

GENERAL TECHNOLOGIES, SPC

- High-Quality Services & Products

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A307 (Formerly 201x7) - Cl TYPE I STRONG BASE ANION EXCHANGE RESIN (Designed for use in high purity water applications)

Product Description

A307(Cl) resin is a high-capacity, conventional gel polystyrene Type I strong base anion exchange resin designed for use in commercial or industrial demineralizer water equipment. The resin is typically converted to the hydroxide form (OH⁻) prior to use. The resin removes all anion ions such as sulfate, chloride, bicarbonate, and silica, by replacing them with hydroxide ions.

When the resin bed is exhausted the weakest anion ions (such as silica) begin to pass through the bed. Functionality is returned by regeneration with diluted sodium hydroxide solution. The capacity obtained depends largely on the amount of regenerant used in the regeneration and the water quality being treated. Typically 6 - 12 lbs of chemical per ft³ is used to obtain maximum capacity of up to 1.45 mmol/ml. A307 (Cl) resin can also be used in metal recovery, heavy metal removal (such as arsenic and chromium) in wastewater and groundwater treatment.

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 ⁺ (CH ₃) ₃
Ionic Form (as shipped)	Cl ⁻
Shipping Weight, approx.	710 g/l (44 lb./ft. ³)
Mesh Size (U.S. Std)	16-50
Moisture retention, Cl ⁻ form	42-48%
Swelling, Cl ⁻ to OH ⁻ , %	<20%
Total Capacity in Cl ⁻ form	>1.4 meq/ml
pH Range, Stability	0-14
Typical Backwash Velocity	1.5—2.5 gpm/ft ²
Bed Expansion during Backwash	50—75%
Specific Service Flow	1.5 gpm/ft ²
Regeneration Flow Rate	0.2—0.5 gpm/ft ²
Regenerant Contact Time	30—60 minutes
Slow Rinse Rate	0.2—0.5 gpm/ft ²
Fast Rinse Rate	2 gpm/ft ²

CHEMICAL AND THERMAL STABILITY

A307 (Cl) resin is insoluble in dilute or moderately concentrated acids, alkalis, 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. 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 gel type polystyrene Type I strong base anion resins, it is thermally stable to 90 °C (195 °F). The hydroxide form tends to degrade in water temperatures appreciably higher than 70 °C (160 °F), thereby losing capacity, as the functional groups are gradually replaced by hydroxyl groups.