

OVERVIEW

FluoSurf-S™ 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-S™ 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) and single cell analysis. FluoSurf-S™ is particularly efficient for stabilizing droplets during thermocycling even in extreme conditions.

BENEFITS



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



- **Purity:** Thanks to a well-established optimized synthesis, FluoSurf-S™ 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-S™ 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

• Product name -----	FluoSurf-S™
• Solvents -----	Fluorinated oils such as Fluo-Oil 7500, Fluo-Oil 40, Fluo-oil 135 and Fluo-Oil 200
• Formula -----	PFPE-b-PPO-PEO-PPO-b-PFPE
• Molecular weight -----	3kDa<Mw<5kDa
• Charge -----	Neutral
• Interfacial tension at 4wt%	
in HFE 7500 -----	4 mN/m
• CMC in HFE 7500 -----	0.03 w/w%
• Hazards -----	Not classified hazardous. SDS available on the Emulseo website
• Biocompatibility -----	Biocompatibility has been tested with plankton, yeast, E. Coli and mammalian cells

RECOMMENDATION

FluoSurf-S™ 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-S™ 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-S™ 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-S™ 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-S™ = $(0.04 \times 16.1) / (1 - 0.04) = 0.671\text{g}$

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



STORAGE

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

FluoSurf-S™ 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