RESINTECH INC.
INNOVATIONS IN ION EXCHANGE

SIR-200

CATION EXCHANGE RESIN
MERCURY SELECTIVE
H FORM

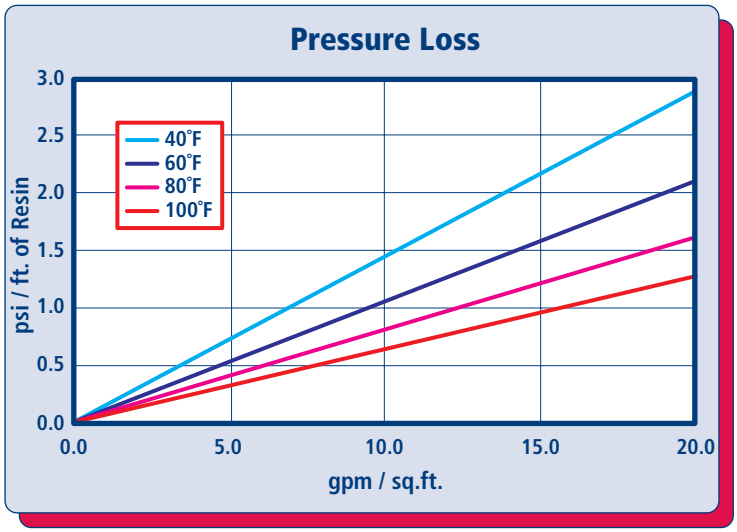
RESINTECH SIR-200 is a hydrogen form macroporous mercury selective weakly acidic cation resin. *RESINTECH SIR-200* has unique functionality that makes it selective for mercury and other heavy metals. *SIR-200* is also very selective for noble metals when present as cations. *SIR-200* is intended for mercury removal and for removal/recovery of various precious metals. *RESINTECH SIR-200* is supplied in the hydrogen form.

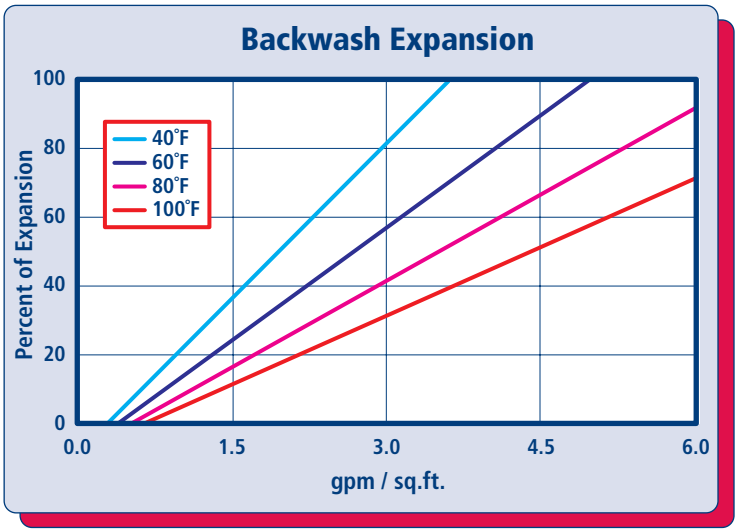
FEATURES & BENEFITS

- **ENHANCED SELECTIVITY FOR DIVALENT MERCURY**
  Able to selectively reduce mercury to extremely low (ppb) levels
- **EFFECTIVE OVER WIDE pH RANGE**
  Able to operate in acidic and neutral environments (2 to 10 pH)
- **SUPERIOR PHYSICAL STABILITY**
  95% plus sphericity and high crush strengths together with carefully controlled particle distribution provides long life and low pressure drop
- **CONTROLLED PARTICLE SIZE**
  16 to 50 mesh size provides a low pressure drop and superior kinetics

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-200* 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-200* as a function of flow rate at various temperatures.

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RESINTECH® SIR-200

PHYSICAL PROPERTIES

Polymer Structure	Styrene/DVB
Polymer Type	Macroporous
Functional Group	Thiol
Physical Form	Spherical beads
Ionic Form as shipped	Hydrogen
Water Retention	
Hydrogen form	38 to 48 percent
Approximate Shipping Weight	
Hydrogen form	45 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	White to tan

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

SUGGESTED OPERATING CONDITIONS

Maximum continuous temperature	
Hydrogen form	160˚F
Minimum bed depth	36 inches
Backwash expansion	25 to 50 percent
Maximum pressure loss	25 psi
Operating pH range	2 to 10 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

APPLICATIONS

PRECIOUS METALS REMOVAL

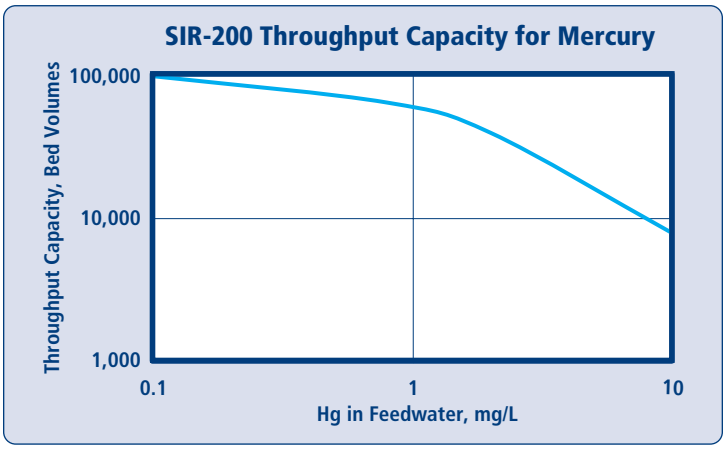
Removal of precious metals by *RESINTECH SIR-200* generally follows the solubility of that metal in the presence of sulfide ion. Metals load according to their relative sulfide affinities. However, high concentrations of "tramp" metals also load and may prevent loading of more desirable metals. The order of selectivity of Resintech SIR-200 is shown in the following sequence:

Hg>Ag>Cu>Pb>Cd>Ni>Co>Fe>Ca>Na

SIR-200 removes cationic forms of metals. Removal of anionic and zero valent forms of metals is uncertain. Chelating agents such as EDTA interfere with SIR-200's performance. As pH increases, capacity decreases. For most heavy metals, there is a critical pH above which the metal is no longer present as a free cation. In most cases, the best-suited pH will be less than 7.0. The thiol groups contained in SIR-200 become deactivated at pH greater than 10.

MERCURY REMOVAL

RESINTECH SIR-200 has exceptional affinity for cationic forms of mercury and can be used to remove cationic mercury from wastewaters to much less than 1 ppb. Mercury can also be present as part of an organic complex, as an anion, and as an uncharged species. Removal of these species is uncertain. SIR-200 is rapidly degraded by the presence of chlorine and other oxidants and is inactivated at significantly alkaline pH. Due to the possible release of low levels of H_2S, SIR-200 is not recommended for use in potable water applications.



Capacity chart is based on waters less than 5,000 ppm TDS, no oxidizing potential, and where mercury is present in cationic form. No engineering downgrade has been applied.