

RESINTECH SIR-110-HP is a chloride form PFAS, nitrate and perchlorate selective strong base anion resin. SIR-110-HP has unique functionality that greatly increases selectivity for nitrate while greatly decreasing the interference from sulfate ions. RESINTECH SIR-110-HP has the highest possible selectivity for perchlorate when compared to other similar resins. SIR-110-HP is intended for all perchlorate and PFAS removal applications, and where the highest possible affinity for nitrate is desired. SIR-110-HP is supplied in the chloride form.



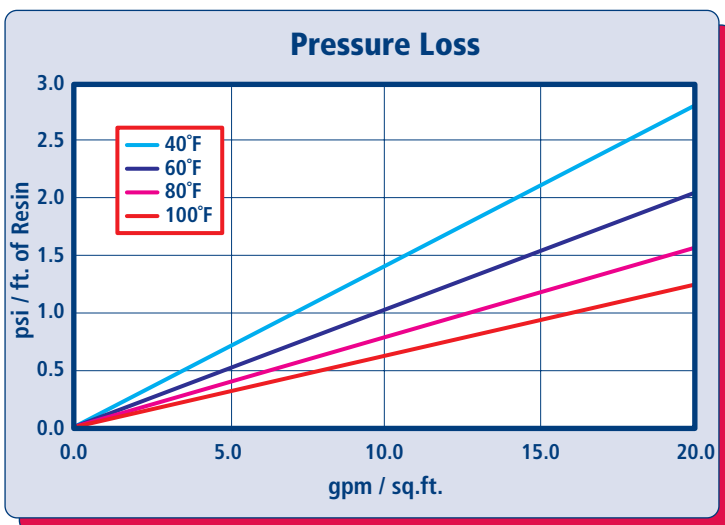
C US  
**NSF/ANSI-61 CERTIFIED FOR  
MATERIAL SAFETY**

## FEATURES & BENEFITS

- **HIGHEST OPERATING CAPACITY OF ANY PERCHLORATE AND PFAS SELECTIVE RESIN**  
Highly selective for perchlorate, PFAS and nitrate
- **LOW SULFATE SELECTIVITY**  
The unique functional group eliminates the possibility of nitrate dumping
- **SUPERIOR PHYSICAL STABILITY**  
90% 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

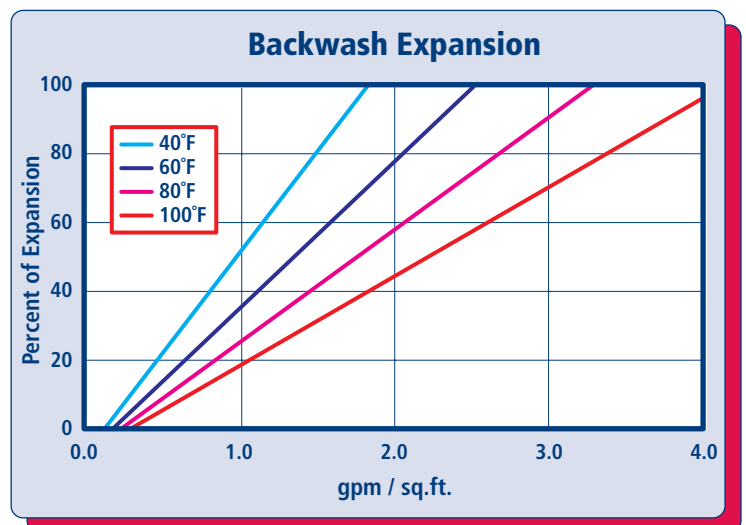
NSF/ANSI-61 compliance requires conditioning with a minimum 20 bed volume rinse prior to first use.

## HYDRAULIC PROPERTIES



### PRESSURE LOSS

The graph above shows the expected pressure loss of ResinTech SIR-110-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-110-HP as a function of flow rate at various temperatures.

# RESINTECH® SIR-110-HP

## PHYSICAL PROPERTIES

Polymer Structure	Styrene/DVB
Functional Group	Tributylamine
Physical Form	Spherical beads
Ionic Form as shipped	Chloride
Total Capacity Chloride form	>0.7 meq/mL
Water Retention Chloride form	38 to 50 percent
Approximate Shipping Weight Chloride form	41 lbs./cu.ft.
Screen Size Distribution (U.S. mesh)	20 to 50
Maximum Fines Content (<50 mesh)	1.5 percent
Minimum Sphericity	90 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	1 to 3 gpm/cu.ft.

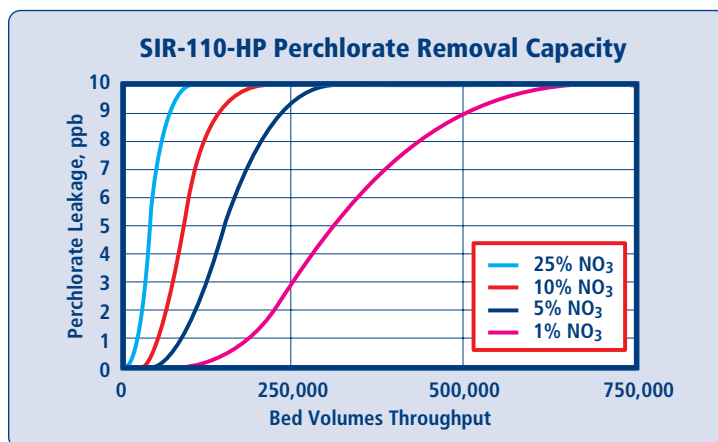
Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums.

For operation outside these guidelines, contact ResinTech Technical Support

## APPLICATIONS

### PFAS REMOVAL

ResinTech SIR-110-HP can be used for removal of various PFAS compounds, including PFOA and PFOS, from water. Testing has shown it can remove a wide range of other PFAS species in addition to these compounds. Ion exchange offers the benefit of reduced contact times and longer throughputs vs. conventional activated carbon treatment. An understanding of the influent water chemistry is needed for thorough review. Levels of TOC, VOC and individual PFAS compounds are needed in addition to the basic background water chemistry (chloride, sulfate, alkalinity, etc.). Any other contaminants that may be present are also needed to determine impact on PFAS removal (uranium, perchlorate, chromate, arsenic, etc.).



Capacity chart is based on waters with inlet conditions of 10 ppb ClO<sub>4</sub>, TDS less than 500 ppm, and is for perchlorate alone, exclusive of other anions. No engineering downgrade has been applied.

### PERCHLORATE REMOVAL

ResinTech SIR-110-HP is ideal for single use perchlorate removal applications and is a cost effective method to remove trace levels of perchlorate from water. The perchlorate ion is very strongly attracted to the ResinTech SIR-110-HP, so much so that regeneration is impractical or impossible. However, in most cases perchlorate loads to almost the full capacity of the resin, resulting in very long service life and eliminating the need to regenerate and re-use the spent resin.

### NITRATE REMOVAL

RESINTECH SIR-110-HP can be used in the chloride form to remove nitrates as well as perchlorates from potable water. SIR-110-HP has higher capacity for nitrate than SIR-100-HP in high TDS waters. When treating waters with high hardness the brine dilution and displacement waters should be softened and a low hardness salt used to prevent scaling. Regeneration, although possible, can be complicated, and may require special brining techniques or brine dosages.

**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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