GeloPure CM

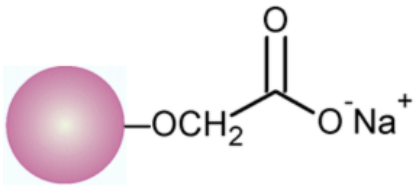
Ion Exchange Chromatography Media

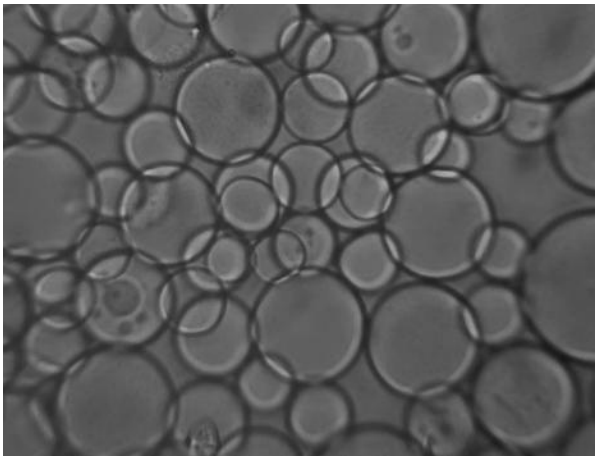
Technical Datasheet

2464 Norwood street SW,
Lenoir, North Carolina – 28645.USA

GeloPure CM

GeloPure CM is a weak cation exchanger chromatography media based on spherical particles manufactured from cross-linked agarose. Each offers excellent flow properties and chemical resistance. In this ion exchange resin, the Carboxymethyl (CM) functional group is attached to the agarose spherical beads, which remains charged and maintains consistently high capacity over the entire working range, pH 2 to 11. These ion exchangers are ideally suited for both laboratory and process scale chromatography of proteins, peptides, and other biomolecules.





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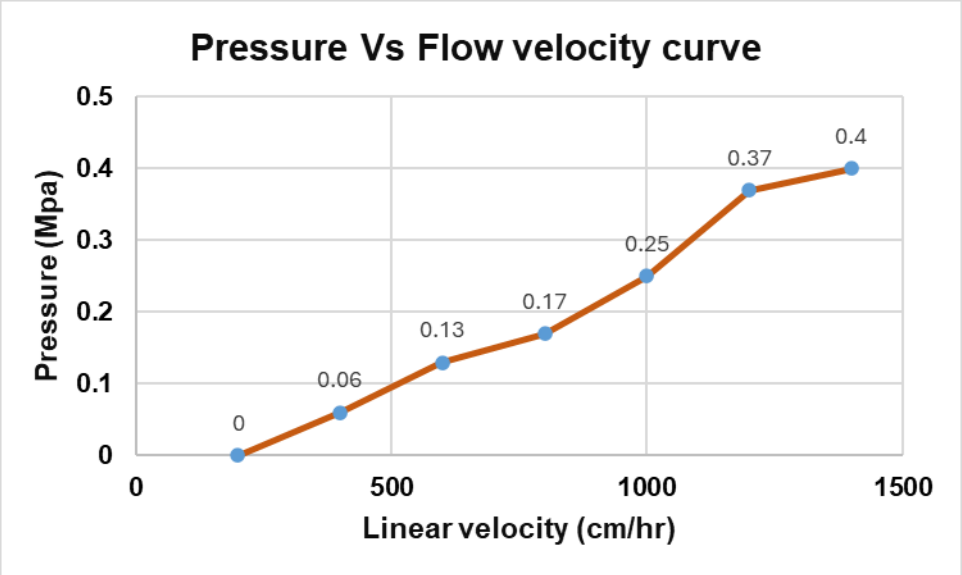
GeloPure CM base resin

Cross-linked spherical agarose beads are prepared by unique process from natural polysaccharides. Primarily composed of agarobiose repeating units (alternating D-galactose and 3,6-anhydro-L-galactose), finally beads are highly hydrophilic, minimize the non-specific binding. GeloPure CM, made from cross-linked agarose beads, benefits from this structure by offering efficient flow velocity for large biomolecules. This helps improve performance when purifying large proteins and other biological substances**.**

Pressure-flow and Characteristics of GeloPure CM



GeloPure CM is made from strong, cross-linked spherical agarose with excellent flow characteristics and high binding capacity. It allows flow rates of 300 to 500 cm/h through a 15 cm column at 1 bar (14.5 psi, 0.1 MPa), enabling quick separation steps—especially useful in the early stages of purification when fast processing is important. During washing and equilibration, the flow rate can be increased up to 1000 cm/h for even faster operation**.** The basic characteristics of GeloPure CM weak cation exchange chromatography media are shown in Table.

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Characteristics		
Ion Exchange Type (Functional Group)		Carboxymethyl group
Base Matrix		Spherical, Cross-linked agarose Beads 4%
Particle Size (µm)		30 µm to 165 µm
pH Working Range		2 to 11
Operating Pressure		300 to 500 cm/h at < 0.1 MPa in a HiScale 50/20 column with 5 cm diameter and 15 cm bed height (at 25°C using buffers with the same viscosity as water)
Ion Exchange Capacity (meq / ml-gel)		0.09-0.14
Dynamic Binding Capacity (mg/ml)	HSA	NA
	Human IgG	46
	Lysozyme	80
Supplied		Suspension in 20% Ethanol

Table 1. Basic characteristics of GeloPure CM weak cation exchange chromatography media

Dynamic Binding Capacities of GeloPure CM

GeloPure CM have high efficiency in mass transfer and excellent Dynamic Binding Capacities, particularly for large biomolecules like Immunoglobulins (IgG) and Lysozyme.

Because of these special qualities, GeloPure CM media can be used in downstream processes in the purification of biopharmaceuticals. With good reliability, protein separation has been scaled up using GeloPure CM from laboratory size and no discernible variations were seen in the purity of single peak at the time of protein separation.

Column: HiScale 16/20, 5 cm bed height, 10 ml bed volume

Flow rate: 1ml/min

Sample: 7mg/ml

Start Buffer: 0.25M Sodium Acetate (pH 5.6) for IgG

10mM Acetate buffer (pH 3.7) for HNA

50mM Tris-HCL + 150 mM Nacl (pH 9.5) for Lysozyme

Elution Buffer: 0.25M Sodium Acetate + 0.5M Nacl (pH 5.6) for IgG

10mM Acetate + 1M Nacl (pH 5.5) for HNA

50mM Tris-HCL + 1M Nacl (pH 9.5) for Lysozyme

Chemical Stability and Cleaning-In-Place

GeloPure CM, a cross-linked spherical Agarose beads, offer strong chemical and physical stability, enabling effective clean-in-place (CIP) and sanitization protocols. This ensures high protein recovery over multiple cycles, prevents microbial growth, and supports hygienic, cost-effective purification which is the key considerations for preparative applications.

Cleaning-In-Place of GeloPure CM done with 0.5N NaOH. The majority of contaminated material should be removed from CIP with routine washing with 5 CV of 0.25N to 0.5N sodium hydroxide; however, extremely hydrophobic molecules may bind so firmly that they must be eluted using powerful detergents or organic solvents, such as 70% ethanol or 30% isopropyl alcohol.

After use of chromatographic media, it should be stored in 20% ethanol at room temperature.