

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

| | | | |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 29.05.2024 |
| 9.0 | 25.11.2024 | 1336757-00049 | Date of first issue: 27.02.2017 |

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

1.1 Product identifier

Trade name : Capstone™ FS-63 Fluorosurfactant

SDS-Identcode : 130000051604

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

Use of the Sub-stance/Mixture : Surfactant

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

+(44)-870-8200418 (CHEMTREC - Recommended)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| | |
|---|--|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapour. |
| Acute toxicity, Category 1 | H330: Fatal if inhaled. |
| Eye irritation, Category 2 | H319: Causes serious eye irritation. |
| Specific target organ toxicity - single ex- | H336: May cause drowsiness or dizziness. |

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posure, Category 3

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 :

- H226 Flammable liquid and vapour.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H336 May cause drowsiness or dizziness.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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.
- 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
Propan-2-ol

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).
Inhalation of decomposition products in high concentration may cause shortness of breath (lung oedema).
Vapours may form explosive mixture with air.

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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 | >= 30 - < 50 |
| 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 | >= 20 - < 30 |

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.
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 plenty of water.
Remove contaminated clothing and shoes.
Get medical attention if symptoms occur.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention.

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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:
Respiratory disorder
Shortness of breath
Lung oedema
Cough
Irritation

Eye contact may provoke the following symptoms
Lachrymation
Redness
Discomfort

Risks : Causes serious eye irritation.
Fatal if inhaled.
May cause drowsiness or dizziness.
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
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.
Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
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

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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.
Remove all sources of ignition.
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 : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapours/mists with a water spray jet.
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.

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 | : | If sufficient ventilation is unavailable, use with local exhaust ventilation. Use explosion-proof electrical, ventilating and lighting equipment. |
| Advice on safe handling | : | Do not breathe mist or vapours. Do not swallow. Do not get in eyes. Avoid prolonged or repeated contact with skin. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment Non-sparking tools should be used. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. 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. 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. Keep away from heat and sources of ignition. |
| Advice on common storage | : | Do not store with the following product types: Strong oxidizing agents Self-reactive substances and mixtures Organic peroxides Flammable liquids Flammable solids Pyrophoric liquids Pyrophoric solids Self-heating substances and mixtures Substances and mixtures, which in contact with water, emit flammable gases Explosives Gases |

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Very acutely toxic substances and mixtures

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/m ³ | 2000/39/EC |
| | | STEL | 3 ppm 2,5 mg/m ³ | 2000/39/EC |
| Carbonyl difluoride | 353-50-4 | TWA | 2,5 mg/m ³ (Fluorine) | 2000/39/EC |
| Carbon dioxide | 124-38-9 | TWA | 5.000 ppm 9.000 mg/m ³ | 2006/15/EC |
| Carbon monoxide | 630-08-0 | STEL | 100 ppm 117 mg/m ³ | 2017/164/EU |
| | | TWA | 20 ppm 23 mg/m ³ | 2017/164/EU |
| | | TWA | 20 ppm 23 mg/m ³ | 2004/37/EC |
| | | STEL | 100 ppm 117 mg/m ³ | 2004/37/EC |

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 ³ |
| | Workers | Skin contact | Long-term systemic effects | 1,2 mg/kg bw/day |
| | Workers | Inhalation | Long-term systemic effects | 0,042 mg/m ³ |
| | Workers | Inhalation | Long-term local effects | 0,24 mg/m ³ |
| | Consumers | Skin contact | Long-term systemic effects | 0,6 mg/kg bw/day |
| | Consumers | Inhalation | Long-term systemic effects | 0,0104 mg/m ³ |

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|-------------|-----------|--------------|----------------------------|--------------------|
| | Consumers | Ingestion | Long-term systemic effects | 0,006 mg/kg bw/day |
| Propan-2-ol | Workers | Inhalation | Long-term systemic effects | 500 mg/m3 |
| | Workers | Skin contact | Long-term systemic effects | 888 mg/kg bw/day |
| | Consumers | Inhalation | Long-term systemic effects | 89 mg/m3 |
| | Consumers | Skin contact | Long-term systemic effects | 319 mg/kg bw/day |
| | Consumers | Ingestion | Long-term systemic effects | 26 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 |
| Propan-2-ol | Marine sediment | 0,00049 mg/kg dry weight (d.w.) |
| | 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

Processing may form hazardous compounds (see section 10).
Minimize workplace exposure concentrations.
If sufficient ventilation is unavailable, use with local exhaust ventilation.
Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment

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

Hand protection
Material : butyl-rubber
Break through time : 480 min

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Glove thickness : 0,89 mm

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.
Wear the following personal protective equipment:
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.
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.

Filter type : Combined particulates, acidic gas/vapour and organic vapour type (AE-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|--|
| Appearance | : liquid |
| Colour | : clear, colourless, yellow |
| Odour | : alcohol-like |
| Odour Threshold | : No data available |
| pH | : 7 - 8,5 |
| Melting point/freezing point | : No data available |
| Initial boiling point and boiling range | : No data available |
| Flash point | : 26 °C Method: Pensky-Martens closed cup |
| Evaporation rate | : No data available |
| Flammability (solid, gas) | : Not applicable |
| Upper explosion limit / Upper | : No data available |

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flammability limit

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 13,79 hPa (20 °C)
Solvent

Relative vapour density : No data available

Density : 1,1 g/cm³

Solubility(ies)
Water solubility : soluble

Partition coefficient: n-octanol/water : log Pow: 0,35
(for a component of this mixture)

