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ProductInformation

Sodium phosphate monobasic monohydrate
ACS Reagent

Product Number **S 9638**
Store at Room Temperature
Exact replacement for Product Code 22,352-2

Product Description

Molecular Formula: $NaH_2PO_4 \bullet H_2O$
Molecular Weight: 138.0
CAS Number: 10049-21-5

This product is designated as ACS Reagent grade, and meets the specifications of the American Chemical Society (ACS) for reagent chemicals.

Sodium phosphate is a reagent with very high buffering capacity that is widely used in molecular biology, biochemistry, and chromatography. Sodium phosphate occurs in several forms: monobasic (NaH_2PO_4), dibasic (Na_2HPO_4), and tribasic (Na_3PO_4). Most neutral sodium phosphate buffer solutions consist of mixtures of the monobasic and dibasic forms to varying degrees, depending on the desired pH. A table for preparation of 0.1 M sodium phosphate buffer at 25 °C using various proportions of sodium phosphate monobasic and sodium phosphate dibasic has been published.[1]

Some limitations of the usefulness of phosphate buffers include their precipitation of Ca^{2+} and Mg^{2+}, their inhibition of restriction enzyme activity, and their interference in protocols related to DNA ligation and bacterial transformation.[1] A study of the effect of freeze-thaw storage cycles on proteins in sodium phosphate and potassium phosphate buffer solutions has been reported.[2] The effect of 5 mM sodium phosphate on the efficacy of electrospray ionization (ESI) ion mobility spectrometry (IMS) analysis has been evaluated.[3]

A protocol for the purification of pyrogen-free mouse IgG1 monoclonal antibodies which uses 10 mM sodium phosphate (pH 7.4) has been published.[4] An ion-pairing HPLC method for the analysis of 5-aminosalicylic acid has been reported.[5] A TLC method for separation of nucleotide sugars in the study of glycosyltransferase activity has been published.[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.

References

1. Molecular Cloning: A Laboratory Manual, 3rd ed., Sambrook, J. F., et al., Cold Spring Harbor Laboratory Press (Cold Spring Harbor, NY: 2001), p.A1.5.
2. Pikal-Cleland, K.A., et al., Protein denaturation during freezing and thawing in phosphate buffer systems: monomeric and tetrameric beta-galactosidase. Arch. Biochem. Biophys., **384(2)**, 398-406 (2000).
3. Matz, L.M., et al., Evaluation of capillary liquid chromatography-electrospray ionization ion mobility spectrometry with mass spectrometry detection. J. Chromatogr. A., **946(1-2)**, 59-68 (2002).
4. Neidhardt, E.A., Rapid, two-step purification process for the preparation of pyrogen-free murine immunoglobulin G1 monoclonal antibodies. J. Chromatogr., **590(2)**, 255-261 (1992).
5. Kersten, B.S., et al., Ion-pairing high-performance liquid chromatographic method for the determination of 5-aminosalicylic acid and related impurities in bulk chemical. J. Chromatogr., **588(1-2)**, 187-193 (1991).
6. Ram, P.A., et al., Thin-layer chromatographic method for the determination of glycosyltransferase activity. Anal. Biochem., **178(2)**, 421-426 (1989).
7. The Merck Index, 12th ed., Entry# 8806.

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