



SBACR

**ANION EXCHANGE RESIN
ACRYLIC TYPE ONE
Cl OR OH FORM**

RESINTECH SBACR is a high capacity, organic fouling resistant, gelular, acrylic Type One, strongly basic anion resin, supplied in the chloride or hydroxide form as moist, tough, uniform spherical beads. *RESINTECH SBACR* is intended for use in all types of deionization systems and chemical processing applications, where water temperatures do not exceed 90 Deg. F.

FEATURES & BENEFITS

- **HIGH CAPACITY FOR ORGANICS**

High water content and acrylic structure gives greater capacity in applications where high levels of organics are expected such as in surface water supplies.

- **COMPLIES WITH FDA REGULATIONS FOR POTABLE WATER APPLICATIONS.**

Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the F.D.A.*

- **SUPERIOR PHYSICAL STABILITY**

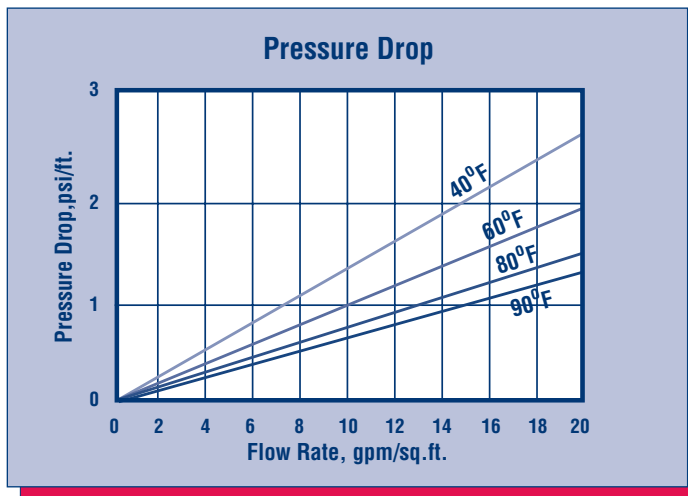
Over 93% sphericity combined with high crush strengths and uniform particle size provide greater re-sistance to bead breakage due to mechanical, thermal or osmotic stresses.

- **EXCELLENT REGENERATION EFFICIENCY**

Superior kinetics and low chloride selectivity gives high regeneration efficiency. This results in high operating capacity, excellent resistance to organic fouling and low silica leakage.

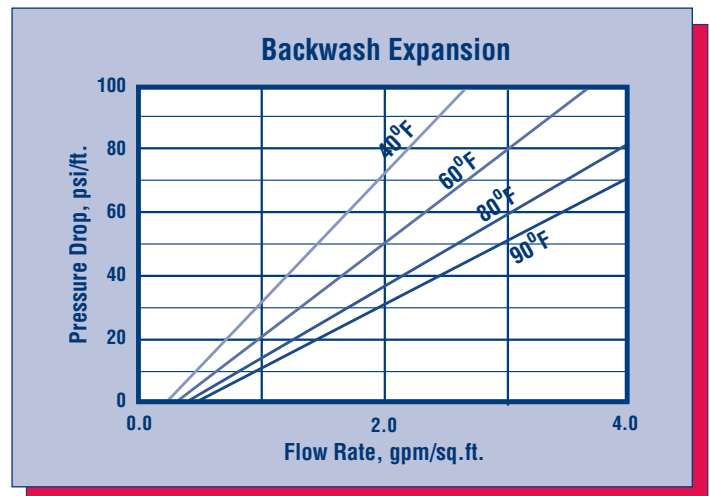
* For potable water applications the resin must be properly pre-treated, usually by multiple exhaustion cycles, to ensure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *RESINTECH SBACR* in the chloride form.

