

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by  
Commission Regulation (EU) 2020/878



## Capstone™ FS-61 Fluorosurfactant

Version	Revision Date:	SDS Number:	Date of last issue: 01.08.2024
7.0	26.11.2024	8029958-00013	Date of first issue: 26.03.2021

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

#### 1.1 Product identifier

Trade name	:	Capstone™ FS-61 Fluorosurfactant
SDS-Identcode	:	130000051565
Unique Formula Identifier (UFI)	:	QK2V-06G3-AKJ4-D3UR

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

Use of the Substance/Mixture	:	Formulation [mixing] of preparations and/ or re-packaging (excluding alloys), For further information see Annex - Exposure scenario.
Recommended restrictions on use	:	For industrial use only., Do not use this product in consumer spray applications except in water-based coatings where the maximum concentration of active ingredient does not exceed 0.1 wt percent. Do not use or resell Chemours™ materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative.

#### 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

+(353)-19014670 (CHEMTREC - Recommended) ; +353-(01) 809 2166 (Poison Information Center of Ireland)

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

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

Acute toxicity, Category 1	H330: Fatal if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

#### 2.2 Label elements

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

Hazard pictograms :



Signal word : Danger

Hazard statements	H317	May cause an allergic skin reaction.
	H330	Fatal if inhaled.
	H373	May cause damage to organs through prolonged or repeated exposure.
	H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P273	Avoid release to the environment.
P280	Wear protective gloves.

##### **Response:**

P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P314	Get medical advice/ attention if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P391	Collect spillage.

##### Hazardous components which must be listed on the label:

Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts  
1,2-Benzisothiazol-3(2H)-one  
2-Methyl-2H-isothiazol-3-one

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### 2.3 Other hazards

This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

Ecological information: 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.

Toxicological information: 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.

Inhalation of decomposition products in high concentration may cause shortness of breath (lung oedema).

## 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 mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts	Not Assigned  01-2119436357-36	Acute Tox. 1; H330 STOT RE 2; H373 (Liver) Aquatic Chronic 1; H410  M-Factor (Chronic aquatic toxicity): 10	>= 10 - < 20
2-Methyl-2H-isothiazol-3-one	2682-20-4 220-239-6 613-326-00-9	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH071  M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1	>= 0.0025 - < 0.025

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		specific concentration limit Skin Sens. 1A; H317 >= 0.0015 %  Acute toxicity estimate  Acute oral toxicity: 120 mg/kg Acute inhalation toxicity (dust/mist): 0.11 mg/l Acute dermal toxicity: 242 mg/kg	
1,2-Benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 4; H302 Acute Tox. 2; H330 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1  specific concentration limit Skin Sens. 1A; H317 >= 0.036 %  Acute toxicity estimate  Acute inhalation toxicity (dust/mist): 0.21 mg/l	>= 0.0025 - < 0.025

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.

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- When symptoms persist or in all cases of doubt seek medical advice.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- If inhaled : If inhaled, remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention immediately.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.  
Remove contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- 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

- Symptoms : Inhalation may provoke the following symptoms:  
Irritation  
Shortness of breath  
Lung oedema  
Cough
- Eye contact may provoke the following symptoms  
Lachrymation  
Redness  
Discomfort
- Risks : May cause an allergic skin reaction.  
Fatal if inhaled.  
May cause damage to organs through prolonged or repeated exposure.

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

- Treatment : Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media : Water spray

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Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

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  
potentially toxic fluorinated compounds  
aerosolized particulates  
Carbon oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
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.

## SECTION 6: Accidental release measures

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

Personal precautions : Evacuate personnel to safe areas.  
Only trained personnel should re-enter the area.  
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 contain-

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ment 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.

### 6.4 Reference to other sections

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

## 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 | : | If sufficient ventilation is unavailable, use with local exhaust ventilation.  |
| Advice on safe handling | : | Do not get on skin or clothing.<br>Do not breathe vapours.<br>Do not swallow.<br>Avoid contact with eyes.<br>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Keep container tightly closed.<br>Take care to prevent spills, waste and minimize release to the environment.<br><br>Do not breathe decomposition products. |
| 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. Contaminated work clothing should not be allowed out of the workplace.<br>Wash contaminated clothing before re-use.   |

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

- |   |   |  |
|---|---|--|
| Requirements for storage areas and containers | : | Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. |
| Advice on common storage                      | : | Do not store with the following product types:<br>Self-reactive substances and mixtures<br>Organic peroxides<br>Flammable liquids  |

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Flammable solids  
Pyrophoric liquids  
Pyrophoric solids  
Self-heating substances and mixtures  
Substances and mixtures, which in contact with water, emit flammable gases  
Explosives  
Gases

Recommended storage temperature : 5 - 40 °C

Further information on storage stability : Perishable if frozen.

Do not freeze.

### 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

Contains no substances with occupational exposure limit values.

#### Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
hydrofluoric acid	7664-39-3	TWA	1.8 ppm 1.5 mg/m3	2000/39/EC
	Further information: Indicative			
		STEL	3 ppm 2.5 mg/m3	2000/39/EC
	Further information: Indicative			
		OELV - 15 min (STEL)	3 ppm 2.5 mg/m3 (Fluorine)	IE OEL
	Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body			
		OELV - 8 hrs (TWA)	1.8 ppm 1.5 mg/m3 (Fluorine)	IE OEL
	Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body			
Carbonyl difluoride	353-50-4	OELV - 15 min (STEL)	5 ppm 13 mg/m3	IE OEL
		OELV - 8 hrs	2 ppm	IE OEL



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		(TWA)	5.4 mg/m <sup>3</sup>	
		TWA	2.5 mg/m <sup>3</sup> (Fluorine)	2000/39/EC
	Further information: Indicative			
Carbon dioxide	124-38-9	TWA	5,000 ppm 9,000 mg/m <sup>3</sup>	2006/15/EC
	Further information: Indicative			
		OELV - 8 hrs (TWA)	5,000 ppm 9,000 mg/m <sup>3</sup>	IE OEL
Carbon monoxide	630-08-0	STEL	100 ppm 117 mg/m <sup>3</sup>	2017/164/EU
	Further information: Indicative			
		TWA	20 ppm 23 mg/m <sup>3</sup>	2017/164/EU
	Further information: Indicative			
		OELV - 15 min (STEL)	100 ppm 117 mg/m <sup>3</sup>	IE OEL
	Further information: Repr 1A - Substances which are known human reproductive toxicants			
		OELV - 8 hrs (TWA)	20 ppm 23 mg/m <sup>3</sup>	IE OEL
	Further information: Repr 1A - Substances which are known human reproductive toxicants			
		TWA	20 ppm 23 mg/m <sup>3</sup>	2004/37/EC
	Further information: Carcinogens or mutagens			
		STEL	100 ppm 117 mg/m <sup>3</sup>	2004/37/EC
	Further information: Carcinogens or mutagens			

