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POLYOXYETHYLENE 20 CETYL ETHER

Product Information

Product Number **P 5884**

Store at Room Temperature

Replacement for Product code 23,599-7

CAS #: 9004-95-9

Synonyms: Brij 58™; C₁₆E₂₀

Product Description

Structure: C₁₆H₃₃(OCH₂CH₂)₂₀-OH

Appearance: Waxy solid, ranging in color from white to white with a faint yellow cast.

Molecular formula: C₅₆H₁₁₄O₂₁

Molecular weight: 1122

Melting point: 38°C¹

"Brij 58" is an ICI trademark name for polyoxyethylene 20 cetyl ether, a nonionic surfactant commonly used in biochemical applications. On a hydrophilic-lipophilic scale (HLB) of 0-20, on which 20 is very hydrophilic (polar), this surfactant has a calculated HLB value of 15.7.³

The critical micelle concentration (CMC) is reported as 0.007 mM to 0.077 mM; CMC values vary with the salt concentration and temperature.⁴

For use in solubilizing proteins, etc., a typical concentration for surfactants is in the range of 0.1 to 1.0%, although researchers must determine an optimum for their application.

Preparation Instructions

Sigma tests this product for solubility in water. At 50 mg/mL a colorless solution that is clear to slightly hazy is obtained.¹ Solutions at 1% and 2% in water have remained clear at 2-8°C overnight, but the addition of salts, even small amounts, may cause precipitation of the detergent from solution.² It is reported soluble in alcohol, dispersible in cottonseed oil and insoluble in mineral oil or propylene glycol.

Solutions are reasonably stable at room temperature and should be stable under autoclaving conditions for a short time. Extended heating in the presence of oxygen is not recommended.

Storage/Stability

When stored as indicated this product has a shelf-life of three years.

References

1. Sigma quality control.
2. Supplier information.
3. Neugebauer, J.M., *Methods in Enzymology*, 182, 239-253 (1990). "Detergents: An Overview."
4. Helenius, A. and Simons, K., *Biochim. Biophys. Acta*, 415, 29-79 (1975).

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