

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Capstone™ FS-63 Fluorosurfactant

SDS-Identcode : 130000051604

Recommended use of the chemical and restrictions on use

Recommended use : Surfactant

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.

Manufacturer or supplier's details

Company : Chemours Korea Inc.

Address : 12FL, Majestarcity Tower 1, 12, Seocho-daero 38-gil, Seocho-gu, Seoul 06655, Korea

Telephone : 82-2-2015-5000

Emergency telephone number : 080-880-0454

Telefax : 82-2-2015-5091

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Inhalation) : Category 1

Serious eye damage/eye irritation : Category 2A

Specific target organ toxicity - single exposure : Category 3 (Narcotic effects)

Specific target organ toxicity - : Category 2 (Liver)

SAFETY DATA SHEET



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Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

repeated exposure

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

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 (Liver) 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.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/ attention if you feel unwell.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P370 + P378 In case of fire: Use water spray, alcohol-resistant

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

foam, dry chemical or carbon dioxide to extinguish.
P391 Collect spillage.

Storage:

P403 + P233 + P235 Store in a well-ventilated place. Keep container tightly closed. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container according to waste-related laws

Other hazards which do not result in classification

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name	CAS-No.	Concentration (% w/w)
Reaction mass of mixed (3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphates, ammonium salts	No data available	Not Assigned	>= 30 - < 40
Propan-2-ol	Isopropyl alcohol	67-63-0	>= 20 - < 30

4. 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.
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.
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.
If inhaled	: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

If swallowed	: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.
Most important symptoms and effects, both acute and delayed	: 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 Causes serious eye irritation. Fatal if inhaled. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure.
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).
Notes to physician	: Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

Suitable and unsuitable extinguishing media

Suitable extinguishing media	: Water spray Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	: High volume water jet
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

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

Carbon oxides

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

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : 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).
- 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.
- Methods and materials for containment and 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.

7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

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.
- Conditions for safe storage : 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.
- Materials to avoid : Do not store with the following product types:
Oxidizing solids
Oxidizing liquids

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Propan-2-ol	67-63-0	TWA	200 ppm	KR OEL
		STEL	400 ppm	KR OEL
		TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH

Other ingredients, which are listed in section 3 but not listed in this section, do not have established occupational exposure limit values.

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
hydrofluoric acid	7664-39-3	TWA	0.5 ppm (Fluorine)	KR OEL
	Further information: Substances designated by 'Skin' may be absorbed into the bloodstream through the skin, mucous membrane and eye and contribute to the overall effect. (Skin notation does not apply to the skin irritant)			
		C	3 ppm (Fluorine)	KR OEL
	Further information: Substances designated by 'Skin' may be absorbed into the bloodstream through the skin, mucous membrane and eye and contribute to the overall effect. (Skin notation does not apply to the skin irritant)			
		TWA	0.5 ppm (Fluorine)	ACGIH
		C	2 ppm (Fluorine)	ACGIH
Carbonyl difluoride	353-50-4	TWA	2 ppm	KR OEL
		STEL	5 ppm	KR OEL
		TWA	2 ppm	ACGIH
		STEL	5 ppm	ACGIH
Carbon dioxide	124-38-9	TWA	5,000 ppm	KR OEL
		STEL	30,000 ppm	KR OEL
		TWA	5,000 ppm	ACGIH
		STEL	30,000 ppm	ACGIH
Carbon monoxide	630-08-0	TWA	30 ppm	KR OEL
	Further information: Known human reproductive toxicant			
		STEL	200 ppm	KR OEL
	Further information: Known human reproductive toxicant			
		TWA	30 ppm	KR PEL
		STEL	200 ppm	KR PEL
		TWA	25 ppm	ACGIH

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Propan-2-ol	67-63-0	Acetone	Urine	End of shift at end of work-week	40 mg/l	ACGIH BEI

Engineering measures : Processing may form hazardous compounds (see section

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

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. Among the following personal protective equipment, the PPEs which require safety certification need to be certified by KOSHA.

Respiratory protection	:	Use respiratory protection (gas mask) unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Filter type	:	Combined particulates, acidic gas/vapour and organic vapour type
Eye protection	:	Wear the following personal protective equipment: Safety goggles
Hand protection	:	
Material	:	butyl-rubber
Break through time	:	480 min
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).
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.

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

9. 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
Flammability (liquids)	: Ignitable (see flash point)
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: 13.79 hPa (20 °C) Solvent
Solubility(ies) Water solubility	: soluble
Relative vapour density	: No data available
Density	: 1.1 g/cm ³
Partition coefficient: n-octanol/water	: log Pow: 0.35 (for a component of this mixture)

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

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.
Molecular weight	: No data available
Particle characteristics Particle size	: Not applicable

10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions	: Reactivity: Not classified as a reactivity hazard. Chemical stability: Stable under normal conditions. Possibility of 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.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Oxidizing agents

Hazardous decomposition products

Thermal decomposition	: hydrofluoric acid Carbonyl difluoride Carbon dioxide Carbon monoxide
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11. TOXICOLOGICAL INFORMATION

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



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

Health hazard information

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

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

No data available

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

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
Result	: No eye irritation
Method	: OECD Test Guideline 405

Propan-2-ol:

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

Respiratory or skin sensitisation

Respiratory sensitisation

No data available

Skin sensitisation

No data available

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
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: negative

Propan-2-ol:

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

Method	: OECD Test Guideline 406
Result	: negative

Carcinogenicity

No data available

Components:

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

|| No data available

Propan-2-ol:

|| No data available

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

Germ cell mutagenicity

No data available

Components:

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

|| No data available

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

|| No data available

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES)
	Result: negative
Genotoxicity in vitro	: Test Type: In vitro mammalian cell gene mutation test
	Result: negative

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

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

Reproductive toxicity

No data available

Components:

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

No data available

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:

No data available

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.

