

RESINTECH SIR-100-HP is a chloride form macroporous nitrate selective strong base anion resin. SIR-100-HP has a unique functionality that increases selectivity for nitrate and decreases selectivity for sulfate. This results in higher operating capacity, lower leakage, and freedom from nitrate dumping if operated past sulfate break. SIR-100-HP is intended for all nitrate removal applications, and can also be used to remove perchlorate. SIR-100-HP is supplied in the chloride form.



**NSF/ANSI-61 CERTIFIED FOR  
 MATERIAL SAFETY**

## FEATURES & BENEFITS

- **HIGHEST OPERATING CAPACITY AND EFFICIENT BRINE REGENERATION**

Unique amine functional group provides the highest possible operating capacity

- **LOW SULFATE SELECTIVITY**

Eliminates the possibility of nitrate dumping

- **SUPERIOR PHYSICAL STABILITY**

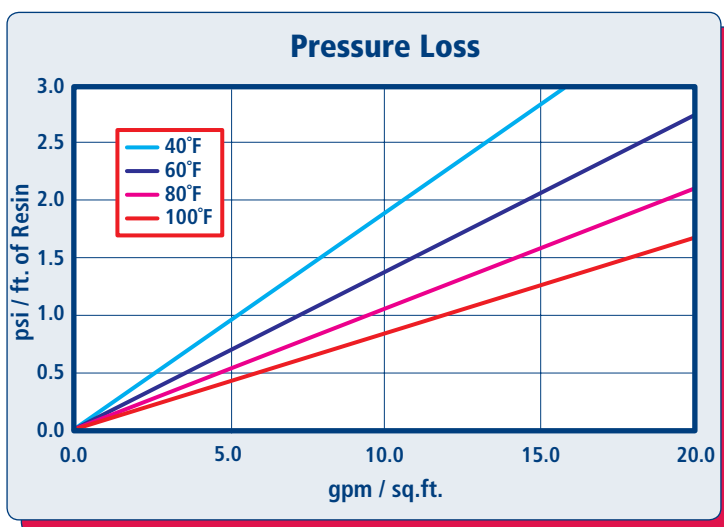
95% plus sphericity and high crush strengths together with carefully controlled particle distribution provides long life and low pressure drop

- **CONTROLLED PARTICLE SIZE**

16 to 50 mesh size provides a low pressure drop and superior kinetics

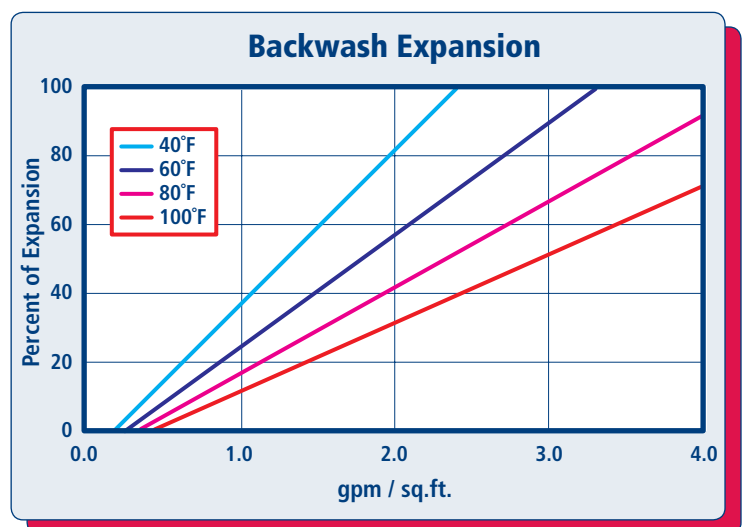
Prior to first use for potable water, resin should be backwashed for a minimum of 20 minutes, followed by 10 bed volumes of downflow rinse.

## HYDRAULIC PROPERTIES



### PRESSURE LOSS

The graph above shows the expected pressure loss of ResinTech SIR-100-HP 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-100-HP as a function of flow rate at various temperatures.

