United States Resin Company

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C-SM Na

MACROPOROUS STRONG ACID CATION EXCHANGE RESIN

(Designed for use in sugar deashing, water softening and purification applications

Product Description

US Resin's C-SM Na resin is a high-capacity, macroporous 14% cross-linked polystyrene-DVB strong acid cation exchange resin designed for use in deashing and water softening and demineralization equipment. 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.

C-SM-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. Its macroporous structure provides excellent mechanical strength.

Typical Physical, Chemical & Operating Characteristics

Polymer Structure	Polystyrene cross linked with Divinylbenzene
Physical Form and Appearance	Tough spherical beads
Whole Bead Count	90% Min.
Functional Groups	Polystyrene sulfonate
Ionic Form (as shipped)	Na+ (also available in H+ form)
Shipping Weight, approx.	820 g/l (51 lb./ft.^{3})
Mesh Size (U.S. Std.)	16—50
Moisture retention, Na+ form	45–55%
Swelling, Na+—>H+	5% max.
Total Capacity in sodium form	1.75 meq/ml
pH Range, Stability	0–14

CHEMICAL AND THERMAL STABILITY

US Resin's C-SM Na resin is insoluble in dilute or moderately concentrated acids, alkalies, and in all common solvents. However, exposure to significant amounts of free chlorine, "hypochlorite" ions, or other strong oxidizing agents over long periods of time will eventually break down the crosslinking. 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 150 °C (300 °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