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Product Information

Sephadex® G-25

Product Number **G 2580**

Exact replacement for Product Code 84942 and 2,7107-1

Product Description

Sephadex is a beaded gel filtration medium prepared by cross-linking dextran with epichlorohydrin under alkaline conditions.¹ General information and procedures for using gel filtration to separate proteins or to desalt protein solutions have been described.^{2,3}

This product can also be used for the separation of double-stranded DNA fragments. The exclusion limits for double-stranded DNA are as follows: G-25, 10 base pairs; G-50, 20 base pairs; and G-100, 25 base pairs. DNA grade Sephadex is available as part of our molecular biology product line. [Product numbers S 5772 (G-25 Superfine), S 5897 (G-50 Fine), S 6022 (G-50 Medium) and S 6147 (G-100)].

Precautions and Disclaimer

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

Preparation Instructions

This product should be placed in the usage buffer and allowed to swell for at least 3 hours at 20 °C or 1 hour at 90 °C. Once separation of the sample is complete, the gel should be washed with 2 column volumes of 0.2 M NaOH or a solution of non-ionic detergent, rinsed with water, and re-equilibrated with 2-3 column volumes of buffer. For storage, antimicrobial agents should be added to the suspension to prevent contamination (0.001% phenyl mercuric salts, 0.005% thimerosal, 0.05% chlorobutanol, 0.002% chlorhexine, 0.02% sodium azide, or 20% ethanol are acceptable). When necessary, the gel can be removed from the column and sterilized by autoclaving.

Storage/Stability

Sephadex does not melt and may be sterilized in the wet form at neutral pH by autoclaving for 30 minutes at 120 °C. This will not affect its chromatographic properties. If dry Sephadex is heated to more than 120 °C, it will start to caramelize.

Sephadex is stable in water, salt solutions, and organic and denaturing solvents. The pH stability is limited to low ionic strengths and short times when at the pH extremes of 2 and 13, particularly in the acid range. At low pH, partial hydrolysis of the matrix may occur. However, G-25 has been shown to withstand 0.1 M HCl for 1-2 hours and 0.02 M HCl for 6 months without any affect on its chromatographic properties.

The Sephadex resins are chemically resistant to 8 M urea. However, since the solutions would be very viscous, the flow rate would be much reduced in the presence of this urea concentration and would lead to high back pressure. The beads are not able to withstand increased pressure to get a reasonable flow rate. Sephacryl resins should be used in this case. Sephacryl is more rigid and can withstand higher pressures. The Sephacryl resin is also resistant to 8 M urea.

References

1. Porath, J., and Flodin, P., Gel filtration: a method for desalting and group separation. *Nature* **183**, 1657-1659, 1959.
2. Stellwagen, E., Gel Filtration. *Meth. Enzymol.*, **182**, 317-328 (1990).
3. Short Protocols in Molecular Biology, 2nd Ed., Ausubel, F.M., et al., Eds., John Wiley & Sons (New York, NY: 1992), p. 10-36 to 10-39.

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