

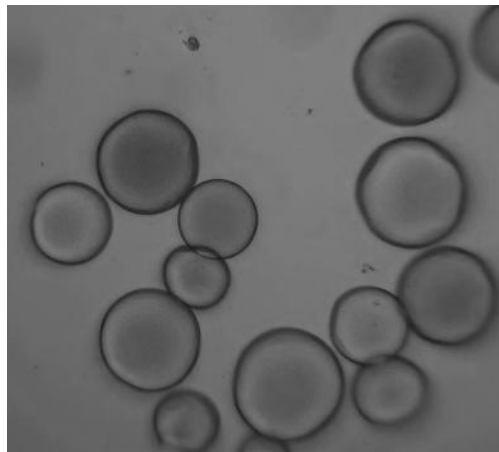
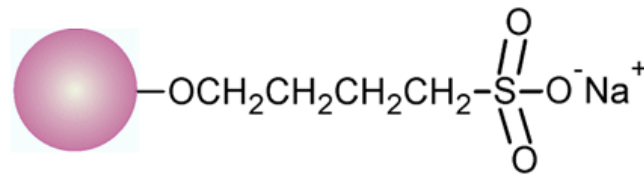
GeloPure SP

Ion Exchange Chromatography Media

Technical Datasheet

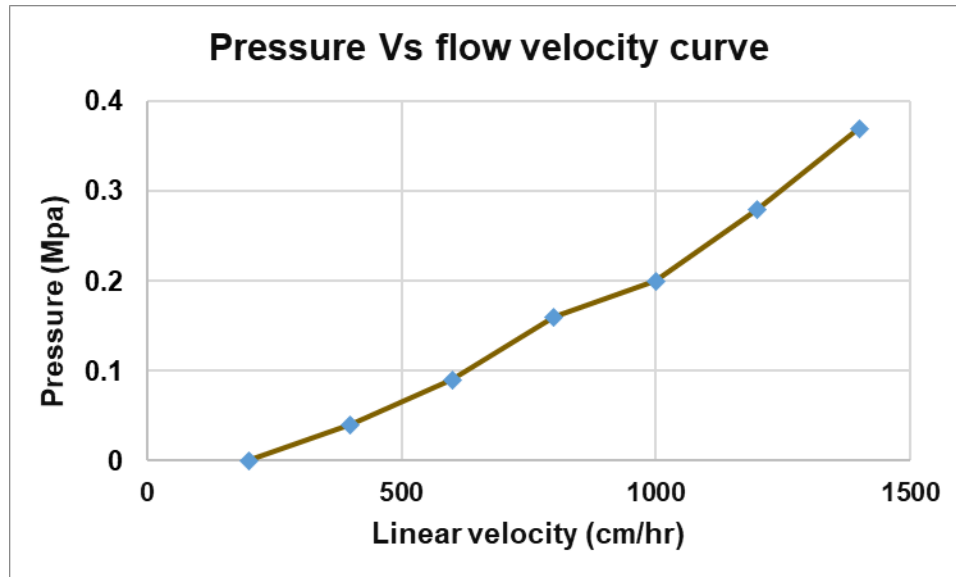
GeloPure SP

GeloPure SP is a strong cation exchange chromatography media based on spherical particles manufactured from crosslinked Agarose. Each offers excellent flow properties, mechanical stability, and chemical resistance. In this ion exchange resin, the sulphopropyl (SP) functional group is attached to the cross-linked agarose beads, which remains charged and maintains consistently high capacity over the entire working range, pH 3 to 11. These ion exchangers are ideally suited for both laboratory and process scale chromatography of proteins, peptides, and other biomolecules.



GeloPure SP base resin

Cross-linked spherical agarose 4% 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 SP, 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 SP

GeloPure SP is made from strong, cross-linked spherical agarose 4% with excellent flow characteristics and high binding capacity. It allows flow rates of 400 to 700 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 750 cm/h for even faster operation. The basic characteristics of GeloPure SP strong cation exchange chromatography media are shown in Table.

Ion Exchange Type		Strong Cation Exchange
Functional Group		Sulphopropyl group (CH ₂ CH ₂ CH ₂ SO ₃ ⁻)
Base Matrix		Cross-linked agarose 4%
pH working range		2-12
Particle Size (µm)		30 µm to 165 µm
Operating Pressure		Up to 2 Bar (0.2 Mpa)
Ion Exchange Capacity (meq / ml-gel)		0.11-0.20
Dynamic Binding Capacity (mg/ml)	Human IgG	≥50
	Lysozyme	>90
Supplied		Suspension in 20% Ethanol

Table. Basic characteristics of GeloPure SP strong cation exchange chromatography media

Dynamic Binding Capacities of GeloPure SP

GeloPure SP has high efficiency in mass transfer and excellent Dynamic Binding Capacities, particularly for large biomolecules like human Immunoglobulins (IgG) also Lysozyme.

Because of these special qualities, GeloPure SP media can be used in downstream processes in the purification of biopharmaceuticals. With good reliability, protein separation has been scaled up using GeloPure SP 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

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

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

Chemical Stability and Cleaning-In-Place

GeloPure SP, a cross-linked spherical agarose 4% 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 SP done with 0.5N NaOH. Most of the 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.