MERCK MILLIPORE

Technical Information Technische Information

1.16881 / 1.16887 Fractogel® EMD TMAE (M), (S)

Ion exchange chromatography using strong anion exchangers

Fractogel[®] EMD ion exchangers are cross-linked polymethacrylate resins with pore sizes of about 800 Å modified according to the tentacle technology. The beads have a high mechanical and chemical stability. Since the functional ion exchanger groups are bonded via linear polymer chains, the ionic groups are very well accessible for proteins.

Fractogel[®] EMD TMAE is a chromatographic support for the purification of acidic and neutral proteins and peptides, immunoglobulines, and for DNA removal.

Due to the titration behaviour the ion exchange capacity can be used from pH 2 up to pH 12. The separation of proteins is based on reversible electrostatic interactions between the negatively charged regions of the proteins surface and the support. Proteins are retained efficiently on Fractogel® EMD TMAE when the pH of the buffer is about 1 unit above their isoelectric points (pl).

The strength of the binding depends on:

- the buffer system
- pH value of the buffer which determines the surface charge of the protein
- the concentration of the counter ions
- the charge density on the support (protein binding capacity)

Properties of the tentacle ion exchanger

Cat. No. 1.16881 (M-type) 1.16887 (S-type)

Bulk material 100 ml, 500 ml, 5 l

Particle size $40 - 90 \mu m (M)$ $20 - 40 \mu m (S)$

Type of chromatography strong anion exchange chromatography

Functional group trimethylammoniumethyl group (TMAE); "Q-type"

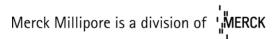
Protein binding capacity 100 mg BSA/ml of gel

pK value > 13

pH stability range pH 2 up to pH 12

Elution conditions high salt concentrations

Pressure limit 8 bar





Operating temperature

Storage, preservative

Regeneration

Sanitization

Linear flow rate

4°C to room temperature

20 % ethanol, 150 mmol/l NaCl

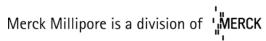
1 - 2 M NaCl

0.1 – 0.5 M NaOH, sodium lauroyl sarcosinate

up to 240 cm/h in process columns corresponding to approximately 1.5 bar for M-

type

up to 80 cm/h in process columns corresponding to approximately 1.5 bar for S-type (for 20 cm bed height, 25 % compression, eluents with a viscosity as water)



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