



IL SHIM FINE CHEMICALS

CEPTOL FLP 340

SHORT PERFLUORINATED CHAIN FLUROSURFACTANT
High Performance Anionic Fluorosurfactant

■ DESCRIPTION

CEPTOL™ FLP340 is a short chain perfluoro based anionic fluorosurfactant of the phosphate ester type. It provides surface tensions as low as 16 dynes/cm in water at very low concentrations. It also has excellent dynamic surface tension properties, allowing for rapid attainment of low equilibrium surface tensions. **CEPTOL™ FLP340** imparts excellent wetting, spreading, leveling, and flow control properties on various types of water-based coatings for architectural paints and stains, concrete coatings, industrial coatings as well as aqueous hydrocarbon surfactant solutions. **CEPTOL™ FLP340** is low foaming and can provide improved dirt pick-up resistance to exterior paints and interior low gloss paints, sealers, and stains.

■ SPECIAL FEATURES

- Provides low surface tension at low concentrations
- Excellent for wetting contaminated or difficult to coat surfaces
- Minimizes surface defects such as cratering and fisheyes
- Imparts excellent anti-blocking characteristics
- Provides oil repellency to water-based stains
- Composed of short chain C-6 perfluoro telomer
- Low foaming

■ SPECIFICATION

Appearance	Clear, colorless liquid	
Ionic Character	Anionic	
Percent Solids (Actives)	35% ± 2	
Diluent Composition	Water/Isopropanol	
Density (25°C)	1.2 g/ml	
Flash Point (Pensky-Martens, closed cup)	31°C	
pH	7.5-8.5	
Freezing Point	-15°C (2°F)	
Aqueous Surface Tension (dynes/cm) (mN/m), 25°C (77°F)	0.001% Solids	40
	0.01% Solids	18
	0.1% Solids	16
	CMC	0.014%



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■ APPLICATIONS

CEPTOL™ FLP340 is a VOC-free, water-based, short-chain fluorosurfactant of the phosphate ester type. It provides surface tensions as low as 17 dynes/cm in water at very low concentrations. It also has excellent dynamic surface tension properties, allowing for rapid attainment of low equilibrium surface tensions.

CEPTOL™ FLP340 imparts excellent wetting, spreading, leveling, and flow control properties on various types of water-based coatings for architectural paints and stains, concrete coatings, industrial coatings as well as aqueous hydrocarbon surfactant solutions.

CEPTOL™ FLP340 is low foaming and can provide improved dirt pick-up resistance to exterior paints and interior low gloss paints, sealers, and stains.

■ ATTRIBUTES

- VOC-Free
- Chloride-Free
- Low Foaming
- Imparts excellent anti-blocking characteristics
- Provides low surface tension at low concentrations
- Excellent for wetting contaminated or difficult to coat surfaces
- Minimizes surface defects such as cratering and fisheyes
- Provides oil repellency to water-based stains
- Composed of short chain C-6 perfluoro telomere

■ TYPICAL PROPERTIES¹

Appearance	Clear, colorless thin gel	
Ionic Character	Anionic	
Percent Actives	22%	
Chloride Content	<20ppm	
Density (25° C)	1.1 g/ml	
Flash Point (Pensky-Martens, closed cup)	Non-Flammable	
pH(1% sol'n in water)	3-4	
Aqueous Surface Tension dynes/cm (mN/m), 25° C (77° F)	0.001% Actives	30
	0.01% Actives	19
	0.1% Actives	17
	CMC (critical micelle concentration)	0.012%

1: Not for specification purposes.



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■ TYPICAL APPLICATIONS

CEPTOL™ FLP340 is a dilute aqueous solution composed of 22% active fluorosurfactant. Typical uses include leveling and oil repellency for floor polishes, paints and coatings, adhesives, inks, waxes, caulks, and wood stains and it is ideal for Low-VOC and VOC-free formulas. **CEPTOL™ FLP340** can minimize common surface defects in paints and coatings such as fisheyes, orange peel effects and cratering. **CEPTOL™ FLP340** is also very effective in improving anti-blocking for the new low/no VOC paints in both semi-gloss and high gloss formulas.

Applications of **CEPTOL™ FLP340** are generally those in which typical hydrocarbon surfactants are found to be inadequate.

