 None.
Vapour pressure	: 93,3 hPa (0 °C)
Relative vapour density	: 7,86
Density	: 1,530 g/cm <sup>3</sup> (25 °C) 1,591 g/cm <sup>3</sup> (0 °C) 1,456 g/cm <sup>3</sup> (50 °C)
Solubility(ies) Water solubility	: partly soluble
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: No data available



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Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : 0,68 mPa.s (25 °C)

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

### 9.2 Other information

Flammability (liquids) : No data available

Particle size : Not applicable

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Not classified as a reactivity hazard.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

### 10.4 Conditions to avoid

Conditions to avoid : None known.

### 10.5 Incompatible materials

Materials to avoid : None.

### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

Not classified based on available information.

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### **Components:**

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 114,428 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

No observed adverse effect concentration (Dog): 5000 ppm  
Test atmosphere: gas  
Method: Cardiac sensitisation study

Lowest observed adverse effect concentration (Dog): > 5000 ppm  
Test atmosphere: gas  
Method: Cardiac sensitisation study

Cardiac sensitisation threshold limit (Dog): > 51.544 mg/m<sup>3</sup>  
Test atmosphere: gas  
Method: Cardiac sensitisation study

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg  
Method: OECD Test Guideline 402

### **Propan-2-ol:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 25 mg/l  
Exposure time: 6 h  
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

### **Skin corrosion/irritation**

Not classified based on available information.

### **Components:**

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

### **Propan-2-ol:**

Species : Rabbit

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Result : No skin irritation

### Serious eye damage/eye irritation

Not classified based on available information.

### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: No eye irritation

### Propan-2-ol:

Species	: Rabbit
Result	: Irritation to eyes, reversing within 21 days

### Respiratory or skin sensitisation

#### Skin sensitisation

Not classified based on available information.

#### Respiratory sensitisation

Not classified based on available information.

### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

Exposure routes	: Inhalation
Result	: negative

### Propan-2-ol:

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

### Germ cell mutagenicity

Not classified based on available information.

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### **Components:**

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### **Propan-2-ol:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

### **Carcinogenicity**

Not classified based on available information.

### **Components:**

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

### **Propan-2-ol:**

Species : Rat  
Application Route : inhalation (vapour)  
Exposure time : 104 weeks  
Method : OECD Test Guideline 451

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Result : negative

### Reproductive toxicity

Not classified based on available information.

#### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 415  
Result: negative

Effects on foetal development : Test Type: Prenatal development toxicity study (teratogenicity)  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 414  
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

### Propan-2-ol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

### STOT - single exposure

Not classified based on available information.

#### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Exposure routes : Ingestion  
Assessment : No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less

Exposure routes : Skin contact  
Assessment : No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less

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Exposure routes : inhalation (vapour)  
Assessment : No significant health effects observed in animals at concentrations of 20 mg/l/4h or less

### Propan-2-ol:

Assessment : May cause drowsiness or dizziness.

### STOT - repeated exposure

Not classified based on available information.

### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Exposure routes : inhalation (vapour)  
Assessment : No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

### Repeated dose toxicity

### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Species : Rat, male and female  
NOAEL : 15,463 mg/l  
LOAEL : 20,618 mg/l  
Application Route : inhalation (vapour)  
Exposure time : 90 Days  
Method : OECD Test Guideline 413

### Propan-2-ol:

Species : Rat  
NOAEL : 12,5 mg/l  
Application Route : inhalation (vapour)  
Exposure time : 104 Weeks

### Aspiration toxicity

Not classified based on available information.

### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

No aspiration toxicity classification

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**SECTION 12: Ecological information****12.1 Toxicity****Components:**

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 13 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 10,6 mg/l  
aquatic invertebrates Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 (Selenastrum capricornutum (green algae)): > 120 mg/l  
plants Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Scenedesmus capricornutum (fresh water algae)): 120 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to daphnia and other : NOEC: 1,72 mg/l  
aquatic invertebrates (Chronic toxicity) Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

**Propan-2-ol:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 9.640 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 10.000 mg/l  
aquatic invertebrates Exposure time: 24 h

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 1.050 mg/l  
Exposure time: 16 h

**12.2 Persistence and degradability****Components:**

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301D

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### Propan-2-ol:

Biodegradability	:	Result: rapidly degradable
BOD/COD	:	BOD: 1,19 (BOD5) COD: 2,23 BOD/COD: 53 %

## 12.3 Bioaccumulative potential

### Components:

Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)- 1,1,1,2,2,3,4,5,5,5-decafluoropentane

:

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely.
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Partition coefficient: n-octanol/water	:	log Pow: 2,4 (24 °C)
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### Propan-2-ol:

Partition coefficient: n-octanol/water	:	log Pow: 0,05
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## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

### Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
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## 12.6 Other adverse effects

### Product:

Endocrine disrupting potential	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product	:	Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
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Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.  
Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

### SECTION 14: Transport information

#### 14.1 UN number

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA	: Not regulated as a dangerous good

#### 14.2 UN proper shipping name

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA	: Not regulated as a dangerous good

#### 14.3 Transport hazard class(es)

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA	: Not regulated as a dangerous good

#### 14.4 Packing group

ADN	: Not regulated as a dangerous good
ADR	: Not regulated as a dangerous good
RID	: Not regulated as a dangerous good
IMDG	: Not regulated as a dangerous good
IATA (Cargo)	: Not regulated as a dangerous good
IATA (Passenger)	: Not regulated as a dangerous good

#### 14.5 Environmental hazards

Not regulated as a dangerous good

#### 14.6 Special precautions for user

Not applicable

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### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Remarks : Not applicable for product as supplied.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Montreal Protocol : Reaction mass of (3R,4R)-1,1,1,2,2,3,4,5,5,5-decafluoropentane and (3S,4S)-1,1,1,2,2,3,4,5,5,5-decafluoropentane

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

Other information : Vertrel™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC.  
Chemours™ and the Chemours Logo are trademarks of The Chemours Company.  
Before use read Chemours safety information.  
For further information contact the local Chemours office or nominated distributors.

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

### Full text of H-Statements

H225 : Highly flammable liquid and vapour.  
H319 : Causes serious eye irritation.  
H336 : May cause drowsiness or dizziness.  
H412 : Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

Aquatic Chronic : Long-term (chronic) aquatic hazard  
Eye Irrit. : Eye irritation  
Flam. Liq. : Flammable liquids  
STOT SE : Specific target organ toxicity - single exposure  
WEEL : Workplace Environmental Exposure Levels (WEEL)  
ZA BEI : South Africa. The Regulations for Hazardous Chemical Agents, Biological Exposure Indices  
ZA OEL : South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits  
WEEL / STEL : Short term exposure limit  
WEEL / TWA : 8-hr TWA  
ZA OEL / OEL-RL : Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)  
ZA OEL / OEL- RL STEL/C : Occupational Exposure Limit Restricted limit - Short term oc-

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### cupational exposure limits / ceiling limits

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

### Classification of the mixture:

Aquatic Chronic 3                      H412

### Classification procedure:

Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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