

## Product Data Sheet

## DIAION™ SMT50

DIAION™ SMT50 is a mixed resin with strongly acidic cation exchange resin, and strongly basic anion exchange resin. It is used for non-regenerable mixed bed ion exchange applications for higher purity water.

## Product

Grade Name	DIAION™ SMT50	
Type	Mixed	
Matrix	Styrene-DVB, Gel	
Functional Group	Sulfonic acid / Type I (trimethyl ammonium groups)	
Ionic Form	H <sup>+</sup> / OH <sup>-</sup>	
Chemical Equivalent Ratio	1 / 1	

## Specification

Component	Mixed resin	
Outlet Resistivity	MΩ·cm	18 min.
ΔTOC	ppb	5 max.

## Typical Properties

Component		Mixed resin	
Shipping Density	g/L	710	
Component		Cation exchange resin	Anion exchange resin
Whole Bead Count	-	90 min.	-
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. 300 μm	%	1 max.	1 max.
Mean Particle Size	μm	700	720
Effective Size	mm	0.40 min.	0.40 min.
Uniformity Coefficient	-	1.6 max.	1.6 max.
Ionic Form Conversion (H <sup>+</sup> )	eq%	99 min.	-
Ionic Form Conversion (OH <sup>-</sup> )	eq%	-	90 min.
Ionic Form Conversion (Cl <sup>-</sup> )	eq%	-	1 max.
Particle Density	g/mL	1.20	1.08
Total Swelling (Na <sup>+</sup> to H <sup>+</sup> )	%	9	-
Total Swelling (Cl <sup>-</sup> to OH <sup>-</sup> )	%	-	24

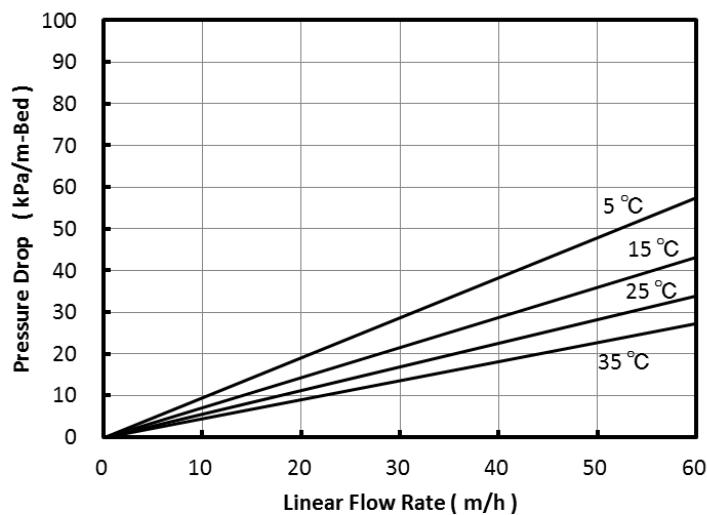
## Recommended Operating Conditions

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

1 BV(Bed Volume)=1 m<sup>3</sup>/m<sup>3</sup>-resin

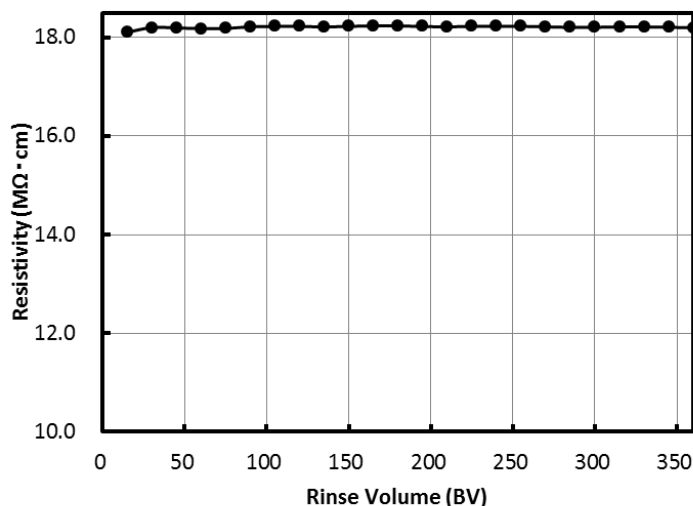
### Hydraulic Characteristics

The approximate pressure drop at various temperatures and flow rates for each meter of bed depth of DIAION™ SMT50 resin in normal down flow operation is shown in the graphs below.

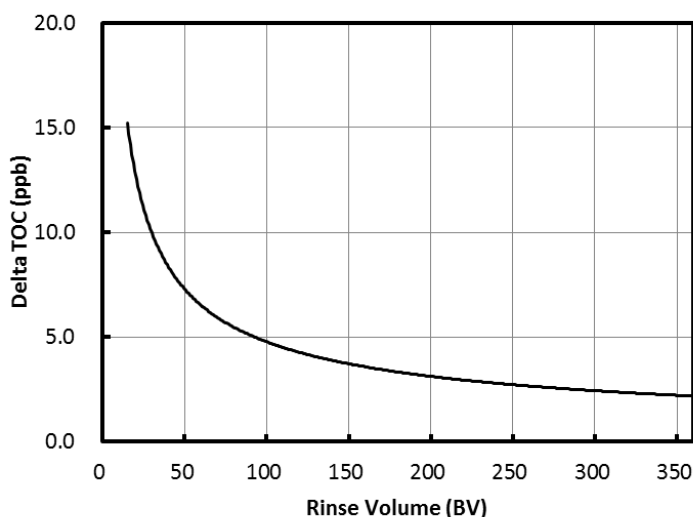


**Fig. 1 Pressure Drop of SMT50**

## Rinse Performance



**Fig. 2 Resistivity versus Rinse Volume for SMT50**  
Flow rate : SV 30 (15 L/hr), Resin volume : 500 mL-R



**Fig. 3 Delta TOC versus Rinse Volume for SMT50**  
Flow rate : SV 30 (15 L/hr), Resin volume : 500 mL-R

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