United States Resin Company

P.O. Box 31219
Phoenix, Az. 85046

C-8 SF Na

STRONG ACID CATION EXCHANGE RESIN

(Designed for use in water softening applications NSF/ANSI 44/2002 Certified)

Product Description

US Resin's C-8 SF Na resin is a high-capacity, conventional gel polystyrene strong acid cation exchange resin designed for use in residential or industrial water softening equipment. **The product has been independently tested and certified by the WQA in accordance with the materials section of the "Residential Cation Exchange Water Softener," NSF/ANSI 44-2002.** Cation resin in sodium form removes hardness ions such as calcium and magnesium by replacing them with sodium. When the resin bed is exhausted the hardness ions begin to pass through the bed. Functionality is returned by regeneration with concentrated sodium or potassium chloride solution. The capacity obtained depends largely on the amount of salt used in the regeneration. Typically 15 lbs of chemical per ft3 is used to obtain maximum capacity of up to 32,000 grains per ft3.
US Resin's C-8 SF Na resin is also capable of removing in the same way dissolved iron, manganese, and also suspended matter by virtue of the filtering action of the bed.

Typical Physical, Chemical & Operating Characteristics

Polymer Structure	Polystyrene 8% cross-linked with Divinylbenzene
Physical Form and Appearance	amber spherical beads
Whole Bead Count	95% Min.
Functional Groups	Polystyrene sulfonate
Ionic Form (as shipped)	Na+
Shipping Weight, approx.	850 g/l (53 lb./ft.^{3})
Mesh Size (U.S. Std)	16-50
Moisture retention, Na+ form	45–50%
Swelling, Na+—>H+	5% max.
Total Capacity in sodium form	1.9 meq/ml (This claim has NOT been tested, certified, evaluated or approved by the WQA.)
pH Range, Stability	0–14

TESTED AND CERTIFIED Water Quality UNDER INDUSTRY STANDARDS

COMPONENT

This resin has been Certified by WQA according to NSF/ANSI 44 and NSF/ANSI 61 for materials safety only.

Complies with FDA Regulations for Potable Water Applications

Conforms to paragraph 21CFR 173.25 of the Food Additives Regulations of the F.D.A.

Complies with USDA Regulations for Potable Water Systems

Meets standards for use in systems operating under the Federal meat and poultry products inspection program.

CHEMICAL AND THERMAL STABILITY

US Resin's C-8 SF Na resin is insoluble in dilute or moderately concentrated acids, alkalies, and in all common solvents. However, exposure to >1 ppm of free chlorine, "hypochlorite" ions, or other strong oxidizing agents over long periods of time will eventually break down the cross-linking. Temperature over 30 °C (85 °F) will accelerate the oxidation. This will tend to increase the moisture retention of the resin, decreasing its mechanical strength as well as generating small amounts of extractable breakdown products. Like all conventional Polystyrene sulfonated resins, it is thermally stable to higher than 138 °C (280 °F) in the alkali (for instance, sodium) or alkaline earth (calcium and magnesium) salt forms. The free acid form tends to hydrolyze in water temperatures appreciably higher than 120 °C (250 °F) thereby losing capacity as the functional groups are gradually replaced by hydroxyl groups.

United States Resin Company

P.O. Box 31219
Phoenix, Az. 85046

C-8 SF Na

STRONG ACID CATION EXCHANGE RESIN

(Designed for use in water softening applications NSF/ANSI 44/2002 Certified)

The Sodium cycle operating capacity of United States Resin C-8 SF for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO3, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

The following table shows the hydrogen cycle relationship between operating capacity and regeneration level when using sulfuric acid as the regenerant:

Pounds H_2SO_4/cu.ft.	Capacity Kilograins /cu.ft.	
	500 ppm as $CaCO_3$ NaCl	500 ppm as $CaCO_3$ $CaCl_3$
5	19	11.5
7.5	23	12.8
10	25.3	13.6
15	28.1	14.5
20	29.7	15.0

This resin has been Certified by WQA according to NSF/ANSI 44 and NSF/ANSI 61 for materials safety only.

COMPONENT

Complies with FDA Regulations for Potable Water Applications

Conforms to paragraph 21CFR 173.25 of the Food Additives Regulations of the F.D.A.

Complies with USDA Regulations for Potable Water Systems

Meets standards for use in systems operating under the Federal meat and poultry products inspection program.