SIGMA-ALDRICH

3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Potassium phosphate tribasic

Product Number **P 5629**
Store at Room Temperature
Replacement for Product Code 34,076-6

Product Description

Molecular Formula: K_3PO_4
Molecular Weight: 212.3
CAS Number: 7778-53-2
Synonym: tripotassium phosphate

Potassium phosphate is a reagent with very high buffering capacity that is widely used in molecular biology, biochemistry, and chromatography. Potassium phosphate occurs in several forms: monobasic (KH_2PO_4), dibasic (K_2HPO_4), and tribasic (K_3PO_4). Most neutral potassium 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 potassium phosphate buffer at 25 °C using various proportions of potassium phosphate monobasic and potassium phosphate dibasic has been published.[1,2]

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 potassium phosphate and sodium phosphate buffer solutions has been reported.[3]

The use of high concentrations of potassium phosphate in the immobilization of affinity ligands onto epoxide-activated stationary phases has been reviewed.[4] A two-phase system of aqueous potassium phosphate and poly(ethylene glycol) for the isolation of *E. coli* β-galactosidase and β-galactosidase fusion proteins has been published.[5] The quantitation of nonionic surfactants in buffered solutions using strong cation and anion exchange HPLC guard columns and potassium phosphate solution has been investigated.[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. Green, A. A., and Hughes, W. L., Protein Fractionation on the Basis of Solubility in Aqueous Solutions of Salts and Organic Solvents. Meth. Enzymol., **1**, 67-90 (1955).
3. 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).
4. Wheatley, J. B., and Schmidt, D. E. Jr., Salt-induced immobilization of affinity ligands onto epoxide-activated supports. J. Chromatogr. A., **849(1)**, 1-12 (1999).
5. Enfors, S. O., et al., Combined use of extraction and genetic engineering for protein purification: recovery of beta-galactosidase fused proteins. Bioseparation, **1(3-4)**, 305-310 (1990).
6. Pardue, K., and Williams, D., Quantitative determination of non-ionic surfactants in protein samples, using ion-exchange guard columns. Biotechniques, **14(4)**, 580-583 (1993).

GCY/RXR 6/03