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Product Data Sheet

FluoSurf-S™

Fluorinated Surfactant

FLUOSURF-S™ - FLUORINATED SURFACTANT

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

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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.

<u>Example of a 4w/w% FluoSurf-S™ dilution in 10 mL Fluo-Oil 7500:</u>

Fluo-Oil 7500 density = 1.61 g/mL

10 mL x 1.61 g/mL= 16.1g Fluo-Oil 7500
4w/w% FluoSurf-S™ =(0.04x16.1)/(1-0.04) = 0.671g

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