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## PRODUCT SPECIFICATION SHEET

**Product Name:** Toyopearl® HW-40 (Size exclusion chromatography resin)

**Part Numbers:**

19809	Toyopearl HW-40S, 30 µm, 150 mL
07451	Toyopearl HW-40S, 30 µm, 250 mL
07447	Toyopearl HW-40S, 30 µm, 500 mL
14681	Toyopearl HW-40S, 30 µm, 1 L
07967	Toyopearl HW-40S, 30 µm, 5 L
19808	Toyopearl HW-40F, 45 µm, 150 mL
07448	Toyopearl HW-40F, 45 µm, 500 mL
14682	Toyopearl HW-40F, 45 µm, 1 L
07968	Toyopearl HW-40F, 45 µm, 5 L
19807	Toyopearl HW-40C, 75 µm, 150 mL
07449	Toyopearl HW-40C, 75 µm, 500 mL
14683	Toyopearl HW-40C, 75 µm, 1 L
07969	Toyopearl HW-40C, 75 µm, 5 L
07450	Toyopearl HW-40EC, 200 µm, 500 mL

**Product Description:** Toyopearl is a methacrylic polymer incorporating high mechanical and chemical stability. Resins are available as non-functionalised “HW” series resins for size exclusion separations, and derivatised with surface chemistries for alternative modes of chromatography such as ion exchange, hydrophobic interaction or affinity separations.

Toyopearl® HW-40 chromatographic resin is designed for aqueous size exclusion chromatography (also known as gel filtration chromatography). This chromatographic mode separates molecules on the basis of molecular hydrodynamic radius. These resins possess controlled pore distribution such that molecules with dynamic radii smaller than the pores diffuse throughout the accessible volume of the bead and are thus separated from larger molecules that are excluded from smaller pores. The separation is normally accomplished in aqueous solution of moderate ionic strength (100 – 300mM) to reduce interaction with residual negative charges on the matrix.

**Formulation:** Particulate resin (spherical), available in particle sizes (mean diameter):  
 30 µm = “S” grade  
 45 µm = “F” grade  
 75 µm = “C” grade  
 Supplied as slurry in 20 % ethanol (v/v).

**Physicochemical Specifications:**

▪ Appearance	White resin slurry which settles upon standing
▪ Particle Size Distribution (>80 % within range)	20 – 40 µm for HW-40S 30 – 60 µm for HW-40F 50 – 100 µm for HW-40C
▪ Exclusion Limit	1 x10 <sup>4</sup> Dalton (globular protein)
▪ Mean Pore Diameter	50 Å
▪ Pressure drop across the column	max. 7 bar (recommended)
▪ Operating Linear Flowrate	normally 10 – 600 cm/hour (depending on particle size)
▪ Bacterial Count	≤ 100 CFU/mL
▪ Endotoxin Concentration	≤ 10.0 endotoxin units/mL

▪ Pack sizes and type	120 mL, 250 mL, 500 mL, 1 L, 5 L Packed in virgin Polyethylene container with Polypropylene cap.
▪ Resin Volume per Container	The indicated volume is the settled resin volume.
▪ Shipping Solvent	72 % (v/v) slurry in 20 % (v/v) ethanol
▪ Long Term Storage Conditions	20 % (v/v) ethanol
▪ Cleaning in Place / Sanitization	0.5 M NaOH or 0.1 M HCl
▪ Foreign Substance	not observed, no visual evidence
▪ Eluable Matter	< 0.1 %
▪ Shelf Life Stability	Minimum 5 years

**For detailed test procedures please refer to Regulatory Support File BB-MF-3907.**