CHELATING RESIN
Sigma Prod. No. C7901
Chelex 100

PHYSICAL PROPERTIES:

Appearance: White moist powder (swollen beads)
Analytical grade resin
Capacity of Sodium Form: 0.7 meq/ml

STRUCTURE:

A styrene-divinylbenzene copolymer containing paired iminodiacetate ions which act as chelating groups in binding polyvalent metal ions. It is considered a weakly acidic resin.

USAGE:

Product is autoclavable in sodium form. It has a maximum operating temperature of 75°C and is not soluble in water.

Binding is a function of pH. Absorption is very low below pH 2 and increases sharply from pH 2 to 4. It reaches a maximum above pH 4. Optimum binding for many divalent cations is at pH 6.5 or higher. Its selectivity for divalent over monovalent ions is approximately 5000 to 1, and it has a very strong attraction for transition metals, even in highly concentrated salt solutions. Actual selectivity values for any particular system depend on the pH, ionic strength, and presence of other complex-forming species. Metals can be removed using either the batch or column technique, although the column technique is more efficient. With 50-100 mesh, rapid flow rates are obtained and large volumes of solution can be processed in very little time.

Resin can be regenerated by washing in the following sequence: 2 bed volumes of 1 N HCl, 5 bed volumes water, 2 bed volumes of 1 N NaOH, 5 bed volumes water.

APPLICATIONS:

Removal of metals from enzyme solutions
Removal of metals from cell suspensions
Calcium removal from dinucleotides
Calcium removal from calmodulin and buffer
Removal of calcium from erythrocyte lysates
Reducing calcium and magnesium concentrations in tissue culture medium
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APPLICATIONS: (continued)

Effect of pH and ionic strength on chelating properties
Stability of metal complexes
Trace metal studies
As a medium for extraction of DNA from forensic-type samples
Removal of metal ion from guinea pig complement

REFERENCES:


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