

DuPont™ Zonyl® FSO

FLUROSURFACTANT

Description

Zonyl® FSO is a sparingly water-soluble, ethoxylated nonionic fluorosurfactant that gives exceptional low aqueous surface tensions at concentrations as low as 0.002% (20 ppm). Zonyl® FSO is soluble to at least 2% in many organic solvents. Zonyl® FSO is a particularly effective additive to adhesives, paints, and coatings for providing external lubricity. The diffusibility of Zonyl® FSO from the bulk to the surfaces of caulks, paints, and coatings provides superior weatherability, resistance to soiling, and UV stability. Zonyl® FSO is stable in acidic, basic, and hard water environments.

Applications

Graphic Arts

Pigment compatibility in inks, improved cylinder life in print equipment, and better print definition.

Paints and Coatings

Improved antisoiling, UV resistance, compatible with most aqueous- or solvent-based paints. Improved wetting in wood and concrete coatings.

Refer to www.dupont.com/zonyl/pdf/coatings.pdf

Waxes and Polishes

Improved wetting, enhanced leveling, reduced cratering, compatible with most aqueous- or solvent-based waxes and polishes.

Polymers

Internal lubricant, reduced plasticizer migration, coupling agent for fillers, UV resistance, antisoilant.

Adhesives

Tackifier modification, improved wetting, compatible with most aqueous- or solvent-based adhesives, platinum cure, UV cure and carbamate release systems. Provides good release and peel adhesion.

Metals and Electronics

Improved etching efficiency, plating bath aid, and zinc battery scale inhibitor.

Physical Application Properties

Solubility

- >2% in isopropyl and methyl alcohol, acetone, ethyl acetate, toluene, THF
- >0.1% in water and methyl chloroform
- Insoluble in n-heptane and toluene

Specific Gravity at 25°C (77°F)

- 1.22

Density at 25°C (77°F) (lb/gal)

- 10.2

Use Levels

Zonyl® FSO is typically effective at 0.005 to 0.2% by weight in most applications. Mix product to assure it is homogeneous prior to use.

Surface Tension in Deionized Water at 25°C (77°F)

- 22 dyn/cm at 0.002%
- 19 dyn/cm at 0.02%

Foaming/Defoaming

- Effective defoamer but not effective as a foamer
- Ross Miles Foam Volume, mL at 41°C (106°F) at 0.2% product

	DI Water	300 ppm Ca
Initial	74	35
10 min	63	24



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Emulsifying (especially Halogenated Materials)

- Effective

Wetting

- Highly effective

Dispersing (especially Halogenated Materials)

- Effective

Compatibility

- Widely effective in solutions with high or low pH and high or low hard ion (polyvalent cation) concentrations.

Product Properties

Appearance

Light brown liquid. Melt completely, and mix thoroughly to ensure representative sampling.

Ionic Character

Nonionic

Molecular Weight

~725

Composition

50% fluorosurfactant, 25% ethylene glycol, and 25% water

Flash Point

Not flammable

pH

6 < pH < 8

Stability

- Stable to freezing. Not classed as hazardous or flammable by DOT
- Chemical stability: 2 < pH < 12
- Performance stability: 2 < pH < 12
- Shelf life: 5 yr

Availability

2-oz samples: 8-, 40- and 400-lb containers

Personal Safety, First Aid, and Storage and Handling

See the Material Safety Data Sheet (MSDS) for product specific information. Mix well before using.

Ordering Information—Product, Literature, or Samples

To place an order for DuPont Zonyl® FSO, call DuPont Customer Service toll free 800-441-9140. For help in selecting or evaluating these products for your application or for additional literature or a product sample, please call DuPont technical service experts at 866-828-7009. For locations outside the United States, contact the local DuPont representative in your country.

DuPont Chemical Solutions Enterprise

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www.dupont.com/zonyl

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