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## PRODUCT SPECIFICATION SHEET

**Product Name:** Toyopearl® CM-650 (weak cation exchange resin)



<b>Part Numbers:</b>	19803	Toyopearl CM-650S, 35 µm, 25 mL
	07474	Toyopearl CM-650S, 35 µm, 250 mL
	14695	Toyopearl CM-650S, 35 µm, 1 L
	07971	Toyopearl CM-650S, 35 µm, 5 L
	43203	Toyopearl CM-650M, 65 µm, 100 mL
	07475	Toyopearl CM-650M, 65 µm, 250 mL
	14696	Toyopearl CM-650M, 65 µm, 1 L
	07972	Toyopearl CM-650M, 65 µm, 5 L
	07991	Toyopearl CM-650C, 100 µm, 250 mL
	14697	Toyopearl CM-650C, 100 µm, 1 L
	07992	Toyopearl CM-650C, 100 µm, 5 L
	21366	ToyoScreen CM-650M, 1 mL x 6 ea.
	21367	ToyoScreen CM-650M, 5 mL x 6 ea.
	21394	ToyoScreen IEC Cation Mix Pack, 1 mL x 3 grades x 2 ea. (CM, SP-650, SP-550)
	21395	ToyoScreen IEC Cation Mix Pack, 5 mL x 3 grades x 2 ea. (CM, SP-650, SP-550)
	21396	ToyoScreen IEC Mix Pack, 1 mL x 6 grades x 1 ea. (DEAE, SuperQ, QAE, CM, SP650, SP-550)
	21397	ToyoScreen IEC Mix Pack, 5 mL x 6 grades x 1 ea. (DEAE, SuperQ, QAE, CM, SP650, SP-550)
	21400	ToyoScreen Column Holder
	42194	ToyoScreen Column Holder with fittings

**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 CM-650** chromatographic resin is designed for cation exchange chromatography. This chromatographic mode separates molecules on the basis of ionic interactions between the sample and the resin. The separation is usually accomplished in buffered aqueous solution with a gradient of increasing ionic strength. Alternatively, pH adjustment may be used for control of elution.

**Formulation:** Particulate resin (spherical), available in particle sizes (mean diameter):  
35 µm = "S" grade  
65 µm = "M" grade  
100 µm = "C" grade  
Supplied as slurry in 20 % ethanol (v/v).

<b>Physicochemical Specifications:</b>	▪ Appearance	White resin slurry which settles upon standing
	▪ Particle Size Distribution (>80 % within range)	20 – 50 µm for CM-650S 40 – 90 µm for CM-650M 50 – 150 µm for CM-650C
	▪ Exclusion Limit	5 x10 <sup>6</sup> Dalton (globular protein)

▪ Mean Pore Diameter	1000 Å
▪ Pressure drop across the column	max. 7 bar (recommended)
▪ Operating Linear Flowrate	normally 10 – 600 cm/hour (depending on particle size)
▪ Ion Exchange Capacity	0.1 ± 0.02 meq/mL (S,M grade) 0.08 ± 0.03 meq/mL (C grade)
▪ Protein Adsorption Capacity	40 ± 10 mg/mL (Lysozyme)
▪ Bacterial Count	≤ 100 CFU/mL
▪ Endotoxin Concentration	≤ 10.0 endotoxin units/mL
▪ Pack sizes and type	50 mL, 100 mL, 250 mL, 1 L, 5 L, 50 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	< 0.2 %
▪ Shelf Life Stability	Minimum 5 years

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