

WorkBeads™40 Q

WorkBeads™40 S



Ion Exchange Media for Preparative and Bioprocess Scale Purification of Proteins

- Made from agarose, well established and well-known in the biotech industry
- High throughput and resolution
- Reliable and reproducible
- High chemical stability for easy cleaning in place
- Easy and reliable scale up

Media Description

WorkBeads 40 Q and WorkBeads 40 S ion exchange media are produced from agarose using a proprietary cross linking method that results in a highly porous and physically stable agarose matrix. Agarose based matrices have been successfully used for decades in biotechnology research and in the industrial purification of proteins. Agarose is proven to be exceptionally compatible with natural bio molecules like proteins, DNA, carbohydrates etc. The material shows minimal non specific interaction due to the hydrophilic nature of agarose. Unlike matrices made from synthetic polymers, agarose does not have micro pores that can contribute to local pH variations in the micro-environment in the column which lead to distorted separations.

WorkBeads 40 Q and WorkBeads 40 S have a high selectivity which means the protein peaks are well separated with greater distance from each other than comparable products made from synthetic polymers. This means that the media has capacity to separate proteins well even when using high proteins loadings.

Resolution is the combined effect of selectivity (distance between peaks) and efficiency (peak width, depending on particle size). Separation media based on agarose are well known for excellent selectivity. The particle size of 40 micrometer with an very narrow particle size distribution in combination with the proprietary cross linking results in columns packed with very high efficiency and excellent flow characteristics well suited to demanding bioprocess applications.

Applications

WorkBeads 40 Q and WorkBeads 40 S ion exchange media are designed for high throughput protein separations under a variety of conditions. The high resolution that can be obtained at high protein loadings and high flow rates makes it ideal for process applications. The chemical stability means it is easy to develop cleaning in place (CIP) protocols using sodium hydroxide.

Separation Media Characteristics

	WorkBeads™40 Q	WorkBeads™40 S
Agarose Content	7.4 - 7.8	7.4 - 7.8
Protein Capacity	Test Protein BSA, 130 mg/mL	Test Protein IgG, 70 mg/mL
Ionic Group	Quaternary Amine	Sulphonic Acid
Ionic Capacity (mmol/ml)	0.18-0.26	0.18-0.26
max Flow Rate at 20 cm Bed Height and 5 Bar (cm/hr)	> 500	> 500
Particle Size (µm)	32 - 60	32 - 60
pH Stability	pH 1-14	pH 1-14
Solvent Stability	100% methanol, 100% ethanol, 8 M urea, 6 M guanidine hydrochloride, 30% acetonitrile, 70% formic acid, 30% trifluoroacetic acid	

Column Sizes

WorkBeads 40 Q and WorkBeads 40 S ion-exchange agarose media comes pre-packed in columns suitable for process development work with the following dimensions:

Media Volume (ml)	Internal Diameter (mm)	Bed Height (mm)
4.3	8	85

The columns are preserved with 22% ethanol

Column Specifications (4.3 ml Columns)

Maximum Operating Flow Rate	10 ml/min (1200 cm/h)
Optimal Operating Flow Rate	0.5 - 5.0 ml/min
Operating Temperature	4 - 40 °C
pH Stability	1-14
Cleaning	Columns can be sanitized with 0.5 M NaOH or 70% ethanol.
Materials in Contact with Eluent	Borosilicate glass (chromatographic tube), titanium (filter), PEEK (polyetheretherketone) (tubing), EPDM (O-ring), PVDF (polyvinylidene fluoride) (adaptor).
Solvent Resistance	Methanol, ethanol, 8 M urea, 6 M guanidinium hydrochloride, 30% acetonitrile, 70% formic acid, 1 M sodium hydroxide, 0.1 M hydrochloric acid, 5% sodium dodecyl sulphate, 5% 2-mercaptoethanol, 30% acetic acid, 0.1% trifluoroacetic acid.
Mesh Size of the Net	10 microns

ORDERING

Product Name	Column Size / Volume	Article Number
WorkBeads 40 Q	Pre-Packed Column - 4.3 ml	40 100 102
WorkBeads 40 Q	Bulk Media - 25 ml	40 100 001
WorkBeads 40 Q	Bulk Media - 200 ml	40 100 002
WorkBeads 40 Q	Bulk Media – 1 Litre	40 100 010
WorkBeads 40 Q	Bulk Media – 5 Litre	40 100 050
WorkBeads 40 S	Pre-Packed Column - 4.3 ml	40 200 102
WorkBeads 40 S	Bulk Media - 25 ml	40 200 001
WorkBeads 40 S	Bulk Media - 200 ml	40 200 002
WorkBeads 40 S	Bulk Media – 1 Litre	40 200 010
WorkBeads 40 S	Bulk Media – 5 Litre	40 200 050

To purchase Bio-Works separation media contact your local distributor. You may also email, fax or phone Bio-Works directly at:

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