### 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 mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts	Workers	Inhalation	Acute local effects	0.3 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	1.2 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	0.042 mg/m <sup>3</sup>
	Workers	Inhalation	Long-term local effects	0.24 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term systemic effects	0.6 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0.0104 mg/m <sup>3</sup>
	Consumers	Ingestion	Long-term systemic effects	0.006 mg/kg bw/day
1,2-Benzisothiazol-	Workers	Inhalation	Long-term systemic	6.81 mg/m <sup>3</sup>

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3(2H)-one			effects	
	Workers	Skin contact	Long-term systemic effects	0.966 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	1.2 mg/m3
	Consumers	Skin contact	Long-term systemic effects	0.345 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts	Fresh water	0.00093 mg/l
	Marine water	0.000093 mg/l
	Intermittent use/release	0.0303 mg/l
	Fresh water sediment	0.00493 mg/kg dry weight (d.w.)
	Soil	1 mg/kg dry weight (d.w.)
	Sewage treatment plant	100 mg/l
1,2-Benzisothiazol-3(2H)-one	Marine sediment	0.00049 mg/kg dry weight (d.w.)
	Fresh water	11 µg/l
	Intermittent use/release	0.403 µg/l
	Marine water	1.1 µg/l
	Intermittent use/release	0.0403 µg/l
	Sewage treatment plant	1.03 mg/l
	Fresh water sediment	0.0499 mg/kg dry weight (d.w.)
	Marine sediment	0.00499 mg/kg dry weight (d.w.)
	Soil	3 mg/kg dry weight (d.w.)

## 8.2 Exposure controls

### Engineering measures

Processing may form hazardous compounds (see section 10).  
Minimize workplace exposure concentrations.  
If sufficient ventilation is unavailable, use with local exhaust ventilation.

### Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:  
Safety glasses  
Equipment should conform to I.S. EN 166

### Hand protection

Material : butyl-rubber  
Break through time : 480 min  
Glove thickness : 0.89 mm

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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.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.  
Equipment should conform to I.S. EN 14387

Filter type : Combined particulates and acidic gas/vapour type (E-P)

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : viscous liquid

Colour : colourless, yellow

Odour : odourless

Odour Threshold : No data available

Melting point/freezing point : 0 °C

Initial boiling point and boiling range : 100 °C

Flammability (solid, gas) : Not applicable

Flammability (liquids) : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower : No data available

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flammability limit

Flash point : does not flash

Auto-ignition temperature : No data available

Decomposition temperature : > 200 °C

pH : 7.5 - 9

Viscosity  
Viscosity, kinematic : No data available

Solubility(ies)  
Water solubility : soluble

Partition coefficient: n-  
octanol/water : Not applicable

Vapour pressure : No data available

Relative density : 1.1

Relative vapour density : No data available

Particle characteristics  
Particle size : Not applicable

### 9.2 Other information

Explosives : Not explosive

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

Evaporation rate : No data available

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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 : Hazardous decomposition products will be formed at elevated temperatures.

#### 10.4 Conditions to avoid

Conditions to avoid : None known.

#### 10.5 Incompatible materials

Materials to avoid : None.

#### 10.6 Hazardous decomposition products

Thermal decomposition : hydrofluoric acid  
Carbonyl difluoride  
Carbon dioxide  
Carbon monoxide

### SECTION 11: Toxicological information

#### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

##### Acute toxicity

Fatal if inhaled.

##### Product:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate (Rat): 0.005 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Expert judgement

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg

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### Components:

#### **Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

Acute oral toxicity	: LD50 (Rat): > 1,000 mg/kg Method: OECD Test Guideline 425 Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	: Approximate Lethal Concentration (Rat): 0.047 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rat): > 1,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

#### **2-Methyl-2H-isothiazol-3-one:**

Acute oral toxicity	: LD50 (Rat): 120 mg/kg
Acute inhalation toxicity	: LC50 (Rat): 0.11 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: Corrosive to the respiratory tract.
Acute dermal toxicity	: LD50 (Rat): 242 mg/kg Method: OECD Test Guideline 402

#### **1,2-Benzisothiazol-3(2H)-one:**

Acute oral toxicity	: LD50 (Rat, male): 450 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50 (Rat, male): 0.21 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

### **Skin corrosion/irritation**

Not classified based on available information.

### Product:

Species	: Rabbit
Result	: No skin irritation

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### Components:

**Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

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

### **2-Methyl-2H-isothiazol-3-one:**

Result	: Corrosive after 3 minutes to 1 hour of exposure
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### **1,2-Benzisothiazol-3(2H)-one:**

Result	: Skin irritation
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### **Serious eye damage/eye irritation**

Not classified based on available information.

### Product:

Species	: Rabbit
Result	: No eye irritation

### Components:

**Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

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

### **2-Methyl-2H-isothiazol-3-one:**

Result	: Irreversible effects on the eye
--------	-----------------------------------

### **1,2-Benzisothiazol-3(2H)-one:**

Species	: Rabbit
Result	: Irreversible effects on the eye

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

May cause an allergic skin reaction.

#### **Respiratory sensitisation**

Not classified based on available information.

### Components:

**Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

Test Type	: Local lymph node assay (LLNA)
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Exposure routes	: Skin contact
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: negative

### 2-Methyl-2H-isothiazol-3-one:

Exposure routes	: Skin contact
Result	: positive

Assessment	: Probability or evidence of high skin sensitisation rate in humans
------------	---

### 1,2-Benzisothiazol-3(2H)-one:

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: positive

Assessment	: Probability or evidence of high skin sensitisation rate in humans
------------	---

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:

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

	: Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative
--	---

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

### 2-Methyl-2H-isothiazol-3-one:

Genotoxicity in vitro	: Test Type: Chromosome aberration test in vitro Result: negative
-----------------------	--

Genotoxicity in vivo	: Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo Species: Rat Application Route: Ingestion Method: OECD Test Guideline 486 Result: negative
----------------------	---



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II

### 1,2-Benzisothiazol-3(2H)-one:

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  Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: positive
Genotoxicity in vivo	: Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo Species: Rat Application Route: Ingestion Method: OECD Test Guideline 486 Result: negative

### Carcinogenicity

Not classified based on available information.