RESINTECH® SBACR

TYPICAL PROPERTIES

Polymer Structure	Acrylic Crosslinked with DVB
Functional Group	R-N-(CH ₃) _X -
Ionic Form, as shipped	Chloride or Hydroxide
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh	< 5 Percent
-50 mesh	< 1 Percent
pH Range	0 to 14
Sphericity	> 93 Percent
Water Retention Cl Form	55 to 63 Percent
Solubility	Insoluble
Approximate Shipping Weight	
Chloride Form	44 lbs/cu. ft.
Hydroxide Form	42 lbs/cu. ft.
Swelling Cl ⁻ to OH ⁻ Form	Approx. 15 Percent
Total Capacity	> 1.2 meq / mL

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Hydroxide Form	95°F
Salt form	150°F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75%
Regenerant Concentration*	2 to 6 %
Regenerant Flow Rate	0.25 to 1.0 gpm/cu. ft.
Regenerant Contact Time	At least 60 Minutes
Regenerant Level	4 to 10 lbs/cu. ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 gal/cu. ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gal/cu. ft.
Service Flow Rate	2 to 4 gpm/cu. ft.

OPERATING CAPACITY

Dealkalization - The operating capacity of ResinTech SBACR for acid removal at various regeneration levels when treating an influent with a concentration of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaOH/cu.ft.	Capacity Kilograins /cu. ft.			
	HCL	H ₂ SO ₄	H ₂ SiO ₃	H ₂ CO ₃
4	16.5	20.9	15	17.3
6	19.3	23.3	17	19.3
8	20.5	24.9	17.6	20.5
10	20.9	25.9	21	21.4

APPLICATIONS

Deminceralization – *RESINTECH SBACR* is highly recommended for use in multiple and mixed bed demineralizers, where complete ion removal and organic fouling resistance is required.

RESINTECH SBACR's high operating capacity makes it ideal for applications such as multiple bed deionization. Its higher porosity together with its acrylic structure provides an increased resistance to organic fouling compared with styrene based Type One anion resins like *RESINTECH SBG1P*.

TEMPERATURE CONSIDERATIONS

RESINTECH SBACR is highly recommended for use where the combination of carbon dioxide plus silica is less than 40% of the total anions, and where chlorides and organics represent a large portion of the ions to be removed on a regenerable basis. ResinTech SBG2 should also be considered for these applications especially if temperatures exceed 90°F on a regular basis.

Acrylic anion resins, including the Type One anion exchangers, have lower thermal and oxidation resistance than styrene based Type One or Type Two resins. *RESINTECH SBACR*'s combination of higher porosity, regeneration efficiency, and organic fouling resistance make it an excellent choice where the water temperature is always below 95°F. The physical and chemical stability of the hydroxide form of ResinTech SBACR declines rapidly at higher temperatures. Therefore, it is suggested that exposure to temperatures above 95°F be avoided when it is in the hydroxide form.

Organic Removal – *RESINTECH SBACR* has regeneration characteristics midway between *RESINTECH SBG1P* and *RESINTECH SBG2*; the major difference between them is the polymer backbone. *RESINTECH SBACR*'s greater porosity and acrylic backbone gives it fast kinetics, and improved ability to reversibly sorb naturally occurring organic ions. Therefore, in waters high in organics, *RESINTECH SBACR* may become the resin of choice. However, *RESINTECH SBG2* has equivalent fouling resistance, with higher capacity plus greater tolerance to oxidation and high temperature. We suggest you consult our technical staff for specific recommendations.

Tannin & Color Removal – Tannins and similar naturally occurring organics cause most of the color in potable waters. *RESINTECH SBACR* can be operated with salt regeneration and removes these substances. This makes it useful as an "Organic Trap" operating in front of a demineralizer to protect it from organic fouling. It also makes it useful in upgrading potable waters by removing these color-causing substances. The bulk of the color-causing substances is tannic acids that are naturally occurring organics. As an organic trap it is operated in its own vessel and regenerated with salt or a combination of salt and caustic. In tannin or color reduction applications for potable waters, it can often be placed in the same vessel as the softener. It is used as an upper layer in a sodium cycle softener filled with *RESINTECHCG8*.

***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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