



Product Information

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.¹ 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 solutions²
Removal of metals from cell suspensions³
Calcium removal from dinucleotides⁴
Calcium removal from calmodulin and buffer⁵
Removal of calcium from erythrocyte lysates⁶
Reducing calcium and magnesium concentrations in tissue culture medium⁷

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APPLICATIONS: (continued)

Effect of pH and ionic strength on chelating properties⁸
Stability of metal complexes⁹
Trace metal studies¹
As a medium for extraction of DNA from forensic-type samples¹⁰
Removal of metal ion from guinea pig complement¹¹

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