### Reproductive toxicity

Not classified based on available information.

### Components:

#### Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:

Effects on fertility	: Test Type: Reproduction/Developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 415 Result: negative Remarks: Based on data from similar materials
Effects on foetal development	: Test Type: Reproduction/Developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 414 Result: negative Remarks: Based on data from similar materials
Reproductive toxicity - Assessment	: Weight of evidence does not support classification for reproductive toxicity

### 2-Methyl-2H-isothiazol-3-one:

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Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 416  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative

### 1,2-Benzisothiazol-3(2H)-one:

Effects on fertility : Test Type: Fertility/early embryonic development  
Species: Rat  
Application Route: Ingestion  
Method: OPPTS 870.3800  
Result: negative

### STOT - single exposure

Not classified based on available information.

### STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

### Components:

**Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

Exposure routes : Ingestion  
Target Organs : Liver  
Assessment : Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

### 1,2-Benzisothiazol-3(2H)-one:

Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

### Repeated dose toxicity

### Components:

**Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

Species : Rat, male and female  
LOAEL : 3.6 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days  
Method : OECD Test Guideline 408  
Remarks : Based on data from similar materials

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Species	: Rat, male
NOAEL	: 100 mg/kg
LOAEL	: 1,000 mg/kg
Application Route	: Skin contact
Exposure time	: 28 Days
Method	: OECD Test Guideline 410
Remarks	: Based on data from similar materials

### 1,2-Benzisothiazol-3(2H)-one:

Species	: Dog
NOAEL	: 5 mg/kg
LOAEL	: 20 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days
Method	: Directive 67/548/EEC, Annex, B.27

### Aspiration toxicity

Not classified based on available information.

## 11.2 Information on other hazards

### Endocrine disrupting properties

#### Product:

Assessment : 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.

### Experience with human exposure

#### Product:

Inhalation : Target Organs: Lungs  
Symptoms: Irritation, Shortness of breath, Symptoms may be delayed.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

Toxicity to soil dwelling organisms : LC50: > 1,000 mg/kg  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)  
  
NOEC: 125 mg/kg  
Species: Eisenia fetida (earthworms)  
  
LOEC: 250 mg/kg

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Species: Eisenia fetida (earthworms)

### Components:

#### **Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): > 36.4 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 3.24 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): > 22.44 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials  NOEC (Pseudokirchneriella subcapitata (green algae)): 22.44 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	: NOEC: 0.88 mg/l Exposure time: 90 d Species: Oncorhynchus mykiss (rainbow trout) Method: OECD Test Guideline 210 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0.0093 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211 Remarks: Based on data from similar materials
M-Factor (Chronic aquatic toxicity)	: 10

#### **2-Methyl-2H-isothiazol-3-one:**

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 4.77 - 6 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0.93 - 1.9 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Skeletonema costatum (marine diatom)): 0.1 mg/l Exposure time: 72 h

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	ErC50 (Skeletonema costatum (marine diatom)): 0.0695 mg/l Exposure time: 24 h
	EC10 (Pseudokirchneriella subcapitata (green algae)): 0.024 mg/l Exposure time: 24 h
M-Factor (Acute aquatic toxicity)	: 10
Toxicity to fish (Chronic toxicity)	: NOEC: 2.1 mg/l Exposure time: 33 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0.04 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	: 1

### 1,2-Benzisothiazol-3(2H)-one:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.74 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 2.24 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.1087 mg/l Exposure time: 24 h
	EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0268 mg/l Exposure time: 24 h
M-Factor (Acute aquatic toxicity)	: 1
Toxicity to microorganisms	: NOEC : 10.3 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to fish (Chronic toxicity)	: NOEC: 0.28 mg/l Exposure time: 33 d Species: Pimephales promelas (fathead minnow) Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0.91 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

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Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

### 12.2 Persistence and degradability

#### Components:

**Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301D  
Remarks: Based on data from similar materials

**2-Methyl-2H-isothiazol-3-one:**

Biodegradability : Result: Not readily biodegradable.

### 12.3 Bioaccumulative potential

#### Components:

**Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:**

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)  
Bioconcentration factor (BCF): 4  
Remarks: Based on data from similar materials

**2-Methyl-2H-isothiazol-3-one:**

Partition coefficient: n-octanol/water : log Pow: -0.34

**1,2-Benzisothiazol-3(2H)-one:**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 6.62

Partition coefficient: n-octanol/water : log Pow: 0.7

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

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### Components:

Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:

Assessment	:	PBT substance
		vPvB substance

### 12.6 Endocrine disrupting properties

#### Product:

Assessment	:	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.
------------	---	---

### 12.7 Other adverse effects

#### Components:

Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts:

Additional ecological information	:	Information given is based on data on the components and the ecotoxicology of similar products.
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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. 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 or ID number

ADN	:	UN 3082
ADR	:	UN 3082
RID	:	UN 3082
IMDG	:	UN 3082

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**IATA** : UN 3082

### 14.2 UN proper shipping name

**ADN** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts)

**ADR** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts)

**RID** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts)

**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts)

**IATA** : Environmentally hazardous substance, liquid, n.o.s.  
(Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts)

### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADN</b>	: 9	
<b>ADR</b>	: 9	
<b>RID</b>	: 9	
<b>IMDG</b>	: 9	
<b>IATA</b>	: 9	

### 14.4 Packing group

**ADN**  
Packing group : III  
Classification Code : M6  
Hazard Identification Number : 90  
Labels : 9

**ADR**  
Packing group : III  
Classification Code : M6  
Hazard Identification Number : 90  
Labels : 9  
Tunnel restriction code : (-)

**RID**  
Packing group : III  
Classification Code : M6



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Hazard Identification Number : 90  
Labels : 9

### IMDG

Packing group : III  
Labels : 9  
EmS Code : F-A, S-F

### IATA (Cargo)

Packing instruction (cargo aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

### IATA (Passenger)

Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

## 14.5 Environmental hazards

### ADN

Environmentally hazardous : yes

### ADR

Environmentally hazardous : yes

### RID

Environmentally hazardous : yes

### IMDG

Marine pollutant : yes

### IATA (Passenger)

Environmentally hazardous : yes

### IATA (Cargo)

Environmentally hazardous : yes

## 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## 14.7 Maritime transport in bulk according to IMO instruments

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

REACH - Restrictions on the manufacture, placing on : Conditions of restriction for the fol-

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the market and use of certain dangerous substances,  
mixtures and articles (Annex XVII)

lowing entries should be considered:  
Number on list 3

REACH - Restrictions on the manufacture, placing on  
the market and use of certain dangerous substances,  
mixtures and articles (Annex XVII)

Number on list 65: Diammonium  
hydrogenorthophosphate, Ammoni-  
um dihydrogen phosphate

REACH - Restrictions on the manufacture, placing on  
the market and use of certain dangerous substances,  
mixtures and articles (Annex XVII)

Substance(s) or mixture(s) are listed  
here according to their appearance  
in the regulation, irrespective of their  
use/purpose or the conditions of the  
restriction. Please refer to the condi-  
tions in corresponding Regulation to  
determine whether an entry is appli-  
cable to the placing on the market or  
not.

