

RESINTECH SIR-1000 is a macroporous chelating weak base anion resin. SIR-1000 is functionalized with picolyamine which allows the resin to maintain its chelating strength even in significantly acidic solutions. RESINTECH SIR-1000 is intended for use in process baths and rinse waters in metal finishing applications. It is especially well suited for use in highly acidic trichrome plating baths. SIR-1000 is supplied in the acid sulfate form.

FEATURES & BENEFITS

- **CAN FULLY RESTORE TRICHROME PLATING BATHS**

Able to remove copper, zinc, and iron directly from the bath without shutting down production

- **SELECTIVE FOR METALS**

Highly selective for copper, nickel, and iron while ignoring other background cations

- **SUPERIOR PHYSICAL STABILITY**

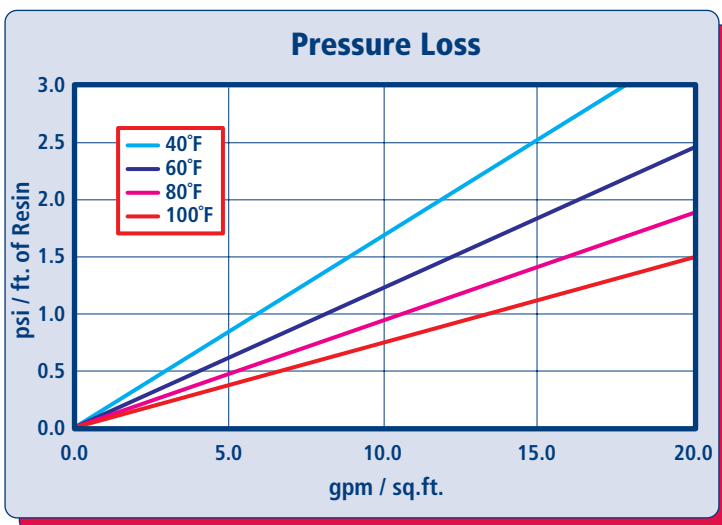
95% plus sphericity and high crush strengths together with carefully controlled particle distribution provides long life and low pressure drop

- **MACROPOROUS STRUCTURE**

Gives greatly increased life in stressful applications where resin degradation due to thermal and oxidative effects is anticipated

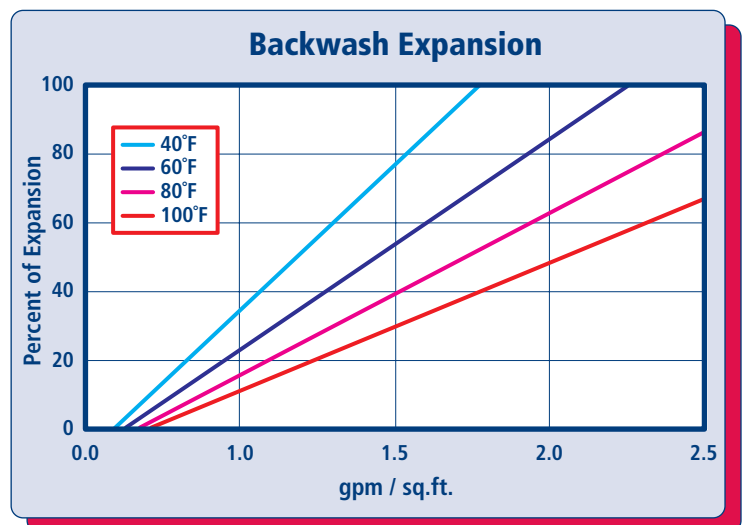
Prior to first use, resin should be backwashed for a minimum of 20 minutes, followed by 10 bed volumes of downflow rinse.

HYDRAULIC PROPERTIES



PRESSURE LOSS

The graph above shows the expected pressure loss of ResinTech SIR-1000 per foot of bed depth as a function of flow rate at various temperatures.



