Product Data Sheet

DIAION™ SMT200L

DIAION™ SMT200L is a mixed resin with strongly acidic cation exchange resin, DIAION™ SKT20L, and strongly basic anion exchange resin, DIAION™ SAT20L. It is used for non-regenerable mixed bed for semiconductor ultrapure water.

Product

Grade Name	DIAION™ SMT200L
Type	Mixed
Matrix	Styrene-DVB, Gel
Functional Group	Sulfonic acid / Type I (trimethyl ammonium groups)
Ionic Form	H^+ / OH^-
Chemical Equivalent Ratio	1 / 1

Specification

Component		Mixed resin
Resistivity after 12 hours	MΩ·cm	18.1 min.
ΔTOC after 12 hours	ppb	1.0 max.

Component		Cation exchange resin DIAION™ SKT20L	Anion exchange resin DIAION™ SAT20L
Color and Shape	-	Brown Translucent Beads	Light Yellow Translucent Beads
Salt Splitting Capacity	meq/mL	1.7 min.	0.9 min.
Water Content	%	50 - 60	62 - 72
Particle Size Distribution on 1180 µm	%	5 max.	5 max.
Particle Size Distribution thr. 425 µm	%	1 max.	1 max.
Effective Size	mm	0.45 min.	0.45 min.
Uniformity Coefficient	-	1.6 max.	1.6 max.
Ionic Form Conversion (H^+)	eq%	99.9 min.	-
Ionic Form Conversion (OH^-)	eq%	-	90 min.
Ionic Form Conversion (Cl^-)	eq%	-	1 max.
Metal Content (Na)	ppb/dry-g	1000 max.	1000 max.
Metal Content (Ca)	ppb/dry-g	1000 max.	1000 max.
Metal Content (Fe)	ppb/dry-g	1000 max.	1000 max.
Metal Content (Zn)	ppb/dry-g	1000 max.	1000 max.
ΔTOC after 12 hours	ppb	5.0 max.	1.0 max.
Resistivity after 12 hours	MΩ·cm	16 min.	18.1 min.

Typical Properties

Component		Mixed resin
Shipping Density	g/L	710

Component		Cation exchange resin DIAION™ SKT20L	Anion exchange resin DIAION™ SAT20L
Mean Particle Size	µm	710	720
Particle Density	g/mL	1.20	1.07
Total Swelling (Na^+ to H^+)	%	9	-
Total Swelling (Cl^- to OH^-)	%	-	24

Recommended Operating Conditions

Maximum Operating Temperature	°C	60
Operating pH Range		0 - 14
Minimum Bed Depth	mm	800
Service Flow Rate	m/h	10 - 60

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Hydraulic Characteristics

The approximate pressure drop at various temperatures and flow rates for each meter of bed depth of DIAION™ SMT200L resin in normal down flow operation is shown in the graphs below.

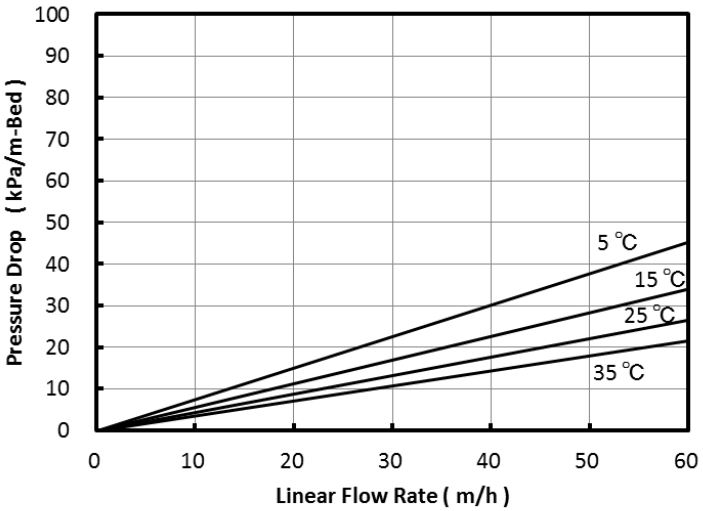

Fig. 1 Pressure Drop of SMT200L

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Rinse Performance

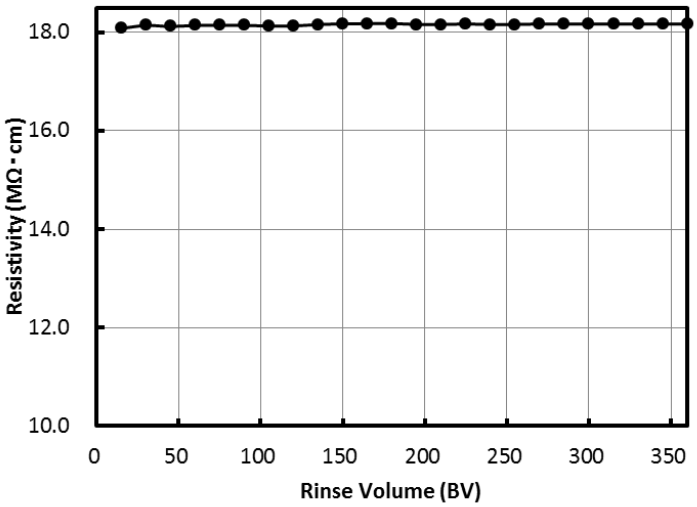

Fig. 2 Resistivity versus Rinse Volume for SMT200L
Flow rate : SV 30 (15 L/hr), Resin volume : 500 mL-R

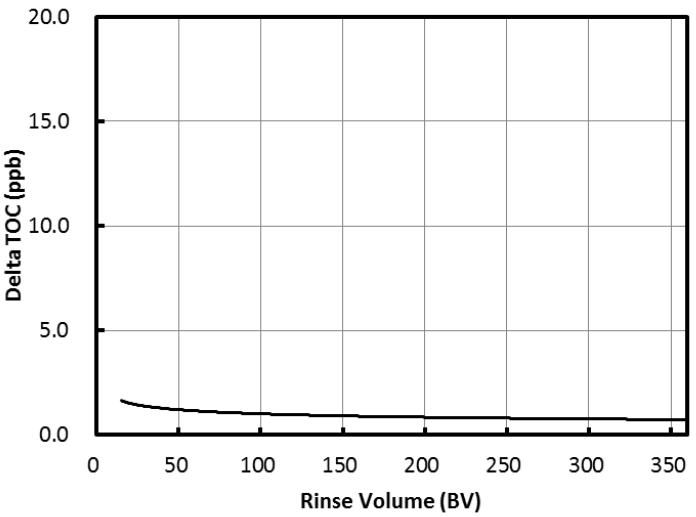

Fig. 3 Delta TOC versus Rinse Volume for SMT200L
Flow rate : SV 30 (15 L/hr), Resin volume : 500 mL-R

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