



RESIN INFORMATION SHEET

Product Name TOYOPEARL® SP-650
(Strong cation exchange chromatography resin)

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| Part Numbers | 19822 | TOYOPEARL SP-650S, 25 mL |
| | 08437 | TOYOPEARL SP-650S, 250 mL |
| | 14698 | TOYOPEARL SP-650S, 1 L |
| | 08438 | TOYOPEARL SP-650S, 5 L |
| | 21477 | TOYOPEARL SP-650S, 50 L |
| | 43202 | TOYOPEARL SP-650M, 100 mL |
| | 07997 | TOYOPEARL SP-650M, 250 mL |
| | 14699 | TOYOPEARL SP-650M, 1 L |
| | 07998 | TOYOPEARL SP-650M, 5 L |
| | 18369 | TOYOPEARL SP-650M, 50 L |
| | 07994 | TOYOPEARL SP-650C, 250 mL |
| | 14700 | TOYOPEARL SP-650C, 1 L |
| | 07995 | TOYOPEARL SP-650C, 5 L |

Product Description TOYOPEARL chromatographic resins are based on a rigid methacrylic polymer, resulting in high mechanical and chemical stability. Resins are available as non-functionalized “HW” series resins for size exclusion separations, and derivatized with surface chemistries for alternative modes of chromatography such as ion exchange, hydrophobic interaction or affinity separations.

TOYOPEARL SP-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.

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| Operating Conditions | Packing pressure | Typically 0.3 MPa |
| | Shipping solvent | 20 % (v/v) ethanol |
| | Shipping formulation | 72 % (v/v) slurry in shipping solvent (*) |
| | Pressure limiting factor | Depend on column hardware (typically 0.7 MPa) |
| | Operating linear flowrate | Typically 10 - 600 cm/hour |
| | Long term storage conditions | 20 % (v/v) ethanol |
| | Cleaning in place / sanitization | 0.1 - 0.5 mol/L NaOH or 0.1 mol/L HCl |

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| Specifications | Particle size distribution (Min. 80 % within range) | 20 - 50 µm for S-grade 40 - 90 µm for M-grade 50 - 150 µm for C-grade |
| | Ion exchange capacity | 0.13 - 0.17 eq/L for S-, M-grade 0.12 - 0.18 eq/L for C-grade |
| | Protein adsorption capacity (of lysozyme) | 40 - 60 g/L for S-, M-grade 35 - 55 g/L for C-grade |
| | Bacterial count | Max. 100 CFU/mL |
| | Endotoxin concentration | Max. 10.0 EU/mL |
| | Eluable matter | Max. 0.2 % (for dry gel) |
| | Foreign substance (colored particle) | Unobserved |

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| Additional Information | Appearance | White resin slurry which settles upon standing |
| | Mean pore diameter (base resin) | 100 nm (*) |

(*) The value is for reference only, not guaranteed.

Lot-specific data are included in the Certificate of Analysis (COA) shipped with the product. For detailed test procedures please refer to the appropriate Regulatory Support File.