# RESINTECH® SIR-100-HP

## PHYSICAL PROPERTIES

Polymer Structure	Styrene/DVB
Polymer Type	Macroporous
Functional Group	Trimethylamine
Physical Form	Spherical beads
Ionic Form as shipped	Chloride
Total Capacity Chloride form	0.9 meq/mL
Water Retention Chloride form	46 to 56 percent
Approximate Shipping Weight Chloride form	41 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 Chloride form	170°F
Minimum bed depth	24 inches
Backwash expansion	25 to 50 percent
Maximum pressure loss	20 psi
Operating pH range	4 to 10 SU
Regenerant Concentration Salt cycle	5 to 10 percent NaCl
Regenerant level	>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 15 gallons/cu.ft.
Rinse flow rate	Same as service flow
Rinse volume	35 to 60 gallons/cu.ft.
Service flow rate Average flow	1 to 4 gpm/cu.ft.
Peak Flow	<10 gpm/cu.ft.

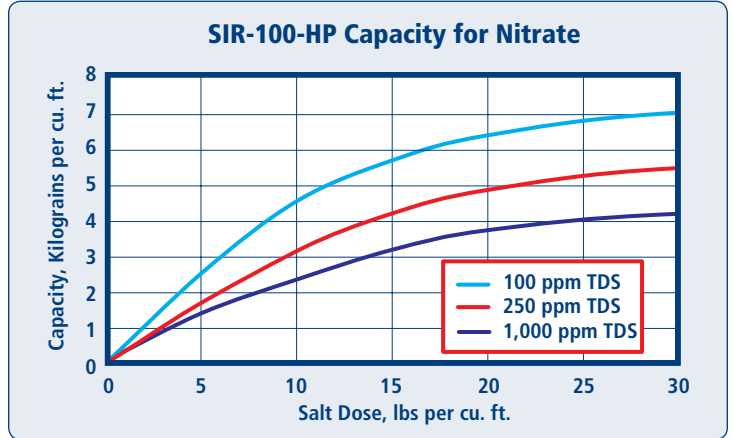
Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums.

For operation outside these guidelines, contact ResinTech Technical Support

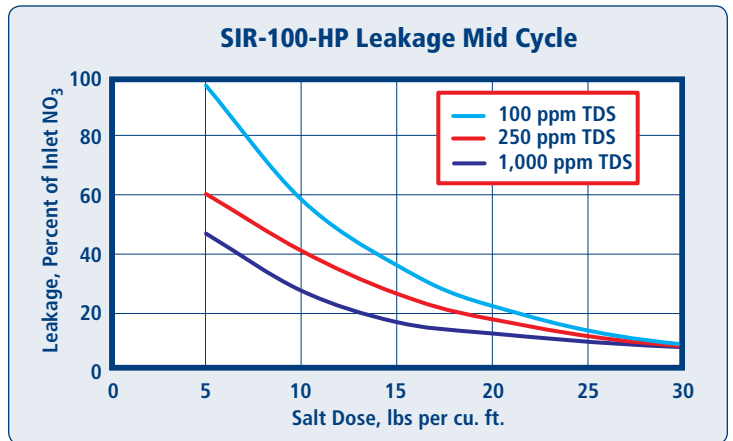
## APPLICATIONS

### NITRATE REMOVAL

RESINTECH SIR-100-HP is used in the chloride form to remove nitrates from potable water. It has a unique amine functional group that eliminates the possibility of nitrate dumping. SIR-100-HP has reduced affinity for sulfate which provides high operating capacity and efficient regeneration. When treating waters with high hardness the brine dilution and displacement waters should be softened and a low hardness salt used to prevent scaling.



Capacity and leakage based on 10% NO<sub>3</sub> and 40% SO<sub>4</sub> in the feed and 35.7 ppm NO<sub>3</sub> endpoint (all as CaCO<sub>3</sub>). Capacity and leakage are for nitrate alone. TDS is for total anions as CaCO<sub>3</sub>. No engineering downgrade has been applied.



### PERCHLORATE REMOVAL

ResinTech SIR-100-HP can be used for the removal of perchlorate from groundwater supplies. The perchlorate ion is so strongly attracted that in some cases it makes regeneration impractical.



East Coast - West Berlin, NJ p:856.768.9600 • Midwest - Chicago, IL p:708.777.1167 • West Coast - Los Angeles, CA p:323.262.1600

**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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