

United States Resin Company

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A-S1 MN CL STRONG BASE ANION NITRATE SELECTIVE ION EXCHANGE RESIN (Designed for use in highly selective nitrate removal applications)

Product Description

US Resin's A-S1 MN CL resin is Type I highly nitrate-selective due to its unique trialkylamine functional group. In fact, it has higher affinity for monovalent anions (e.g., nitrate) than for di- or tri-valent anions. This is the opposite of the standard Type I and Type II anion resins such as US Resin's A-S1 and A-S2. In many water treatment applications, A-S1 MN is less selective for sulfate than nitrate and nitrate dumping is eliminated. Certain chemical and wastewater treatment processes require a high capacity for monovalent anions than for divalent or trivalent anions. Because of its unique nature, US Resin's A-S1 MN reverses the electro-selectivity of standard anion resins, and offers preferential removal of anions of lower valence.

Particularly, the product can be highly effective in the removal of nitrate in water and wastewater treatment applications even with the presence of high sulfates.

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	$R-N-R_3^+ X^-$
Ionic Form (as shipped)	CL ⁻
Shipping Weight, approx.	675 g/l (42 lb./ft. ³)
Mesh Size (US Std.)	16-50
Moisture retention, CL form	50 - 65%
Total Exchange Capacity	1.0 meq/mL
pH Range	0-14

CHEMICAL AND THERMAL STABILITY

US Resin's A-S1 MN 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. It is thermally stable to higher than 75 °C (170 °F) in the chloride form.