Fluorosurfactants such as **CEPTOL™ FLP340** are much more chemically stable than typical hydrocarbon surfactants, particularly in the presence of acids, alkalies, or heat.

Recommended application rates depend on the formulation makeup but typical levels of 0.05% to 0.2% are common.

The ideal method for determining the proper level is to screen several ranges of concentrations to achieve the desired effect on the surface tension and wetting action.

■ SOLUBILITY

CEPTOL™ FLP340 is soluble in water and most organic solvents. Deionized or soft water is recommended as dilution of this product in hard water can cause precipitation and should be avoided. The use of a chelant is recommended if the water hardness exceeds 100 ppm. The chart below is an example of the solubility of S-764P in many solvent systems.

CEPTOL™ FLP340 can assist in determining solubility in any system.

Solvent	Grams of CEPTOL™ FLP340 / 100 grams of solvent
Distilled Water	>1
Isopropanol	>1
Acetone	0.1
Methyl Alcohol	>2
Hydrocarbon solvents	Insoluble

All values measured at 25° C

■ STORAGE AND SHELF LIFE

Avoid freezing. Mix well before using.

CEPTOL™ FLP340 should be stored between 5° C and 50° C.

If frozen or if solids separate, warm to room temperature and mix before use. Freezing and thawing will not affect the properties or performance.

Shelf life is at least five years if stored tightly sealed in the original container at temperatures below 50° C (122° F).



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■ AVAILABILITY

CEPTOL™ FLP340 is available in 5kg pail, 25kg pail, and 220kg drum.

■ HEALTH AND SAFETY

CEPTOL™ FLP340 does not recommend this product for use in applications involving repeated exposure to skin contact, inhalation, or ingestion.

CEPTOL™ FLP340 fluorosurfactants are based on telomer synthesis. No PFOS, no PFOA, and no derivatives that decompose to them are used in the manufacturing process.

CEPTOL™ FLP340 is composed of predominately six carbon (greater than 98%) and shorter perfluoro chains with no known pathway of decomposing to PFOS or PFOA.

Please refer to the material safety data sheet (MSDS) for recommended disposal, handling, and protection information.

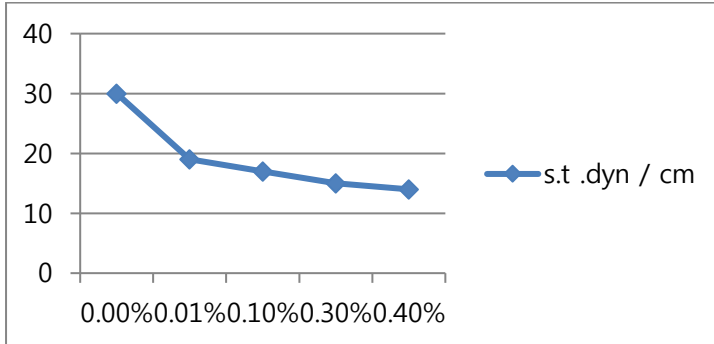
*VOC stands for "Volatile Organic Compound" and is any organic compound (all chemical compounds containing carbon with exceptions) that is volatile (evaporating or vaporizing readily under normal conditions).



TECHNICAL DATA SHEET

■ SURFACE TENSION IN DEIONIZED WATER AT 25° C

(Wilhelmy plate method)



- _ 30 dyn/cm at 0.001 % (active material)
- _ 19 dyn/cm at 0.01 %
- _ 17 dyn/cm at 0.1 %
- 15 dyn/cm at 0.3 %
- 14 dyn/cm at 0.4 %

C.M.C. : 0.012% in deionized water

■ ROSS-MILES FOAM VOLUME at 40° C (in deionized water) [ml]

	Initial	5 min
0.01% of active material	39	20
0.1% of active material	393	304

■ SURFACE TENSION IN WATER-BASED RESINS

Resin	Control	CEPTOL™ FLP340	
		0.1%	0.3%
Acryl emulsion A	39.6	20.7	19.8
Acryl emulsion B	44.0	18.1	16.5

* Wherever the term "PFOA Free" is used it means content of PFOA is less than limit of detection (20ppb).