REACH - Candidate List of Substances of Very High  
Concern for Authorisation (Article 59).

: Not applicable

Regulation (EC) on substances that deplete the ozone  
layer

: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollu-  
tants (recast)

: Not applicable

Regulation (EU) No 649/2012 of the European Parlia-  
ment and the Council concerning the export and import  
of dangerous chemicals

: Not applicable

REACH - List of substances subject to authorisation  
(Annex XIV)

: Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of  
major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
H1	ACUTE TOXIC	5 t	20 t
E1	ENVIRONMENTAL HAZARDS	100 t	200 t

### Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national  
regulations, where applicable.

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

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### SECTION 16: Other information

Other information : Capstone™ 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

H301	: Toxic if swallowed.
H302	: Harmful if swallowed.
H311	: Toxic in contact with skin.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H330	: Fatal if inhaled.
H373	: May cause damage to organs through prolonged or repeated exposure.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
EUH071	: Corrosive to the respiratory tract.

#### Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2004/37/EC	: Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
2006/15/EC	: Europe. Indicative occupational exposure limit values
2017/164/EU	: Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
IE OEL	: Ireland. List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
2004/37/EC / STEL	: Short term exposure limit

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2004/37/EC / TWA	:	Long term exposure limit
2006/15/EC / TWA	:	Limit Value - eight hours
2017/164/EU / STEL	:	Short term exposure limit
2017/164/EU / TWA	:	Limit Value - eight hours
IE OEL / OELV - 8 hrs (TWA)	:	Occupational exposure limit value (8-hour reference period)
IE OEL / OELV - 15 min (STEL)	:	Occupational exposure limit value (15-minute reference period)

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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; 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:

Acute Tox. 1	H330
Skin Sens. 1	H317
STOT RE 2	H373

### Classification procedure:

Expert judgement and weight of evidence determination.  
Calculation method  
Calculation method

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Aquatic Chronic 1

H410

Calculation method

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## Annex: Exposure Scenarios

### Table of Contents

Number	Title
<b>ES1</b>	Industrial use; Formulation [mixing] of preparations and/or re-packaging (SU10); Formulation [mixing] of preparations and/ or re-packaging (excluding alloys); Large user.; Coatings and paints, thinners, paint removers (PC9a).; Non-metal surface treatment products (PC15).; Washing and cleaning products (PC35).
<b>ES2</b>	Industrial use; Formulation [mixing] of preparations and/or re-packaging (SU10); Formulation [mixing] of preparations and/ or re-packaging (excluding alloys); Small user.; Coatings and paints, thinners, paint removers (PC9a).; Non-metal surface treatment products (PC15).; Washing and cleaning products (PC35).
<b>ES3</b>	professional use; Building and construction work (SU19); Coatings.
<b>ES4</b>	Consumer use; Building and construction work (SU19); Coatings.
<b>ES5</b>	Consumer use; Building and construction work (SU19); Coatings; Article service life.; Coatings and paints, thinners, paint removers (PC9a); Stone, plaster, cement, glass and ceramic articles (AC4).; Non-metal surface treatment products (PC15).

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**ES 1: Industrial use; Formulation [mixing] of preparations and/or re-packaging (SU10); Formulation [mixing] of preparations and/ or re-packaging (excluding alloys); Large user.; Coatings and paints, thinners, paint removers (PC9a).; Non-metal surface treatment products (PC15).; Washing and cleaning products (PC35).**

### 1.1. Title section

<b>Exposure Scenario name</b>	: Industrial use, Formulation & (re)packing of substances and mixtures, Large user
<b>Structured Short Title</b>	: Industrial use; Formulation [mixing] of preparations and/or re-packaging (SU10); Formulation [mixing] of preparations and/ or re-packaging (excluding alloys); Large user.; Coatings and paints, thinners, paint removers (PC9a).; Non-metal surface treatment products (PC15).; Washing and cleaning products (PC35).

Environment		
<b>CS 1</b>	<b>Formulation &amp; (re)packing of substances and mixtures, Large scale</b>	ERC2
Worker		
<b>CS 2</b>	<b>Material transfers</b>	PROC8b
<b>CS 3</b>	<b>Batch process, Mixing operations</b>	PROC5
<b>CS 4</b>	<b>Material transfers</b>	PROC9
<b>CS 5</b>	<b>Laboratory activities</b>	PROC15

### 1.2. Conditions of use affecting exposure

#### 1.2.1. Control of environmental exposure: Formulation into mixture (ERC2)

Product (article) characteristics	
Covers concentrations up to 35 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Annual use rate (tonnes/year)	: 7.875 ton(s)/year
Maximum daily site tonnage (kg/day)	: 262.5 kg/day
Fraction of EU tonnage used in re-	: 1

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gion
Fraction of Regional tonnage used : 1 locally
Release type : Continuous release
Emission days : 30
<b>Technical and organisational conditions and measures</b>
Process designed to minimize releases to wastewater. Process designed to minimize releases to soil. Process designed to minimize releases to air.
Recovery and reuse of rinsate from containers, vats and equipment to eliminate substance release to waste water.
<b>Limit release rate to waste water to (kg/day):</b> 1.3 kg/day Worst case assumption
<b>Conditions and measures related to sewage treatment plant</b>
STP type : Municipal Sewage Treatment Plant STP sludge treatment : No application of sewage sludge to soil STP effluent : 2,000 m3/d
<b>Conditions and measures related to treatment of waste (including article waste)</b>
Waste treatment : Hazardous waste incineration
<b>Other conditions affecting environmental exposure</b>
Receiving surface water flow : 1,512,000 m3/d

### 1.2.2. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

<b>Product (article) characteristics</b>
Covers concentrations up to 35 %
Physical form of product : Liquid Not volatile
<b>Amount used (or contained in articles), frequency and duration of use/exposure</b>
Amount per Day : 262.5 kg/day
Use frequency : Covers exposure up to 15 minutes/day



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Technical and organisational conditions and measures
Regular inspection and maintenance of equipment and machines Good natural ventilation
Reduce contact between product and air
Mass transfer rate
Used ART model. < 100 L/min
Conditions and measures related to personal protection, hygiene and health evaluation
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. For further specification, refer to section 8 of the SDS. Dermal - minimum efficiency of 90 %
Other conditions affecting workers exposure
Body parts exposed : Both hands
Indoor or outdoor use : Indoor use
Room size : 300 m <sup>3</sup>
Temperature : 25 °C
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Wear suitable coveralls to prevent exposure to the skin.

