

# ION EXCHANGE RESIN

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## IONEX S - 100

### Product Information

IONEX S-100 is strong acid cationic ion exchange resin with high operating capacity and the ability to achieve pure water quality with very low residual of total hardness. IONEX S -100 is supplied as spherical beads in the sodium form, but can be supplied in H + form too (optional). IONEX S-100 is proven excellent product to use for demineralization and softening plant to reduce and eliminate cationic minerals in water.

### Physical and Chemical Characteristics

Polymer matrix structure	Polystyrene crosslinked with 8 % DVB
Functional group	R-(SO <sub>3</sub> ) -M+
Ionic form as shipped	Na+
Physical form and appearance	Clear Spherical Beads
Sphericity	95 %, minimum
Screen size range – US Standard screen	16 – 50 Mesh, wet
Particle size range	+1.2 mm < 5%, 0.3 mm < 1%
Uniformity coefficient	1.6 max
Water retention, Na <sup>+</sup> form	43 – 48 %
H <sup>+</sup> form	50 – 56 %
Swelling Na <sup>+</sup> to H <sup>+</sup>	10 %, maximum
Shipping weight, Na <sup>+</sup> form	780 - 880 g/l (51 lbs/cu.ft, approx.)
H <sup>+</sup> form	770 - 870 g/l (50 lbs/cu.ft, approx.)
Total exchange capacity, Na+ form	2.0 eq/liter
pH range	0 – 14
Storability of the product	Minimum 2 years
Storability at temperature	-10 – 40 °C

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### Recommended Operating Condition

Maximum temperature Na <sup>+</sup> form	120 °C max.
H <sup>+</sup> form	100 °C max.
Operating pH range	0 - 14
Maximum pressure loss, kPa	150
Minimum bed Depth	0.8 m
Freeboard as % of resin volume	50 – 60 %
<b>Cocurrent Regeneration</b>	
Service flowrate	40 m/h
Backwash flowrate	14 – 20 m/h
Backwash expansion	50 – 60 %
Regenerant Concentration	8-10 % NaCl, 4 - 6% HCl, 2 – 3 % H <sub>2</sub> SO <sub>4</sub>
Regenerant velocity	5 - 6 m/h
Contact Time	30 - 60 Minutes
Regenerant consumption	100 – 200 g NaCl/liter resin 60 – 100 g HCl/liter resin 80 – 150 g H <sub>2</sub> SO <sub>4</sub> /liter resin
Slow rinse Rate	5 – 6 m/h
Slow rinse water consumption	5 – 6 BV
Fast rinse Rate	Same as service flowrate
Fast rinse water consumption	5 – 6 BV
<b>Countercurrent Regeneration</b>	
Service flowrate	40 m/h
Backwash flowrate	14 – 20 m/h
Backwash expansion	50 – 60 %
Regenerant Concentration	8-10 % NaCl, 4 - 6% HCl, 2 – 3 % H <sub>2</sub> SO <sub>4</sub>
Regenerant velocity	5 - 6 m/h
Contact Time	30 - 60 Minutes
Regenerant consumption	50 – 100 g NaCl/liter resin 40 – 50 g HCl/liter resin 40 – 80 g H <sub>2</sub> SO <sub>4</sub> /liter resin
Slow rinse Rate	5 – 6 m/h
Slow rinse water consumption	3 – 4 BV
Fast rinse Rate	Same as service flowrate
Fast rinse water consumption	3 – 5 BV