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ProductInformation

Ammonium persulfate

Product Number **A 3678**
Store at Room Temperature

Product Description

Molecular Formula: $(NH_4)_2S_2O_8$
Molecular Weight: 228.2
CAS Number: 7727-54-0
Synonyms: ammonium peroxodisulfate, ammonium peroxydisulfate, AP, APS, PER

This product is designated as Electrophoresis grade and has been tested for suitability as a catalyst in acrylamide polymerization.

Ammonium persulfate is a widely used reagent in biochemistry and molecular biology for the preparation of polyacrylamide gels. APS forms oxygen free radicals in aqueous solution by a base-catalyzed mechanism. The bases, are most commonly used as catalysts, are tertiary amines such as N,N,N',N'-tetramethylethylenediamine (TEMED) or 3-dimethylaminopropionitrile (DMAPN). The free radicals will cause the polymerization of acrylamide and bis-acrylamide to form a gel matrix, which can be used for separating macromolecules by size. Protocols for the use of APS to prepare polyacrylamide gels for electrophoresis are widely available.[1,2] APS has also been utilized to study protein-protein interactions via photoinitiated crosslinking chemistry.[3]

Other applications of APS include its use as a reducer and retarder in photography, the manufacture of aniline dyes, electroplating, the decolorizing and deodorizing of oils.[4] A protocol on the APS-mediated modification of polypropylene membranes with polyaniline has been published.[5] APS has been used to prepare biodegradable macroporous hydrogels for application as crosslinkable biomaterials.[6]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in water (100 mg/ml), yielding a clear, colorless solution.

Storage/Stability

Fresh solutions of this product should be prepared for the most effective use in electrophoresis. Solutions stored at room temperature are not stable even if protected from light or air. Storage of solutions at 2-8 °C will allow their use for up to 12 hours.

References

1. Molecular Cloning: A Laboratory Manual, 3rd ed., Sambrook, J., and Russell, D. W., CSHL Press (Cold Spring Harbor, NY: 2001), pp. 5.41-5.43, 7.58, 12.75, 12.78, 12.82, 13.53-13.54, A1.25, A8.42.
2. Crow, M. K., et al., Protein aggregation mediated by cysteine oxidation during the stacking phase of discontinuous buffer SDS-PAGE. Biotechniques, **30(2)**, 311-316 (2001).
3. Fancy, D. A., et al., Scope, limitations and mechanistic aspects of the photo-induced cross-linking of proteins by water-soluble metal complexes. Chem. Biol., **7(9)**, 697-708 (2000).
4. The Merck Index, 12th ed., Entry# 575.
5. Piletsky, S., et al., Surface functionalization of porous polypropylene membranes with polyaniline for protein immobilization. Biotechnol. Bioeng., **82(1)**, 86-92 (2003).
6. Behravesh, E., et al., Synthesis of *in situ* cross-linkable macroporous biodegradable poly(propylene fumarate-co-ethylene glycol) hydrogels. Biomacromolecules, **3(2)**, 374-381 (2002).

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