

**Capstone® FS-64 Fluorosurfactant**

Version 2.0

Revision Date 05/07/2015

Ref. 130000052149

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Capstone® FS-64 Fluorosurfactant
Product Use : Surfactant, For industrial use only.

Restrictions on use : Do not use product for anything outside of the above specified uses
Manufacturer/Supplier : DuPont
1007 Market Street
Wilmington, DE 19898
United States of America

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category
Acute toxicity (Inhalation) Category 2

Label content

Pictogram :



Signal word : Danger

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Hazardous warnings : Fatal if inhaled.

Hazardous prevention measures : Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Use only outdoors or in a well-ventilated area.
Wear respiratory protection.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER/doctor.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

The hazards of this product are associated mainly with its processing.
Inhalation of aerosol or fine spray mist may cause serious respiratory problems.
Inhalation of decomposition products in high concentration may cause shortness of breath (lung oedema).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Phosphoric Acid, mixed esters with partially fluorinated alcohol, ammonium salts		15.3 %

Any component and/or concentration (exact percentage) not specifically identified is considered a trade secret.

SECTION 4. FIRST AID MEASURES

General advice : When symptoms persist or in all cases of doubt seek medical advice.

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Inhalation	: Move to fresh air. Oxygen or artificial respiration if needed. Symptoms may be delayed. Call a physician immediately.
Skin contact	: Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use.
Eye contact	: Rinse immediately with plenty of water for at least 15 minutes. Seek medical advice.
Ingestion	: Call a physician or poison control centre immediately. If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Most important symptoms/effects, acute and delayed	: Inhalation may provoke the following symptoms: Shortness of breath Lung oedema Irritation Eye contact may provoke the following symptoms: Tearing, redness, or discomfort.
Protection of first-aiders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing
Notes to physician	: Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: No applicable data available.
Specific hazards	: Hazardous decomposition products formed under fire conditions. Hazardous combustion products: Hydrogen fluoride Carbon monoxide carbon dioxide
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary.
Further information	: Evacuate personnel to safe areas. Cool containers/tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Evacuate personnel to safe areas. Use personal protective equipment. Ventilate the area.
- Environmental precautions : Do not discharge to streams, ponds, lakes or sewers. Avoid subsoil penetration.
- Spill Cleanup : Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labelled containers.
- Accidental Release Measures : For disposal considerations see section 13.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Do not generate respirable particles unless suitable ventilation or respirator are used. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before re-use.
- Handling (Physical Aspects) : To avoid thermal decomposition, do not overheat. Thermal decomposition can lead to release of irritating gases and vapours.
- Dust explosion class : No applicable data available.
- Storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Store in accordance with National Fire Protection Association recommendations.
- Storage period : No applicable data available.
- Storage temperature : No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Engineering controls : Do not generate respirable particles unless suitable ventilation or respirator are used. In spray applications, use airless type pressure spray equipment with spray tip pressure less than 4.1 bar (60 psi), and exhaust ducts, drip pans, or other design features to prevent worker exposure to mists and overspray.
Use only in area provided with appropriate exhaust ventilation. Use appropriate workplace ventilation to remove fumes that may be released on heating.

Personal protective equipment
Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection : Additional protection: Impervious gloves

Eye protection : Wear safety glasses or coverall chemical splash goggles.

Skin and body protection : Lightweight protective clothing

Exposure Guidelines
Exposure Limit Values

Phosphoric Acid, mixed esters with partially fluorinated alcohol, ammonium salts
No applicable data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid
Form : liquid
Color : amber

Odor : none

Odor threshold : No applicable data available.

pH : 7 - 9

Melting point/range : No applicable data available.

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Boiling point/boiling range	: No applicable data available.
Flash point	: does not flash
Evaporation rate	: No applicable data available.
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: No applicable data available.
Lower explosion limit	: No applicable data available.
Vapour Pressure	: No applicable data available.
Vapour density	: No applicable data available.
Specific gravity (Relative density)	: 1.06
Bulk density	: 1,054 kg/m ³
Water solubility	: soluble
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: > 200 °C To avoid thermal decomposition, do not overheat. Thermal decomposition can lead to release of irritating gases and vapours.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 81.5 - 83.5 %

SECTION 10. STABILITY AND REACTIVITY

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Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No applicable data available.
Conditions to avoid	:	To avoid thermal decomposition, do not overheat.
Incompatible materials	:	No applicable data available.
Hazardous decomposition products	:	Incompletely burned carbon products , Hydrofluoric acid...% , Carbon dioxide, Carbon monoxide Other hazardous decomposition products may be formed.

SECTION 11. TOXICOLOGICAL INFORMATION

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Inhalation 4 h ALC - Approximate Lethal Concentration	:	0.086 mg/l , Rat Irritating to respiratory system.
Dermal LD50	:	> 5,000 mg/kg , Rat
Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	No eye irritation, Rabbit Slight irritation observed but insufficient to warrant classification
Sensitisation	:	Does not cause skin sensitisation., Local lymph node testMouse
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed

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by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

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72 h ErC50 : Pseudokirchneriella subcapitata (green algae) > 120 mg/l

72 h NOEC : Pseudokirchneriella subcapitata (green algae) 7.5 mg/l

48 h EC50 : Daphnia magna (Water flea) > 120 mg/l

Phosphoric Acid, mixed esters with partially fluorinated alcohol, ammonium salts

96 h LC50 : Oncorhynchus mykiss (rainbow trout) 24.6 mg/l

96 h LC50 : Rare Gudgeon (Gobiocypris Rarus) 27.7 mg/l

Environmental Fate

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Biodegradability

: This product was tested following the OECD 301B test guideline. The product does not meet the pass criteria as defined in the guideline, which is 60% or greater ThCO₂ (theoretical CO₂) production within 28 days.

If you have questions regarding the results of this test or the interpretation of the results from this study, please contact your DuPont representative.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : In accordance with local and national regulations.

Contaminated packaging : No applicable data available.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.



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SECTION 15. REGULATORY INFORMATION

TSCA	: Listed This material contains one or more substances which are subject to a TSCA Section 5 Consent Order or Significant New Use Rule (SNUR). This material contains one or more substances which requires export notification under TSCA Section 12(b) and 40 CFR Part 707 Subpart D:
	: Phosphoric Acid, mixed esters with partially fluorinated alcohol, ammonium salts PMN Number: P-09-0293 Contact your local DuPont sales or technical representative for more information.
SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
Title III hazard classification	: Acute Health Hazard: Yes Chronic Health Hazard: No Fire: No Reactivity/Physical hazard: No Pressure: No
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

		NFPA
Health	:	2
Flammability	:	1



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Reactivity/Physical hazard : 1

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Contact person : MSDS Coordinator, DuPont Chemicals and Fluoroproducts, Wilmington, DE
19898, (800) 441-7515

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