### 1.2.3. Control of worker exposure: Mixing or blending in batch processes (PROC5)

Product (article) characteristics
Covers concentrations up to 35 %
Physical form of product : Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure
Amount per Day : 262.5 kg/day
Use frequency : Covers exposure up to 60 minutes/day
Technical and organisational conditions and measures
Regular inspection and maintenance of equipment and machines Good natural ventilation Ensure that the distance from worker to task is greater than 1 m.
Medium containment with receiving vessel docked or sealed to the source vessel to prevent direct contact with the product.

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Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. For further specification, refer to section 8 of the SDS. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Both hands
Indoor or outdoor use	: Indoor use
Room size	: 300 m³
Temperature	: 25 °C
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Wear suitable coveralls to prevent exposure to the skin.	

### 1.2.4. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics	
Covers concentrations up to 7 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Amount per Day	: 262.5 kg/day
Use frequency	: Covers exposure up to 240 minutes/day
Technical and organisational conditions and measures	
Regular inspection and maintenance of equipment and machines Good natural ventilation	
Low containment using loose lids on vessels. Inhalation - minimum efficiency of 90 %	
Mass transfer rate	
Used ART model. < 1,000 L/min	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. For further specification, refer to section 8 of the SDS. Dermal - minimum efficiency of 90 %	

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Other conditions affecting workers exposure	
Body parts exposed	: Both hands
Indoor or outdoor use	: Indoor use
Room size	: 300 m³
Temperature	: 25 °C
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Wear suitable coveralls to prevent exposure to the skin.	

### 1.2.5. Control of worker exposure: Use as laboratory reagent (PROC15)

Product (article) characteristics	
Covers concentrations up to 35 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Amount per Day	: 262.5 kg/day
Use frequency	: Covers exposure up to 60 minutes/day
Technical and organisational conditions and measures	
Regular inspection and maintenance of equipment and machines Good natural ventilation	
Submerged loading.	
Reduce contact between product and air	
Mass transfer rate	
Used ART model. < 0.1 L/min	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. For further specification, refer to section 8 of the SDS. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Both hands
Indoor or outdoor use	: Indoor use

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Room size	: 30 m <sup>3</sup>
Temperature	: 25 °C
<b>Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply</b>	
Wear suitable coveralls to prevent exposure to the skin.	

### 1.3. Exposure estimation and reference to its source

#### 1.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Protection Target	Exposure estimate	RCR
Freshwater	0.000811 mg/L (ECETOC TRA environment v2.0)	0.9
Marine water	0.0000613 mg/L (ECETOC TRA environment v2.0)	0.7
Freshwater sediment	0.0043 mg/kg dry weight (ECETOC TRA environment v2.0)	0.9
Marine sediment	0.000325 mg/kg dry weight (ECETOC TRA environment v2.0)	0.7
Agricultural soil	< 0.0000018 mg/kg dry weight (ECETOC TRA environment v2.0)	< 0.001
Grassland	< 0.0000018 mg/kg dry weight (ECETOC TRA environment v2.0)	< 0.001
Sewage treatment plant	0.613 mg/L (ECETOC TRA environment v2.0)	0.006

#### 1.3.2. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	< 0.009 mg/m <sup>3</sup> (ART v1.5)	0.03
inhalative	local	long-term	< 0.003 mg/m <sup>3</sup> (ART v1.5)	0.009
inhalative	systemic	long-term	< 0.003 mg/m <sup>3</sup> (ART v1.5)	0.1
dermal	systemic	long-term	0.24 mg/kg bw/day (ECETOC TRA)	0.2

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			worker v2.0)	
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### 1.3.3. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	0.004 mg/m <sup>3</sup> (ART v1.5)	0.01
inhalative	local	long-term	0.001 mg/m <sup>3</sup> (ART v1.5)	0.004
inhalative	systemic	long-term	0.001 mg/m <sup>3</sup> (ART v1.5)	0.02
dermal	systemic	long-term	0.48 mg/kg bw/day (ECETOC TRA worker v2.0)	0.4

### 1.3.4. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	< 0.027 mg/m <sup>3</sup> (ART v1.5)	0.1
inhalative	local	long-term	< 0.007 mg/m <sup>3</sup> (ART v1.5)	0.03
inhalative	systemic	long-term	< 0.007 mg/m <sup>3</sup> (ART v1.5)	0.2
dermal	systemic	long-term	0.048 mg/kg bw/day (ECETOC TRA worker v2.0)	0.04

### 1.3.5. Worker exposure: Use as laboratory reagent (PROC15)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	< 0.004 mg/m <sup>3</sup> (ART v1.5)	0.01
inhalative	local	long-term	< 0.001 mg/m <sup>3</sup> (ART v1.5)	0.004
inhalative	systemic	long-term	< 0.001 mg/m <sup>3</sup> (ART v1.5)	0.02
dermal	systemic	long-term	0.012 mg/kg	0.01

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			bw/day (ECETOC TRA worker v2.0)	
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### 1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

For further information, please contact [sds-support@chemours.com](mailto:sds-support@chemours.com).

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**ES 2: Industrial use; Formulation [mixing] of preparations and/or re-packaging (SU10); Formulation [mixing] of preparations and/ or re-packaging (excluding alloys); Small user.; Coatings and paints, thinners, paint removers (PC9a).; Non-metal surface treatment products (PC15).; Washing and cleaning products (PC35).**

### 2.1. Title section

<b>Exposure Scenario name</b>	: Industrial use, Formulation & (re)packing of substances and mixtures, Small user
<b>Structured Short Title</b>	: Industrial use; Formulation [mixing] of preparations and/or re-packaging (SU10); Formulation [mixing] of preparations and/ or re-packaging (excluding alloys); Small user.; Coatings and paints, thinners, paint removers (PC9a).; Non-metal surface treatment products (PC15).; Washing and cleaning products (PC35).