Auto-ignition temperature : No data available

Decomposition temperature : > 200 °C

Viscosity
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) : Ignitable (see flash point)

Particle size : Not applicable

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 : Flammable liquid and vapour.
Vapours may form explosive mixture with air.
Can react with strong oxidizing agents.
Hazardous decomposition products will be formed at elevated temperatures.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

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10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

Thermal decomposition : hydrofluoric acid
Carbonyl difluoride
Carbon dioxide
Carbon monoxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

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
Remarks: Based on data from similar materials

Acute inhalation toxicity : Acute toxicity estimate (Rat): 0,005 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Expert judgement
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg
Remarks: Based on data from similar materials

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 |

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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 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 |

Propan-2-ol:

| | |
|---------|----------------------|
| Species | : Rabbit |
| Result | : No skin irritation |

Serious eye damage/eye irritation

Causes serious 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 |

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 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) |
| Exposure routes | : Skin contact |

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|---------|---------------------------|
| Species | : Mouse |
| Method | : OECD Test Guideline 429 |
| 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.

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. |

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:

Propan-2-ol:

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

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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 |

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

May cause drowsiness or dizziness.

Components:

Propan-2-ol:

| | |
|------------|--------------------------------------|
| Assessment | : May cause drowsiness or dizziness. |
|------------|--------------------------------------|

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

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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:

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

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 |

| | |
|-------------------|--|
| 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 |

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.

Experience with human exposure

Product:

| | |
|-------------|---|
| Inhalation | : Target Organs: Lungs Symptoms: Irritation, Shortness of breath, Symptoms may be delayed. |
| Eye contact | : Symptoms: Irritation, Discomfort, Blurred vision |
| Ingestion | : Symptoms: Shortness of breath, Rapid respiration, Fever, Drowsiness |

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SECTION 12: Ecological information

12.1 Toxicity

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 |

Propan-2-ol:

| | |
|---|--|
| Toxicity to fish | : LC50 (Pimephales promelas (fathead minnow)): 9.640 mg/l Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (Daphnia magna (Water flea)): > 10.000 mg/l Exposure time: 24 h |
| Toxicity to microorganisms | : EC50 (Pseudomonas putida): > 1.050 mg/l Exposure time: 16 h |

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II

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 |
|------------------|---|

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 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 |
|-----------------|---|

Propan-2-ol:

| | |
|--|-----------------|
| Partition coefficient: n-octanol/water | : log Pow: 0,05 |
|--|-----------------|

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). |
|------------|---|

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 Other adverse effects

Product:

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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.

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.

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.
Empty containers retain residue and can be dangerous.
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.
If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

| | |
|------|-----------|
| ADN | : UN 1993 |
| ADR | : UN 1993 |
| RID | : UN 1993 |
| IMDG | : UN 1993 |
| IATA | : UN 1993 |

14.2 UN proper shipping name

| | |
|-----|---|
| ADN | : FLAMMABLE LIQUID, N.O.S. (Propan-2-ol) |
| ADR | : FLAMMABLE LIQUID, N.O.S. (Propan-2-ol) |
| RID | : FLAMMABLE LIQUID, N.O.S. |

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(Propan-2-ol)

IMDG : FLAMMABLE LIQUID, N.O.S.
(Propan-2-ol, Reaction mass of mixed
(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts)

IATA : Flammable liquid, n.o.s.
(Propan-2-ol)

14.3 Transport hazard class(es)

| | Class | Subsidiary risks |
|-------------|-------|------------------|
| ADN | : 3 | |
| ADR | : 3 | |
| RID | : 3 | |
| IMDG | : 3 | |
| IATA | : 3 | |

14.4 Packing group

ADN
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

ADR
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3
Tunnel restriction code : (D/E)

RID
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG
Packing group : III
Labels : 3
EmS Code : F-E, S-E

IATA (Cargo)
Packing instruction (cargo aircraft) : 366
Packing instruction (LQ) : Y344
Packing group : III
Labels : Flammable Liquids

IATA (Passenger)
Packing instruction (passenger aircraft) : 355
Packing instruction (LQ) : Y344
Packing group : III

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Labels : Flammable Liquids

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : 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 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

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

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

| | |
|------|--|
| H225 | : Highly flammable liquid and vapour. |
| H319 | : Causes serious eye irritation. |
| H330 | : Fatal if inhaled. |
| H336 | : May cause drowsiness or dizziness. |
| H373 | : May cause damage to organs through prolonged or repeated exposure. |
| H410 | : Very toxic to aquatic life with long lasting effects. |

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Full text of other abbreviations

| | |
|--------------------|---|
| Acute Tox. | : Acute toxicity |
| Aquatic Chronic | : Long-term (chronic) aquatic hazard |
| Eye Irrit. | : Eye irritation |
| Flam. Liq. | : Flammable liquids |
| STOT RE | : Specific target organ toxicity - repeated exposure |
| STOT SE | : Specific target organ toxicity - single 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 |
| 2000/39/EC / TWA | : Limit Value - eight hours |
| 2000/39/EC / STEL | : Short term exposure limit |
| 2004/37/EC / STEL | : Short term exposure limit |
| 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 |

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

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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:

| | |
|-------------------|------|
| Flam. Liq. 3 | H226 |
| Acute Tox. 1 | H330 |
| Eye Irrit. 2 | H319 |
| STOT SE 3 | H336 |
| STOT RE 2 | H373 |
| Aquatic Chronic 1 | H410 |

Classification procedure:

Based on product data or assessment
Expert judgement and weight of evidence determination.
Calculation method
Calculation method
Calculation method
Calculation method

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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.

EG / EN