

SIR-350

Specialty media resin, styrene/DVB macroporous, sodium form

ResinTech SIR-350 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. It has a higher capacity than SIR-300. Since the sodium form is highly alkaline, pH adjustment is usually required before first use. SIR-350 is intended for the removal of low to moderate concentrations of heavy metals from waste streams.



FEATURES & BENEFITS

- High Capacity
- Removes Heavy Metal Cations From Process Solutions
- Removes Heavy Metals From Rinse Waters
- Superior Physical Stability

APPLICATIONS

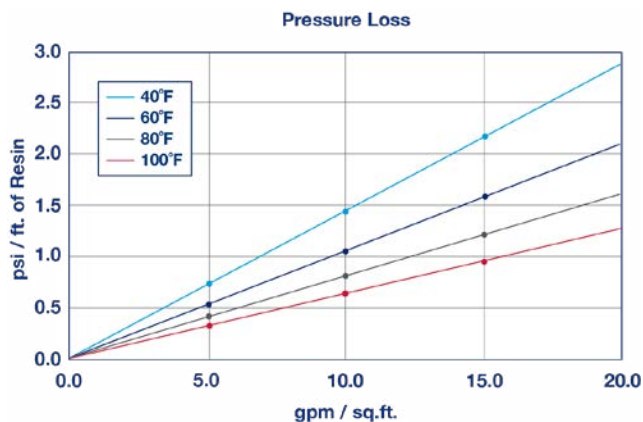
- Cartridge Applications
- Copper Removal
- Heavy Metal Removal
- Lead Removal

REACH Registered

SIR-350

Polymer Matrix	Styrene/DVB	Minimum Sphericity (%)	95
Polymer Type	Macroporous	Reversible Swelling	30 to 40% (Na → H)
Ionic Form (as shipped)	Sodium (Na ⁺)	Uniformity	Gaussian
Functional Group	Iminodiacetic	Uniformity Coefficient	1.60
Physical Form	Spherical Beads	Capacity (meq/mL)	1.60
Particle Size US Mesh (µm)	16 (1190) to 50 (297)	Moisture Retention (%)	50 to 60
< 50 mesh (300 µm) %	< 1%	Shipping Weight	43 - 45 lbs/cu.ft. (689 - 721 g/L)
		Color	White to Tan

PRESSURE LOSS



The graph above shows the expected pressure loss of ResinTech SIR-350 per foot of bed depth as a function of flow rate at various temperatures.

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	176°F (80°C)	Operating pH Range	4.0 to 10.0
Minimum Bed Depth	24 in. (61.0 cm)	Flow Rate	
Maximum Pressure Loss	25 psi (172 kPa)	Working Service	1-2 gpm/cu.ft. (8-16 BV/h)
Backwash Expansion (%)	50 to 75		



TRACE METALS REMOVAL

The relative affinity of ResinTech **SIR-350** 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-350** has similar chelating characteristics to EDTA and NTA, therefore it is less effective when these agents are present.

pH Notes:

For each particular metal cation there is a critical pH at which **SIR-350** has optimum selectivity. For most metals, this pH is approximately 4.0.

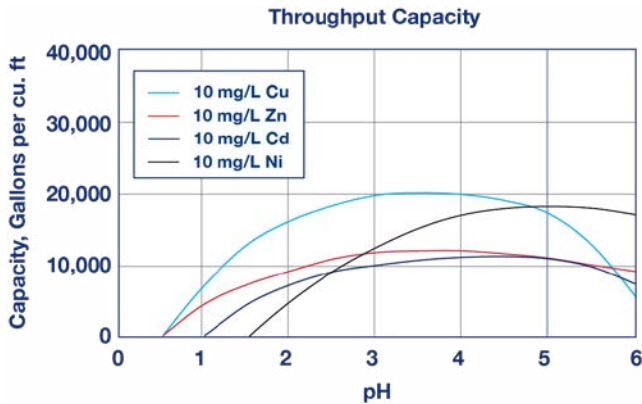
The minimum pH values for removal of some common metal ions are as follows:

Minimum pH for Metal ions

Manganese 4.0
 Iron 3.0
 Zinc, Cobalt 2.7

Nickel 2.5
 Copper 1.5

The resin becomes less selective as the pH moves further away from 4.0. **SIR-350** loses its ability to remove most metals at or below a pH of 1.5 or at or above a pH of 9.0.



Capacity is based on water with no suspended solids, less than 1000 ppm TDS, and where the metals are present in cationic form. Capacity shown is for one metal alone. Other metals may also load and reduce capacity for a particular metal of interest. No engineering downgrade has been applied.

REGENERATION DETAILS

Acid Strip (HCl)	0.5 to 6%	Displacement Flow Rate	Same as dilution water
Caustic Neutralization (NaOH)	5 to 6%	Displacement Volume	10-20 gals/cu.ft. (1-3 BV)
Regenerant Level	2-9 lbs/cu.ft. (32.0-144.2 g/L)	Rinse Flow Rate	Same as service flow
Regenerant Flow Rate	0.25-1.0 gpm/cu.ft. (2-8 BV/h)	Rinse Volume	35-60 gals/cu.ft. (5-8 BV)
Regenerant Contact Time	> 30 minutes		

PACKAGING

Standard

1 cu.ft. Bag | 7 cu.ft. Drum
 5 cu.ft. Drum | 42 cu.ft. Supersack

Metric

140L Drum | 1000 L Supersack

SAFETY DATA SHEETS (SDS)

Safety Data Sheets (SDS) are available for all products on the ResinTech website. They contain important health and safety information that may be needed to protect your employees and customers from any known health and safety hazards associated with our products. We recommend that you secure and study the pertinent MSDS for our products and any other products being used.

These suggestions and data are based on information we believe to be reliable. They are offered in good faith. However we do not make any guarantee or warranty. We caution against using these products in an unsafe manner or in violation of any patents; further we assume no liability for the consequences of any such actions.

Safety Data Sheets (SDS) are available at resintech.com

