

## OVERVIEW

FluoSurf-O™ is a high-performance fluorinated surfactant designed and optimized to stabilize aqueous droplets in fluorinated oils (proposed by Emulseo) for chemical or biotechnological applications. FluoSurf-O™ is an inert block copolymer designed to stabilize droplets containing biological compounds. It is suitable for droplet-based microfluidic experiment such as droplet digital polymerase chain reaction (ddPCR) or single cell analysis. Thanks to its low autofluorescence, FluoSurf-O™ is particularly efficient for fluorescent dyes detection even at low concentration.

## BENEFITS



- **Stability:** FluoSurf-O™ allows the stabilization of droplets from 1 to 300µm with a high generation frequency (few to thousand droplets per second) and keeps droplets stable during heating cycles.



- **Biocompatibility:** FluoSurf-O™ is biocompatible and can be used to stabilize droplets containing biochemical compounds or biological entities.



- **Purity:** Thanks to a well-established optimized synthesis, FluoSurf-O™ is obtained with a high purity.



- **Leakage control:** Thanks to the high purity, hydrophilic and hydrophobic molecules can be efficiently contained within droplets.



- **Reproducibility:** FluoSurf-O™ production is perfectly reproducible. Each batch is tested for structure and performance following strict quality control specifications. A certificate of analysis can be delivered for each batch and is available on the website.



- **Production of large volumes:** Our capacity to produce in large quantities allows us to meet all your needs.



- **IP freedom to operate**

## PRODUCT SPECIFICATIONS

|                                      |                                                                                    |
|--------------------------------------|------------------------------------------------------------------------------------|
| • <b>Product name</b> -----          | FluoSurf-O™                                                                        |
| • <b>Solvents</b> -----              | Fluorinated oils such as Fluo-Oil 7500, Fluo-Oil 40, Fluo-oil 135 and Fluo-Oil 200 |
| • <b>Formula</b> -----               | PFPE-b-PPO-PEO-PPO-b-PFPE                                                          |
| • <b>Molecular weight</b> -----      | 7kDa<Mw<13kDa                                                                      |
| • <b>Charge</b> -----                | Neutral                                                                            |
| • <b>Interfacial tension at 4wt%</b> |                                                                                    |
| in HFE 7500 -----                    | 10 mN/m                                                                            |
| • <b>CMC in HFE 7500</b> -----       | 0.2 w/w%                                                                           |
| • <b>Hazards</b> -----               | Not classified hazardous. SDS available on the Emulseo website                     |
| • <b>Biocompatibility</b> -----      | Biocompatibility has been tested with plankton, yeast, E. Coli and mammalian cells |

## RECOMMENDATION

FluoSurf-O™ has to be diluted in a fluorinated oil (i.e. Fluo-Oil 7500, Fluo-Oil 40, Fluo-Oil 200, Fluo-Oil 135) overnight before to use.

FluoSurf-O™ can be delivered neat or diluted at the desired concentration in a fluorinated oil as a ready to use formulation.

To minimize binding interactions, Emulseo recommends performing a fluorophilic surface treatment (Fluo-ST1 or Fluo-ST2 provided by Emulseo) on the microfluidic chips before using FluoSurf-O™ diluted in fluorinated oil as the continuous phase.

At high or fluctuating temperatures (dPCR), 4w/w% concentration is recommended in order to improve droplet stability.

It is advised to collect water-in-fluorinated oil droplets into a plastic container as the hydrophilic surface of glass containers could disrupt droplet stability.

Example of a 4w/w% FluoSurf-O™ dilution in 10 mL Fluo-Oil 7500:

Fluo-Oil 7500 density = 1.61 g/mL

10 mL x 1.61 g/mL = 16.1g Fluo-Oil 7500

4w/w% FluoSurf-O™ =  $(0.04 \times 16.1) / (1 - 0.04) = 0.671\text{g}$

Weight 0.671g of FluoSurf-O™ neat and add 16.1g of Fluo-oil 7500.



## STORAGE

When diluted in a fluorinated oil, FluoSurf-O™ should be stored at room temperature protected from light for 6 months.

FluoSurf-O™ neat can be stored at room temperature for one year.

## CONTACT

If you have any queries, please do not hesitate to e-mail us at: contact@emulseo.com