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ProductInformation

Polyethylene glycol

Product Number **P2139**
Store at Room Temperature

Product Description

CAS Number: 25322-68-3
General formula: $H(OCH_2CH_2)_nOH$, average value of n=181.4
Average Molecular Weight: 8,000 (7,000-9,000)
Melting Point: 59 - 64 °C
Density: 1.0845 g/ml (70 °C); 1.0689 g/ml (90 °C)

Polyethylene glycol (PEG) is a condensation polymer of ethylene oxide and water. PEGs are susceptible to oxidative degradation in the presence of air. Minimizing the exposure of PEG to elevated temperatures and/or exposure to oxygen, or addition of an antioxidant can limit the amount of degradation. PEGs do not hydrolyze or deteriorate upon storage. PEGs do not support the growth of molds.

PEG has been used in many different applications. A single-step method is described for the activation of PEG for binding to polypeptides and proteins.[1] PEG has been used in the precipitation of proteins.[2]

PEG is incompatible with phenol and may reduce the antimicrobial action of other preservatives. Both penicillin and bacitracin are rapidly inactivated by PEG. PEG is also incompatible with sorbitol, tannic acid, and salicylic acid and may affect the integrity of plastics.[3]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

PEG is soluble in water (approximately 630 mg/ml, 20 °C). PEGs are also soluble in many polar solvents such as acetone, alcohols and chlorinated solvents. They are insoluble in nonpolar solvents such as hydrocarbons.

Storage/Stability

Aqueous PEG solutions are stable at room temperatures. The PEG bonds are not hydrolyzed under these conditions. PEG can be dissolved in warm water at 80-90 °C with no adverse effects. Sterile filtration of the solution is recommended using a 0.45 µm filter, initially. Although autoclaving of PEG in saline solutions has been reported,[4] it is not recommended.

References

1. Veronese, F.M., et al., Surface modification of proteins. Activation of monomethoxy-polyethylene glycols by phenylchloroformates and modification of ribonuclease and superoxide dismutase. Appl. Biochem. Biotechnol., **11**, 141-152 (1985).
2. Ingham, K.C., Precipitation of Proteins with Polyethylene Glycol. Meth. Enzymol., **182**, 301-306 (1990).
3. Martindale The Extra Pharmacopoeia, 30th ed., Reynolds, J. E. F., ed., The Pharmaceutical Press (London, England: 1993), p. 1384.
4. de St.Groth, S.F., and Scheidegger, D., Production of monoclonal antibodies: strategy and tactics. J. Immunol. Methods, **35**, 1-21 (1980).

ARO/JRC 5/06