PRODUCT SPECIFICATION SHEET

SIR-500

CHELATING RESIN

BRINE SOFTENING
POLYSTYRENIC MACROPOROUS
SODIUM FORM

ResinTech SIR-500 is a sodium form macroporous chelating weak acid cation resin. Its unique aminophosphonic chelating functionality and is particularly selective for alkaline earth metals such as calcium. SIR-500 is intended for removal of hardness from saturated brine and for removal of divalent metals such as copper and nickel from wastewater and various process streams.

APPLICATIONS

- Brine Softening
- Trace Metals Removal

TYPICAL PROPERTIES & PHYSICAL CHARACTERISTICS	
Polymer Matrix	Styrenic Macroporous
Ionic Form	Sodium
Functional Group	Aminophosphonic
Physical Form	Spherical Beads
Particle Size	16 to 50 US Mesh (297 - 1190 µm)
% < 50 mesh (300µm)	< 1%
Minimum Sphericity	95%
Uniformity Coefficient	1.6
Reversable Swelling	H to Na 35% to 45%
Temp Limit	212°F (100°C)
Capacity (meq/mL)	1.7
Moisture Retention	50% to 70%
Shipping Weight	40 - 42 lbs/ft³ (641 - 673 g/L)
Color	White to Tan
Regenerability	Yes

PACKAGING OPTIONS

- 500 ml samples
- 1 ft³ bags
- 1 ft³ boxes
- 1 ft³ drums
- 7 ft³ drums
- 42 ft³ supersacks

Revision 1.0
ResinTech, Inc.®

RESINTECH® INC.
INNOVATIONS IN ION EXCHANGE

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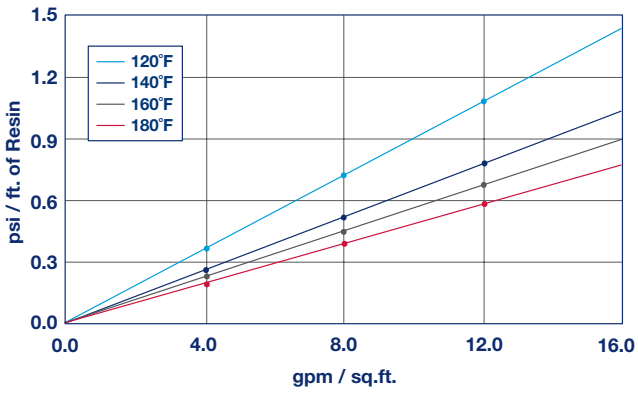
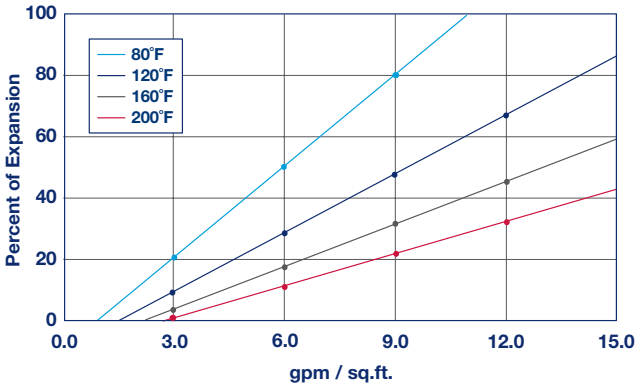
Pressure Loss



Backwash Expansion



BRINE SOFTENING

ResinTech SIR-500 is ideally suited to remove traces of hardness from saturated brines, as pretreatment to electrolysis cells as well as other applications for brines that require low levels of divalent metals. SIR-500 works best at relatively alkaline pH following chemical precipitation processes.
All chelating resins are kinetically limited and require a low flow rate. Elevated temperatures improve kinetics provided the resin is not operated beyond its stated thermal limits.
To avoid excessive bead breakage, care must be taken to "sweeten on" and "sweeten off" to avoid thermal and osmotic shock from occurring.

TRACE METALS REMOVAL

ResinTech SIR-500 can be used to remove heavy metal multivalent ions from a variety of industrial effluents like oil refineries, plating shops, mine drainage, battery manufacturers, cooling towers etc.

ORDER OF SELECTIVITY

pH Below 7
H>Pb> Cu> Zn>Mg> Ca> Cd> Ni>> Na
pH Above 7
Cd> Mg> Ca> Sr> Al> Ba>> Na

SUGGESTED OPERATING CONDITIONS

Maximum continuous temperature	
Sodium form	185˚F
Minimum bed depth	36 inches
Backwash expansion	25 to 50 percent
Maximum pressure loss	25 psi
Operating pH range	2 to 10 SU
Regenerant Concentration	
Acid Strip	0.5 to 6 percent HCl
Caustic Neutralization	0.5 to 6 percent NaOH
Regenerant level	2 to 10 lbs./cu.ft.
Regenerant flow rate	0.25 to 1.0 gpm/cu.ft.
Regenerant contact time	>30 minutes
Displacement flow rate	Same as dilution water
Displacement volume	10 to 20 gallons/cu.ft.
Rinse flow rate	Same as service flow
Rinse volume	35 to 60 gallons/cu.ft.
Service flow rate	0.5 to 2 gpm/cu.ft.

Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums.
For operation outside these guidelines, contact ResinTech Technical Support

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