PRODUCT SPECIFICATION SHEET

SUPRA

SIR-300

CHELATING RESIN

HEAVY METAL SELECTIVE
POLYSTYRENIC MACROPOROUS
SODIUM FORM

ResinTech SIR-300 is a sodium form macroporous chelating weak acid cation resin. Its unique chelating functionality removes divalent transition metals preferentially to alkaline earth metals such as calcium. Since the sodium form is highly alkaline, pH adjustment is usually required before first use. SIR-300 is intended for the removal of low to moderate concentrations of heavy metals from waste streams.

APPLICATIONS

- Trace Metals Removal

TYPICAL PROPERTIES & PHYSICAL CHARACTERISTICS	
Polymer Matrix	Styrenic Macroporous
Ionic Form	Sodium
Fuctional Group	Iminodiacetic
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 30% to 40%
Temp Limit	212°F (100°C)
Capacity (meq/mL)	1.1
Moisture Retention	50% to 60%
Shipping Weight	44 - 46 lbs/ft³ (705 - 737 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

MADE IN AMERICA

RESINTECH® INC.
INNOVATIONS IN ION EXCHANGE

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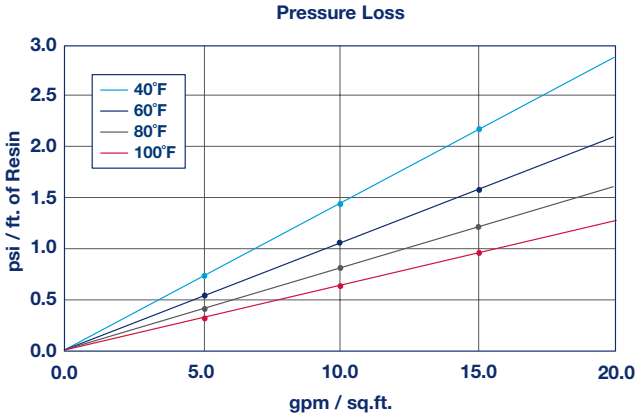

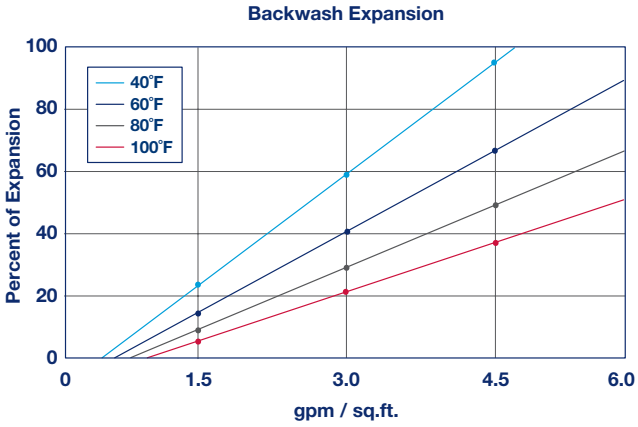

TRACE METALS REMOVAL

The relative affinity of ResinTech SIR-300 for heavy metals in near neutral solutions is in accordance with the following sequence:

H>>Cu>Pb>Ni>Zn>Co>
Cd>Fe>Mn>Mg>Ca>Sr>B>>Na

High concentrations of chlorides or sulfates, or the presence of chelating or complexing agents can alter this sequence and likewise will affect the operating capacity.

High Chloride Solutions - Cu>Ni>Co>Zn>Cd>Fe
High Sulfate Solutions - Cu>Ni>Cd>Zn>Co>Fe

ResinTech SIR-300 has similar chelating characteristics to EDTA and NTA, therefore it is less effective when these agents are present. For each particular metal cation there is a critical pH at which SIR-300 has optimum selectivity. For most metals this pH is approximately 4.0. As the pH decreases, so does the selectivity. At a pH of approximately 1.5, SIR-300 loses its ability to remove most metals. The minimum pH values for removal of some common metal ions are as follows:

Manganese 4.0, Iron 3.0; Zinc, Cobalt 2.7,
Nickel 2.5, Copper 1.5

As the pH increases, selectivity generally decreases. Above a pH of 9.0 many metals form anionic complexes and are no longer present in a form that can be removed by ResinTech SIR-300.

SUGGESTED OPERATING CONDITIONS

Maximum continuous temperature	
Sodium form	170˚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 flow
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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