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

Components:

Propan-2-ol:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs (Liver) 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.

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

No data available

Experience with human exposure

No data available

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

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 (Oncorhynchus mykiss (rainbow trout)): 0.88 mg/l Exposure time: 90 d Method: OECD Test Guideline 210 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.0093 mg/l Exposure time: 21 d Method: OECD Test Guideline 211 Remarks: Based on data from similar materials
M-Factor (Chronic aquatic toxicity)	: 10

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

II

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

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
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Propan-2-ol:

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

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
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Propan-2-ol:

Partition coefficient: n-octanol/water	: log Pow: 0.05
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Mobility in soil

No data available

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:

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
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Results of PBT and vPvB assessment	:	PBT substance
Additional ecological information	:	Information given is based on data on the components and the ecotoxicology of similar products.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of contents and container according to wastes control act.

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.

Disposal precautions

Dispose of contents and container according to wastes control act.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Propan-2-ol)
Class	:	3
Packing group	:	III
Labels	:	3
Environmentally hazardous	:	no

IATA-DGR

UN/ID No.	:	UN 1993
Proper shipping name	:	Flammable liquid, n.o.s. (Propan-2-ol)
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

IMDG-Code

UN number	: UN 1993
Proper shipping name	: 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)
Class	: 3
Packing group	: III
Labels	: 3
EmS Code	: F-E, <u>S-E</u>
Marine pollutant	: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

Refer to section 15 for specific national regulation.

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.

15. REGULATORY INFORMATION

National regulatory information

Regulation under the Occupational Safety and Health Act

Harmful Substances Prohibited from Manufacturing

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Harmful Agents to be kept below Occupational Exposure Limits

Chemical name	CAS-No.
Isopropyl alcohol	67-63-0

Harmful Agents Required to be kept below Permission Levels

Not applicable

Hazardous substances requiring management

Chemical name	CAS-No.	Threshold limits (%)
Isopropyl alcohol	67-63-0	≥ 1 %

Special Management Materials

Not applicable

Controlled Substances Subject to Environment Monitoring

Chemical name	CAS-No.	Threshold limits (%)
Isopropyl alcohol	67-63-0	≥ 1 %

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
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Controlled Substances Subject to Health Examination

Chemical name	CAS-No.	Threshold limits (%)
Isopropyl alcohol	67-63-0	>= 1 %

Hazardous Substances Subject to Process Safety Management (PSM) Reporting Obligation

Chemical name/Classification	Manufacturing or handling quantity	Storage quantity
Flammable liquids	5,000 kg	200,000 kg

K-OSHA Hazardous Substances (Occupational Safety and Health Regulations, Table 1)

Category
Flammable liquid
Acute toxic substances (inhalation)

K-OSHA Hazardous Substances (Occupational Safety and Health Regulations, Table 9)

Category	Manufacturing or handling quantity
Flammable liquid	400 litre
Acute toxic substances (inhalation)	5 kilogram

Regulation under the Chemicals Control Act

Toxic Chemicals

Not applicable

Restricted Chemicals

Not applicable

Prohibited Chemicals

Not applicable

Toxic Release Inventory

Chemical name	CAS-No.	Group	Threshold limits (%)
2-Propanol	67-63-0	Group II	>= 1 %

Accident Precaution Chemicals

Not applicable

Dangerous Substances Safety Management Act

Classification : Group 4, Flammable liquids, Type 2 petroleum, Water soluble liquid

Hazard rank : Hazardous rank III

Designated Quantity : 2000 litre

Safety Warning : Keep away from fire

Wastes Control Act

Industrial general wastes

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
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Follow article 13 of the act to dispose the product waste

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.

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/>

Issuing date : 2017/02/27

Revision number and date

Number of Revision : 51

Revision Date : 2024/11/25

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

Date format : yyyy/mm/dd

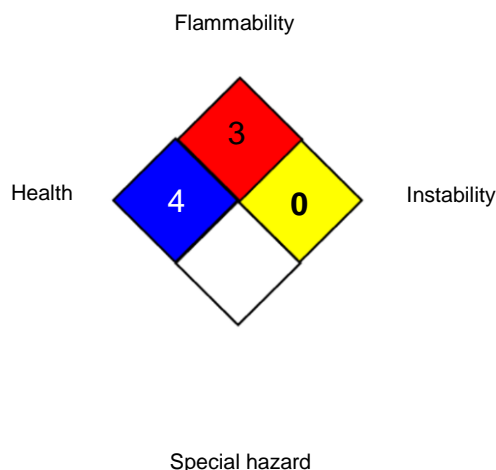
SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
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NFPA:



Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
KR OEL	: Harmful Agents to be kept below Occupational Exposure Limits
KR PEL	: Harmful Agents Required to be kept below Permission Levels
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
ACGIH / C	: Ceiling limit
KR OEL / TWA	: Time Weighted Average
KR OEL / STEL	: Short Term Exposure Limit
KR OEL / C	: Ceiling
KR PEL / TWA	: TWA
KR PEL / STEL	: STEL

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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

SAFETY DATA SHEET



Capstone™ FS-63 Fluorosurfactant

Version 15.0	Revision Date: 2024/11/25	SDS Number (Internal): 1336771-00052	MSDS number: AA00152-0000051604 Date of last issue: 2024/05/29 Date of first issue: 2017/02/27
-----------------	------------------------------	---	--

Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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

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