



# HEXA FOR™ 678

## SHORT PERFLUORINATED CHAIN FLUROSURFACTANT

### DESCRIPTION

**HEXA FOR™ 678** is a water-solvent soluble, ethoxylated non-ionic fluorosurfactant (solvent free) that effectively reduces surface tension at very low concentrations. **HEXA FOR™ 678** is based on short-chain molecule containing 6 fluorinated carbon atoms, that cannot breakdown to PFOA in the environment.

**HEXA FOR™ 678** has high property in terms of dynamic surface tension, allowing the coating formulations to reach rapidly the low values of static surface tensions. It is stable in both acidic and basic conditions, making it perfect for organic polymer and water-solvent based paint and coatings. It can be used as an emulsifying agents.

### SPECIAL FEATURES

- ❖ Specifically for water-solvent based
- ❖ Good reduction of surface tension at very low concentrations
- ❖ Excellent leveling, reduced orange peel effect
- ❖ Improved wetting of most water-solvent based
- ❖ Fast lowering of surface tension
- ❖ Improve oil-idro repellency of Lineplus and Hexafor surface protection agents for porous mineral surfaces.
- ❖ Short chain (C6) technology
- ❖ Meets the goals of the voluntary U.S. EPA 2010/2015 PFOA Stewardship Program
- ❖ **HEXA FOR™ 678** is exempt from the obligation imposed by REACH regulation because it is classified as a polymer.
- ❖ Targeted below LOD for PFOA (**PFOA free\***).

### APPLICATIONS

**HEXA FOR™ 678** expresses its best properties at very low concentration (0.01 – 0.2%).

Some examples of application:

- ❖ Paint, coating and inks
- ❖ Waxes and polishes
- ❖ Graphic arts
- ❖ Emulsion Polymerization
- ❖ Floor strippers, industrial and institutional cleaning
- ❖ Adhesive

### TECHNICAL INFORMATION

APPEARANCE (40°C)	Colorless to pale yellow liquid
IONIC NATURE	Non ionic
DENSITY	1.28 g/cm <sup>3</sup>
POUR POINT	20-23°C (68-72°F)
BOILING POINT	299-301°C (570-574°F)
MOLECULAR WEIGHT	876 (indication only)
COMPOSITION	100 % Fluorosurfactant

### SPECIFICATION

Non volatile content: 93 – 100%

### SOLUBILITY

- ❖ >2% in Water, Butyl Cellosolve, Toluene, Isopropyl alcohol, Methyl Ethyl Ketone, Ethyl Acetate, DPM.
- ❖ < 2% in Isoparaffin, mineral spirit, heptane.



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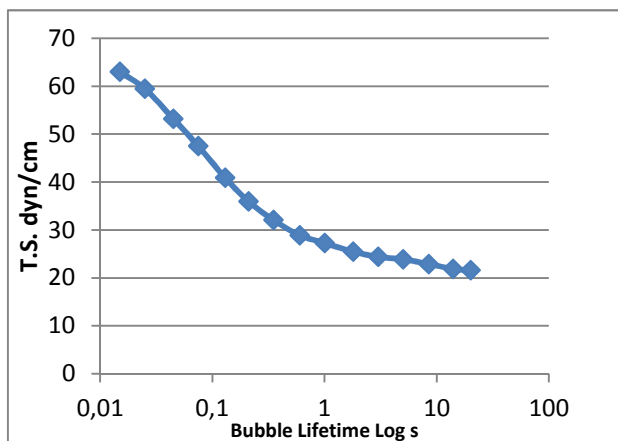
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**SURFACE TENSION IN WATER-BASED RESINS**

Resin	Control	Hexafor 678	
		0.1%	0.3%
Neorez R-9621	45.7	28.8	22.6
Joncryl 1532	39.6	31.1	24.6
Joncryl 8224	44.0	26.8	22.8
Joncryl 8330	43.2	25.8	20.9
Joncryl 8331	44.6	20.7	20.7

**DYNAMIC SURFACE TENSION**

(0.1% of active material in deionized water at 25°C)



- ❖ 36,0 dyn/cm at 0,21 sec (bubble lifetime)
- ❖ 27,3 dyn/cm at 1 sec (bubble lifetime)

**STORAGE AND STABILITY**

**HEXAFOR™ 678** is stable for two years if stored in original closed drums at temperatures of 4 – 45°C (39 – 113°F). If frozen, **HEXAFOR™ 678** can be liquefied by warming to 30-35°C (86-95°F). The efficacy of the surfactant is not impaired by freezing and thawing. However, if a freeze-thaw occurs, it is recommended that the entire contents of the container be agitated prior to use.

Chemical stability: 2 < pH < 12

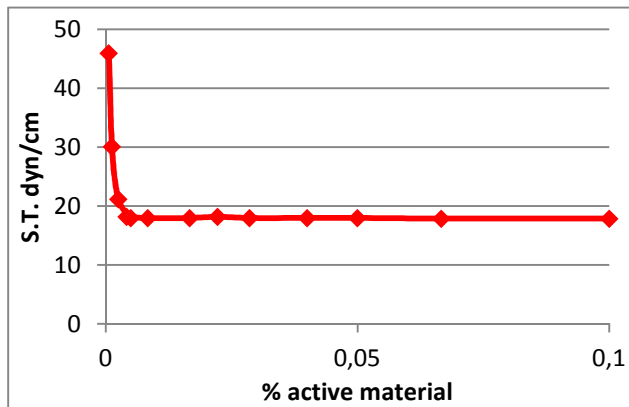
**FOAM VOLUME A 40°C (in deionized water) [ml]**

(Ross-Miles test according to ASTM D 1173)

	Initial	5 min
0.05% of active matter	206	157
0.15% of active matter	285	177
0.5% of active matter	412	363

**SURFACE TENSION IN DEIONIZED WATER AT 25°C (Wilhelmy plate method)**

- ❖ 19.8 dyn/cm at 0.01 % (active material)
- ❖ 17.8 dyn/cm at 0.05 %
- ❖ 17.6 dyn/cm at 0.1 %



C.M.C. : 0,0045% in deionized water

**PERSONAL SAFETY**

**HEXAFOR™ 678** does not contain toxic substances. Consult the current **Material Safety Data Sheet** for safety use of the product.

**PACKAGING**

- ❖ Kg 5 – Drum
- ❖ Kg 25 – Drum
- ❖ Kg 100 – Drum

\* Wherever the term "PFOA Free" is used in this website, it means content of PFOA is less than limit of detection (20ppb)



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