United States Resin Company

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A-S1M Cl

TYPE I MACROPOROUS STRONG BASE ANION EXCHANGE RESIN

(Designed for use in deashing and high purity water applications)

Product Description

US Resin's A-S1M Cl resin is a high-capacity, macroporous polystyrene Type I strong base anion exchange resin designed for use in deashing and industrial demineralization applications to remove anion impurities from water. Its macroporous matrix provides physical stability and excellent resistance to osmotic shock. It is also more resistant to organic fouling than gel or porous gel type of strong base anion resins (such as A-S1 and A-S1 P).

A-S1M Cl resin can also be used in dealkalization and demineralization in high-organic waters and heavy-metal removal applications.

Typical Physical, Chemical & Operating Characteristics

Polymer Structure	Polystyrene cross-linked with Divinylbenzene
Physical Form and Appearance	Tough amber spherical beads
Whole Bead Count	90% Min.
Functional Groups	$R\text{-}N\text{-}(CH_3)_3{}^+X^-$
Ionic Form (as shipped)	Cl^-
Shipping Weight, approx.	685 g/l (42 lb./ft.^{3})
Mesh Size (US Std.)	16-50
Moisture retention, CL^- form	50–60%
Swelling, CL^-—>OH^-	15% max.
Total Exchange Capacity when regenerated in chloride form	1.15 meq/mL
pH Range, Stability	0-14

CHEMICAL AND THERMAL STABILITY

US Resin's A-S1M Cl 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 cross-linking. 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 Type I anion resins, it is thermally stable to 100°C (212 °F) in the salt form. The hydroxide form tends to degrade in water temperatures appreciably higher than 65 °C (150 °F), thereby losing capacity as the functional groups are gradually replaced by hydroxyl groups.