BACKWASH

The graph above shows the expansion characteristics of ResinTech SIR-1000 as a function of flow rate at various temperatures.

RESINTECH® SIR-1000

PHYSICAL PROPERTIES

Polymer Structure	Styrene/DVB
Polymer Type	Macroporous
Functional Group	Picolylamine
Physical Form	Spherical beads
Ionic Form as shipped	Acid sulfate
Total Capacity	
Free base form	>0.8 meq/mL
Water Retention	
Free base form	40 to 60 percent
Approximate Shipping Weight	
Free base form	42 lbs./cu.ft.
Screen Size Distribution (U.S. mesh)	16 to 50
Maximum Fines Content (<50 mesh)	1 percent
Minimum Sphericity	95 percent
Uniformity Coefficient	1.6 approx.
Resin Color	Tan

Note: Physical properties can be certified on a per lot basis, available upon request

SUGGESTED OPERATING CONDITIONS

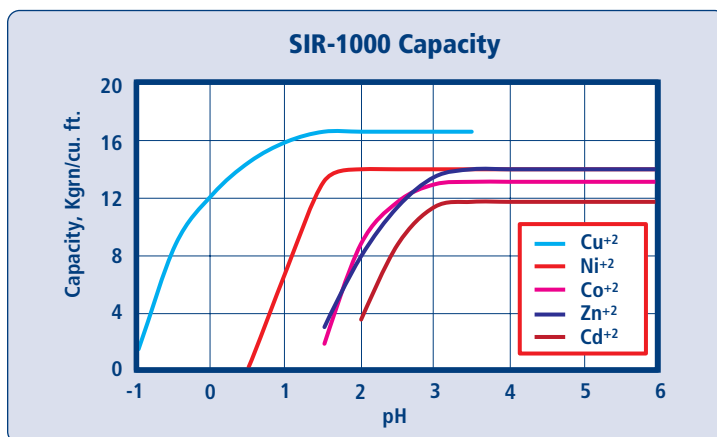
Maximum continuous temperature	
Free base form	160°F
Minimum bed depth	24 inches
Backwash expansion	25 to 50 percent
Maximum pressure loss	20 psi
Operating pH range	0 to 12 SU
Service flow rate	0.5 to 2 gpm/cu.ft.

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

PRECONDITIONING: Prior to first use, SIR-1000 should be preconditioned with 2 bed volumes of 20 percent sulfuric acid followed by a rinse of 2 to 3 bed volumes of water.

APPLICATIONS



Capacity is based on 10,000 ppm TDS as CaCO₃, 500 ppm metal as CaCO₃, and a flow rate less than 2 gpm/cu ft. No engineering downgrade has been applied.

TRICHROME BATHS

RESINTECH SIR-1000 is used to revitalize spent plating and chemical process solutions while the baths are still in service. This avoids the loss of production time and reduces operating cost of neutralization and disposal. SIR-1000 is especially effective in treating chrome plating baths in this manner by removing removing copper, nickel and iron. For example, one or two cubic feet of SIR-1000 can be used in a partial recycle mode to maintain a four thousand gallon chrome plating bath indefinitely. When the resin is exhausted it is removed temporarily, re-generated, and then placed back on line.

SOLUTION MINING

Copper, nickel, cobalt, and other metals can be selectively extracted from liquors produced by heap leaching and other solution mining techniques using RESINTECH SIR-1000. Loading depends on pH as well as metal concentrations, but in most cases the resin's operating capacity is more than half of the total capacity. Metals can be selectively eluted thus separating them for further purification. For instance, copper will load at pH well below 1 and can be eluted from the resin with ammonia. The complex nature of most mining liquors precludes making textbook predictions of operating capacity and extraction efficiency, therefore bench scale testing is recommended.

CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS. Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

MATERIAL SAFETY DATA SHEETS (MSDS) are available for all ResinTech Inc. products. To obtain a copy, contact your local ResinTech sales representative or our corporate headquarters. They contain important health and safety information. That information 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.

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