Environment		
<b>CS 1</b>	<b>Formulation &amp; (re)packing of substances and mixtures, Small scale</b>	ERC2
Worker		
<b>CS 2</b>	<b>Material transfers</b>	PROC8b
<b>CS 3</b>	<b>Batch process, Mixing operations</b>	PROC5
<b>CS 4</b>	<b>Material transfers</b>	PROC9
<b>CS 5</b>	<b>Laboratory activities</b>	PROC15

### 2.2. Conditions of use affecting exposure

#### 2.2.1. Control of environmental exposure: Formulation into mixture (ERC2)

Product (article) characteristics	
Covers concentrations up to 35 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Annual use rate (tonnes/year)	: 5.2 ton(s)/year
Maximum daily site tonnage (kg/day)	: 3.48 kg/day
Fraction of EU tonnage used in re-	: 0.1

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gion
Fraction of Regional tonnage used : 0.067 locally
Release type : Intermittent release
Emission days : 10
<b>Technical and organisational conditions and measures</b>
Process designed to minimize releases to wastewater. Process designed to minimize releases to soil. Process designed to minimize releases to air.
Recovery and reuse of rinsate from containers, vats and equipment to eliminate substance release to waste water.
<b>Conditions and measures related to sewage treatment plant</b>
STP type : Municipal Sewage Treatment Plant
STP sludge treatment : No application of sewage sludge to soil
STP effluent : 2,000 m3/d
<b>Conditions and measures related to treatment of waste (including article waste)</b>
Waste treatment : Hazardous waste incineration
<b>Other conditions affecting environmental exposure</b>
Receiving surface water flow : 18,000 m3/d

### 2.2.2. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

<b>Product (article) characteristics</b>
Covers concentrations up to 35 %
Physical form of product : Liquid Not volatile
<b>Amount used (or contained in articles), frequency and duration of use/exposure</b>
Amount per Day : 10.5 kg/day
Use frequency : Covers exposure up to 60 minutes/day
<b>Technical and organisational conditions and measures</b>



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Regular inspection and maintenance of equipment and machines Good natural ventilation
Reduce contact between product and air
<b>Mass transfer rate</b> Used ART model. < 1 L/min
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. For further specification, refer to section 8 of the SDS. Dermal - minimum efficiency of 90 %
<b>Other conditions affecting workers exposure</b>
Body parts exposed : Both hands
Indoor or outdoor use : Indoor use
Room size : 30 m <sup>3</sup>
Temperature : 25 °C
<b>Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply</b>
Wear suitable coveralls to prevent exposure to the skin.

### 2.2.3. Control of worker exposure: Mixing or blending in batch processes (PROC5)

<b>Product (article) characteristics</b>
Covers concentrations up to 35 %
Physical form of product : Liquid Not volatile
<b>Amount used (or contained in articles), frequency and duration of use/exposure</b>
Amount per Day : 10.5 kg/day
Use frequency : Covers exposure up to 60 minutes/day
<b>Technical and organisational conditions and measures</b>
Regular inspection and maintenance of equipment and machines Good natural ventilation Ensure that the distance from worker to task is greater than 1 m.
Low containment using loose lids on vessels.
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>

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Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.  
For further specification, refer to section 8 of the SDS.  
Dermal - minimum efficiency of 90 %

### Other conditions affecting workers exposure

Body parts exposed	: Both hands
Indoor or outdoor use	: Indoor use
Room size	: 30 m <sup>3</sup>
Temperature	: 25 °C

### Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Wear suitable coveralls to prevent exposure to the skin.

### 2.2.4. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

### Product (article) characteristics

Covers concentrations up to 7 %

Physical form of product	: Liquid
	: Not volatile

### Amount used (or contained in articles), frequency and duration of use/exposure

Amount per Day	: 10.5 kg/day
Use frequency	: Covers exposure up to 60 minutes/day

### Technical and organisational conditions and measures

Regular inspection and maintenance of equipment and machines  
Good natural ventilation  
Ensure that the distance from worker to task is greater than 1 m.  
Reduce contact between product and air

### Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.  
For further specification, refer to section 8 of the SDS.  
Dermal - minimum efficiency of 90 %

### Other conditions affecting workers exposure

Body parts exposed	: Both hands
Indoor or outdoor use	: Indoor use

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Room size	: 100 m³
Temperature	: 25 °C
<b>Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply</b>	
Wear suitable coveralls to prevent exposure to the skin.	

### 2.2.5. Control of worker exposure: Use as laboratory reagent (PROC15)

Product (article) characteristics	
Covers concentrations up to 35 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Amount per Day	: 10.5 kg/day
Use frequency	: Covers exposure up to 15 minutes/day
Technical and organisational conditions and measures	
Regular inspection and maintenance of equipment and machines Good natural ventilation	
Reduce contact between product and air	
Submerged loading.	
Mass transfer rate	
Used ART model. < 0.1 L/min	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. For further specification, refer to section 8 of the SDS. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Both hands
Indoor or outdoor use	: Indoor use
Room size	: 30 m³
Temperature	: 25 °C
<b>Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply</b>	

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Wear suitable coveralls to prevent exposure to the skin.

### 2.3. Exposure estimation and reference to its source

#### 2.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Protection Target	Exposure estimate	RCR
Freshwater	0.000814 mg/L (ECETOC TRA environment v2.0)	0.9
Marine water	0.000814 mg/L (ECETOC TRA environment v2.0)	0.9
Freshwater sediment	0.00432 mg/kg dry weight (ECETOC TRA environment v2.0)	0.9
Marine sediment	0.00432 mg/kg dry weight (ECETOC TRA environment v2.0)	0.9
Agricultural soil	< 0.0000001 mg/kg dry weight (ECETOC TRA environment v2.0)	< 0.001
Grassland	< 0.0000001 mg/kg dry weight (ECETOC TRA environment v2.0)	< 0.001
Sewage treatment plant	0.00814 mg/L (ECETOC TRA environment v2.0)	< 0.001

#### 2.3.2. Worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	< 0.012 mg/m <sup>3</sup> (ART v1.5)	0.04
inhalative	local	long-term	< 0.003 mg/m <sup>3</sup> (ART v1.5)	0.01
inhalative	systemic	long-term	< 0.003 mg/m <sup>3</sup> (ART v1.5)	0.07
dermal	systemic	long-term	0.24 mg/kg bw/day (ECETOC TRA worker v2.0)	0.20

#### 2.3.3. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
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		tor	mate	
inhalative	local	short-term	< 0.033 mg/m <sup>3</sup> (ART v1.5)	0.1
inhalative	local	long-term	< 0.009 mg/m <sup>3</sup> (ART v1.5)	0.03
inhalative	systemic	long-term	< 0.009 mg/m <sup>3</sup> (ART v1.5)	0.19
dermal	systemic	long-term	0.48 mg/kg bw/day (ECETOC TRA worker v2.0)	0.4

