# SIR-500

Grade: Standard

## Chelating resin, styrenic/DVB macroporous, sodium form

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

### FEATURES & BENEFITS

- Removes Calcium And Magnesium From Brine Solutions
- Removes Heavy Metal Cations From Process Solutions
- Superior Physical Stability
- Controlled Particle Size

### APPLICATIONS

- Brine Softening
- Cartridge Applications
- High TDS Brine

### PHYSICAL PROPERTIES

| | |
|---|---|
| Polymer Matrix | Styrene/DVB |
| Polymer Type | Macroporous |
| Ionic Form (as shipped) | Sodium ($Na^+$) |
| Functional Group | Aminophosphonic |
| Physical Form | Spherical Beads |
| Uniformity Coefficient | 1.60 |
| Particle Size | 16-50 US mesh (297-1190µm) |
| < 50 mesh (300 µm) % | < 1% |
| Minimum Sphericity (%) | 95 |
| Reversible Swelling | 35 to 45% (Na → H) |
| Capacity (meq/mL) | 1.40 |
| Moisture Retention (%) | 50 to 70 |
| Shipping Weight | 41 - 43 lbs/cu.ft. (657 - 689 g/L) |
| Color | White to Tan |

### SUGGESTED OPERATING CONDITIONS

| | |
|---|---|
| Maximum Temperature | 212°F (100°C) |
| Minimum Bed Depth | 36 in. (91.4 cm) |
| Maximum Pressure Loss | 25 psi (172 kPa) |
| Backwash Expansion (%) | 25 to 50 |
| Operating pH Range | 2.0 to 10.0 |
| Flow Rate | |
| Working Service | 1-2 gpm/cu.ft. (8-16 BV/h) |

REACH COMPLIANCE



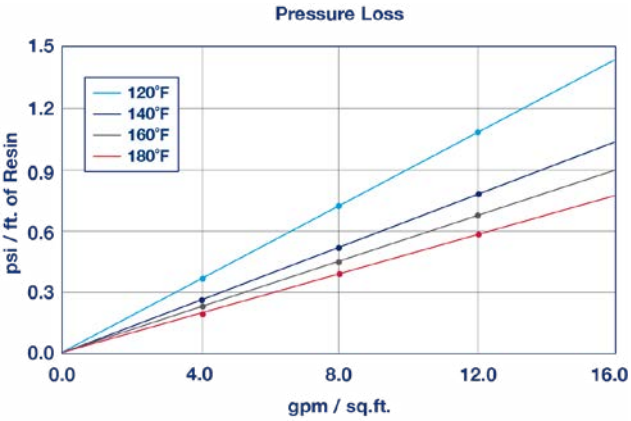
RESINTECH® INC.
INNOVATIONS IN ION EXCHANGE

CORPORATE HEADQUARTERS 1801 Federal Street Camden, NJ 08105 USA PHONE 856.768.9600 EMAIL info@resintech.com WEB resintech.com

## REGENERATION DETAILS

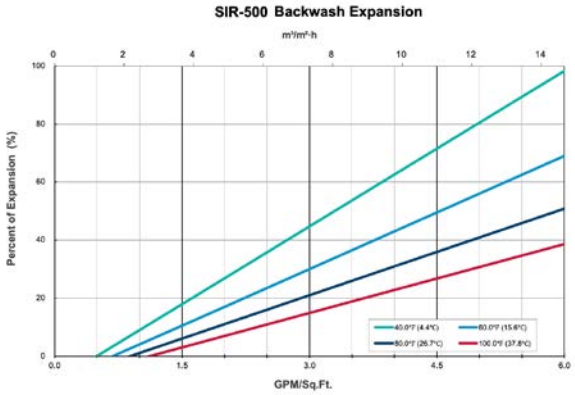
| | | | |
|---|---|---|---|
| Acid Strip (HCl) | 0.5 to 6% | Displacement Flow Rate | Same as dilution water |
| Caustic Neutralization (NaOH) | 0.5 to 6% | Displacement Volume | 10-20 gals/cu.ft. (1-3 BV) |
| Regenerant Level | 2-10 lbs/cu.ft. (32.0-160.2 g/L) | Rinse Flow Rate | Same as service flow |
| 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 | | |

## PRESSURE LOSS



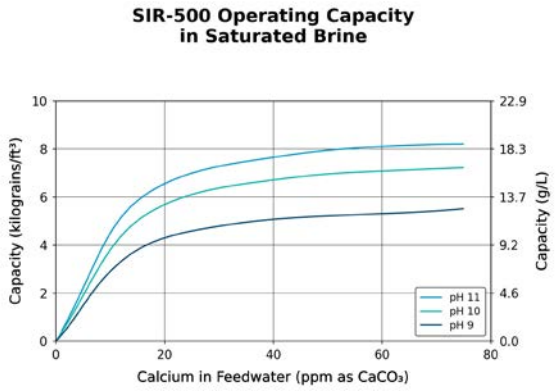

The graph above shows the expected pressure loss of ResinTech SIR-500 per foot of bed depth as a function of flow rate at various temperatures.

## BACKWASH EXPANSION




The graph above shows the expansion characteristics of ResinTech SIR-500 as a function of flow rate at various temperatures.

## CAPACITY




Capacity and leakage data are based on the following: 2:1 Ca:Mg ratio, 500 ppm TDS as CaCO3, 0.2% hardness in the salt and 10% brine concentration applied co-currently through the resin over 30 minutes. No engineering downgrade has been applied.

## 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.



RESINTECH® INC.
INNOVATIONS IN ION EXCHANGE

CORPORATE HEADQUARTERS 1801 Federal Street Camden, NJ 08105 USA PHONE 856.768.9600 EMAIL info@resintech.com WEB resintech.com

**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

**PACKAGING**

***Standard***

1 cu.ft. Bag | 7 cu.ft. Drum
25L Bag | 200 L Drum

***Metric***

5 cu.ft. Drum | 42 cu.ft. Supersack
140L Drum | 1000 L Supersack

***Shipping Weight***

41 - 43 lbs/cu.ft. (657 - 689 g/L)

**MATERIAL SAFETY DATA SHEETS (MSDS)**

Material Safety Data Sheets (MSDS) 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



RESIN TECH® INC.
INNOVATIONS IN ION EXCHANGE

CORPORATE HEADQUARTERS 1801 Federal Street Camden, NJ 08105 USA PHONE 856.768.9600 EMAIL info@resintech.com WEB resintech.com