



Bio-Beads™ Resins

Family Members

- Bio-Beads SM-2 Resin
- Bio-Beads S-X Resin

At a Glance

Bio-Beads Resins are microporous polymers of styrene or polystyrene divinylbenzene. They can be stored at ambient temperatures and are stable for at least 5 years when stored as recommended. They are available in numerous sizes to aid laboratory- to manufacture-scale purifications.

Bio-Beads SM-2 Resin

Features

- Nonpolar polystyrene adsorbent composed of analytical-grade, neutral, macroporous polymeric beads
- Chromatography type: hydrophobic interaction chromatography (HIC)
- High surface area for adsorbing organics with MW <2,000 from aqueous solutions
- Used in aqueous solution and with solvents including alcohols, petroleum ether, diethyl ether, and hexane, or with solvent mixtures, all without expansion or contraction of the beads

Applications

- Removal of detergents such as Triton X-100
- Removal of organics such as polyaromatic hydrocarbons from water
- Cleanup of drugs from plasma and urine
- Cleanup of biological metabolites and pesticides
- Extraction of dyes and mycotoxins from food products
- Absorption of nonpolar substances
- Quantitative removal of surfactants from aqueous feedstreams

Bio-Beads SM-2 Technical Specifications

Property	Description
Pore diameter (dry bead)	90 Å
Capacity	0.07 g Triton X-100/g
Wet density	1.02 g/cc
Recommended linear flow rate based on application	Batch mode or column method not exceeding 82 bar
Pressure limitations	82 bar (1,200 psi)
Temperature limit	250°C

Bio-Beads S-X Resin

Features

- Series of porous crosslinked polystyrene polymers
- Chromatography type: size exclusion chromatography (SEC)
- Available in 1, 3, 8, and 12% crosslinked formats with exclusion limits from 400 to 14,000 daltons
- Pore dimensions and exclusion limits are influenced by the eluent employed
- Typically used with benzene, toluene, xylene, carbon tetrachloride, and mixtures of solvents
- Separations using Bio-Beads S-X Resin require an eluent that is mobile; therefore, the beads must be used in a column

Bio-Beads S-X Technical Specifications

Property	Description
Mesh size/exclusion limit	1% crosslinkage: 200–400/600–14,000 MW 3% crosslinkage: 200–400/up to 2,000 MW 8% crosslinkage: 200–400/up to 1,000 MW 12% crosslinkage: 200–400/up to 400 MW
Swollen bed volume	1% crosslinkage: 7.5 ml/g benzene 3% crosslinkage: 4.75 ml/g benzene 8% crosslinkage: 3.1 ml/g benzene 12% crosslinkage: 2.5 ml/g benzene
Nominal density	2% crosslinkage: 0.65 g/ml 4% crosslinkage: 0.7 g/ml 8% crosslinkage: 0.75 g/ml
Recommended linear flow rate based on application	1% crosslinked resins: gravity flow 3% crosslinked resins: 5 ml/min at 20 bar (300 psi) 8–12% crosslinked resins: 33 bar limit (500 psi)

Applications

- Particularly suitable for the fractionation and separation of low molecular weight organic polymers and other hydrophobic substances
- Quantification of pesticides and rodenticides
- Measurement of organic priority pollutants in sludge
- Separation of polycyclic aromatic compounds
- Assessment of tissue reaction to biomaterial
- Fractionation of halogenated environmental contaminants
- Separation of tall oil components, lipids, alkalines, 21 fatty acids, hydrocarbons, and polystyrenes

Additional Information

- Usage of Bio-Beads SM-2 Resins, [bulletin LIT195](#)
- Usage of Bio-Beads S-X Resins, [bulletin LIT263](#)

Large bulk volumes and special packaging for industrial applications are available on request.

For technical/product support or to request a quote, email your regional Bio-Rad representative or contact customer service at 1-800-4-BIORAD (1-800-424-6723).

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