### 2.3.4. Worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	< 0.003 mg/m <sup>3</sup> (ART v1.5)	0.007
inhalative	local	long-term	< 0.001 mg/m <sup>3</sup> (ART v1.5)	0.002
inhalative	systemic	long-term	< 0.001 mg/m <sup>3</sup> (ART v1.5)	0.01
dermal	systemic	long-term	0.048 mg/kg bw/day (ECETOC TRA worker v2.0)	0.04

### 2.3.5. Worker exposure: Use as laboratory reagent (PROC15)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	< 0.001 mg/m <sup>3</sup> (ART v1.5)	0.003
inhalative	local	long-term	< 0.001 mg/m <sup>3</sup> (ART v1.5)	0.001
inhalative	systemic	long-term	< 0.001 mg/m <sup>3</sup> (ART v1.5)	0.01
dermal	systemic	long-term	0.012 mg/kg bw/day (ECETOC TRA worker v2.0)	0.01

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### 2.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

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### ES 3: professional use; Building and construction work (SU19); Coatings.

#### 3.1. Title section

Exposure Scenario name	: professional use, Coatings
Structured Short Title	: professional use; Building and construction work (SU19); Coatings.

Environment		
CS 1	Professional, Coatings	ERC8f
Worker		
CS 2	Material transfers, Non-dedicated facility	PROC8a
CS 3	Rolling, Brushing	PROC10
CS 4	Spraying	PROC11

#### 3.2. Conditions of use affecting exposure

##### 3.2.1. Control of environmental exposure: Widespread use leading to inclusion into/onto article (outdoor) (ERC8f)

Product (article) characteristics	
Covers concentrations up to 0.1 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Annual amount for wide disperse uses	: 13 tonnes/year
Release type	: Continuous release
Emission days	: 365
Conditions and measures related to sewage treatment plant	
STP type	: Municipal Sewage Treatment Plant
STP sludge treatment	: Controlled application of sewage sludge to agricultural soil
STP effluent	: 2,000 m3/d

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### Conditions and measures related to treatment of waste (including article waste)

Waste treatment : Dispose of waste product or used containers according to local regulations.  
Landfill

### Other conditions affecting environmental exposure

Receiving surface water flow : 18,000 m3/d

### 3.2.2. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

#### Product (article) characteristics

Covers concentrations up to 0.1 %

Physical form of product : Liquid  
Not volatile

#### Amount used (or contained in articles), frequency and duration of use/exposure

Amount per use : 0.05 kg/day

Use frequency : Covers exposure up to 15 minutes/day

Use frequency : Covers exposure up to 5 days per week

Low application rate (0.03 - 0.3 l/minute)

#### Technical and organisational conditions and measures

No formation of significant aerosols or splashes  
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

#### Other conditions affecting workers exposure

Body parts exposed : Both hands  
Body

Indoor or outdoor use : Covers indoor and outdoor use.

### 3.2.3. Control of worker exposure: Roller application or brushing (PROC10)

#### Product (article) characteristics

Covers concentrations up to 0.1 %

Physical form of product : Liquid  
Not volatile



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Amount used (or contained in articles), frequency and duration of use/exposure	
Amount per use	: 0.05 kg/day
Use frequency	: Covers exposure up to 8 hours/day
Use frequency	: Covers exposure up to 5 days per week
Low application rate (0.03 - 0.3 l/minute)	
Technical and organisational conditions and measures	
No formation of significant aerosols or splashes Use long handled brushes and rollers. Downward application Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).	
Other conditions affecting workers exposure	
Body parts exposed	: Both hands Body
Indoor or outdoor use	: Covers indoor and outdoor use.

### 3.2.4. Control of worker exposure: Non-industrial spraying (PROC11)

Product (article) characteristics	
Covers concentrations up to 0.1 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Amount per use	: 0.05 kg/day
Use frequency	: Covers exposure up to 8 hours/day
Use frequency	: Covers exposure up to 5 days per week
Low application rate (0.03 - 0.3 l/minute)	
Technical and organisational conditions and measures	
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).	
Other conditions affecting workers exposure	
Body parts exposed	: Both hands Body
Indoor or outdoor use	: Covers indoor and outdoor use.

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### 3.3. Exposure estimation and reference to its source

#### 3.3.1. Environmental release and exposure: Widespread use leading to inclusion into/onto article (outdoor) (ERC8f)

Protection Target	Exposure estimate	RCR
Freshwater	< 0.0000047 mg/L (ECETOC TRA environment v2.0)	0.005
Marine water	< 0.0000005 mg/L (ECETOC TRA environment v2.0)	0.005
Freshwater sediment	0.0000647 mg/kg dry weight (ECETOC TRA environment v2.0)	0.013
Marine sediment	0.0000064 mg/kg dry weight (ECETOC TRA environment v2.0)	0.013
Agricultural soil	< 0.0000001 mg/kg dry weight (ECETOC TRA environment v2.0)	< 0.001
Sewage treatment plant	0.0000379 mg/L (ECETOC TRA environment v2.0)	< 0.001

#### 3.3.2. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
dermal	systemic	long-term	0.01 mg/kg bw/day (ECETOC TRA worker v2.0)	0.008

#### 3.3.3. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
dermal	systemic	long-term	0.03 mg/kg bw/day (ECETOC TRA worker v2.0)	0.025

#### 3.3.4. Worker exposure: Non-industrial spraying (PROC11)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
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inhalative	local	short-term	0.02 mg/m <sup>3</sup> (ECETOC TRA worker v2.0)	0.07
inhalative	local	long-term	0.005 mg/m <sup>3</sup> (ECETOC TRA worker v2.0)	0.02
inhalative	systemic	long-term	0.005 mg/m <sup>3</sup> (ECETOC TRA worker v2.0)	0.1
dermal	systemic	long-term	0.01 mg/kg bw/day (ECETOC TRA worker v2.0)	0.008

### 3.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

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### ES 4: Consumer use; Building and construction work (SU19); Coatings.

#### 4.1. Title section

<b>Exposure Scenario name</b>	: Consumer use, Coatings
<b>Structured Short Title</b>	: Consumer use; Building and construction work (SU19); Coatings.

Environment		
<b>CS 1</b>	<b>Consumer use, Coatings</b>	ERC8f
Consumer		
<b>CS 2</b>	<b>Consumer, Rolling, Brushing, Spraying</b>	PC9a, PC15, AC4

#### 4.2. Conditions of use affecting exposure

##### 4.2.1. Control of environmental exposure: Widespread use leading to inclusion into/onto article (outdoor) (ERC8f)

Product (article) characteristics	
Covers concentrations up to 0.1 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Amount per use	: 13 tonnes/year
Release type	: Continuous release
Emission days	: 365
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Dispose of waste product or used containers according to local regulations. Landfill
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18,000 m3/d
Indoor or outdoor use	: Covers indoor and outdoor use.

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### 4.2.2. Control of consumer exposure: Coatings and paints, thinners, paint removers (PC9a) / Non-metal surface treatment products (PC15) Stone, plaster, cement, glass and ceramic articles (AC4)

Product (article) characteristics	
Covers concentrations up to 0.1 %	
Physical form of product	: Liquid Not volatile
Amount used (or contained in articles), frequency and duration of use/exposure	
Amounts used	: 3000 g/event
Use frequency	: Covers exposure up to 2 event(s)/year
Use frequency	: Covers exposure up to 0.42 hours/day
Conditions and measures related to personal protection, hygiene and health evaluation	
Do not ingest. If swallowed then seek immediate medical assistance. Avoid contact with skin and eyes. Keep away from children.	
Other conditions affecting consumers exposure	
Body parts exposed	: Assumes that potential dermal contact is limited to hands.
Indoor or outdoor use	: Covers indoor and outdoor use.
Room size	: 34 m <sup>3</sup>
Ventilation rate	: 1.5

### 4.3. Exposure estimation and reference to its source

#### 4.3.1. Environmental release and exposure: Widespread use leading to inclusion into/onto article (outdoor) (ERC8f)

Protection Target	Exposure estimate	RCR
Freshwater	< 0.0000047 mg/L (ECETOC TRA environment v2.0)	0.005
Marine water	< 0.0000005 mg/L (ECETOC TRA environment v2.0)	0.005
Freshwater sediment	0.0000647 mg/kg dry weight (ECETOC TRA environment v2.0)	0.013

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Marine sediment	0.0000064 mg/kg dry weight (ECETOC TRA environment v2.0)	0.013
Agricultural soil	< 0.0000001 mg/kg dry weight (ECETOC TRA environment v2.0)	< 0.001
Sewage treatment plant	0.0000379 mg/L (ECETOC TRA environment v2.0)	< 0.001

### 4.3.2. Consumer exposure: Coatings and paints, thinners, paint removers (PC9a) / Non-metal surface treatment products (PC15) Stone, plaster, cement, glass and ceramic articles (AC4)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
inhalative	local	short-term	0.016 mg/m <sup>3</sup> (ConsExpo)	0.2
inhalative	local	long-term	0.005 mg/m <sup>3</sup> (ConsExpo)	0.05
inhalative	systemic	long-term	0.005 mg/m <sup>3</sup> (ConsExpo)	0.5
dermal	systemic	long-term	0.022 mg/kg bw/day (ConsExpo)	0.04

### 4.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

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**ES 5: Consumer use; Building and construction work (SU19); Coatings; Article service life.; Coatings and paints, thinners, paint removers (PC9a); Stone, plaster, cement, glass and ceramic articles (AC4).; Non-metal surface treatment products (PC15).**

### 5.1. Title section

<b>Exposure Scenario name</b>	: Consumer use, Coatings, Article service life
<b>Structured Short Title</b>	: Consumer use; Building and construction work (SU19); Coatings; Article service life.; Coatings and paints, thinners, paint removers (PC9a); Stone, plaster, cement, glass and ceramic articles (AC4).; Non-metal surface treatment products (PC15).

Environment		
<b>CS 1</b>	<b>Consumer, Coatings, Article service life</b>	ERC10a
Consumer		
<b>CS 2</b>	<b>Coatings, Article service life</b>	PC9a, PC15, AC4

### 5.2. Conditions of use affecting exposure

#### 5.2.1. Control of environmental exposure: Widespread use of articles with low release (outdoor) (ERC10a)

Product (article) characteristics	
Physical form of product	: Solid surface layer coating
Amount used (or contained in articles), frequency and duration of use/exposure	
Annual amount supplied into the consumer use(s)	: 13000 kg
Release type	: Continuous release
Emission days	: 365
Conditions and measures related to treatment of waste (including article waste)	
Waste treatment	: Dispose of waste product or used containers according to local regulations. Landfill

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### Other conditions affecting environmental exposure

Receiving surface water flow	:	18,000 m3/d
Indoor or outdoor use	:	Covers indoor and outdoor use.

### 5.2.2. Control of consumer exposure: Coatings and paints, thinners, paint removers (PC9a) / Non-metal surface treatment products (PC15) Stone, plaster, cement, glass and ceramic articles (AC4)

#### Product (article) characteristics

Physical form of product	:	Solid surface layer coating
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#### Amount used (or contained in articles), frequency and duration of use/exposure

Amount per Use	:	0.02 mg/cm2
Use frequency	:	Covers exposure up to 24 hours/day
Duration	:	Covers exposure up to 3 yr

#### Other conditions affecting consumers exposure

Body parts exposed	:	Palms of both hands (480 cm2)
Indoor or outdoor use	:	Indoor use

## 5.3. Exposure estimation and reference to its source

### 5.3.1. Environmental release and exposure: Widespread use of articles with low release (outdoor) (ERC10a)

Protection Target	Exposure estimate	RCR
Freshwater	0.0000119 mg/L (ECETOC TRA environment v2.0)	0.01
Marine water	< 0.0000012 mg/L (ECETOC TRA environment v2.0)	0.01
Freshwater sediment	0.000165 mg/kg dry weight (ECETOC TRA environment v2.0)	0.03
Marine sediment	0.0000165 mg/kg dry weight (ECETOC TRA environment v2.0)	0.03
Agricultural soil	0.0000129 mg/kg dry weight (ECETOC TRA environment v2.0)	< 0.001



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Sewage treatment plant	0.000111 mg/L (ECETOC TRA environment v2.0)	< 0.001
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### 5.3.2. Consumer exposure: Coatings and paints, thinners, paint removers (PC9a) / Non-metal surface treatment products (PC15) Stone, plaster, cement, glass and ceramic articles (AC4)

Exposure route	Health effect	Exposure indicator	Exposure estimate	RCR
dermal	systemic	long-term	< 0.001 mg/kg bw/day (ConsExpo)	< 0.01
oral	systemic	long-term	< 0.001 mg/kg bw/day (ConsExpo)	0.01

### 5.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

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