

# GENERAL TECHNOLOGIES, SPC

## - High-Quality Services & Products

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### D870 - Cl

#### BORON SELECTIVE WEAK BASE ANION EXCHANGE RESIN

(Designed for selective boron removal in water and wastewater treatment applications and boron removal from brine)

#### Product Description

D870 is a macroporous polystyrenic based resin, with functional groups specially designed for the selective removal of salts of boron from aqueous solutions. It is effective for such solutions over a wide range of pH values, and over a wide range of concentrations.

D870 is ideal for cleaning wastewaters in any chemical processes where boron concentration exceeds the discharge limits. The regeneration procedures may also afford some boric acid recovery. Such discharge limits to rivers are becoming increasingly low since boron (although an essential trace element for plant growth) in excess fractions of ppm (as B) can be toxic to plants. Hence removal of boron can render waters suitable for irrigation. Boron removal capacity is typically 0.1-0.2 lbs/ft<sup>3</sup> of resin, depending on the water chemistry.

D870 may also be used to prepare boron free magnesium brine. Such brine can contain as much as 100 ppm of boron and this makes them unsuitable for electrolysis because of the coalescence of the magnesium. Reduction of the boron to less than 10 ppm in the brine of 12% MgCl<sub>2</sub> renders it suitable for electrolysis.

#### Typical Physical, Chemical & Operating Characteristics

Polymer Structure	Polystyrene cross linked with Divinylbenzene
Physical Form and Appearance	Tough spherical beads
Whole Bead Count	93% Min.
Functional Groups	N-Methyl Glucamine
Ionic Form (as shipped)	Cl <sup>-</sup>
Shipping Weight, approx.	695 g/l (43 lb./ft. <sup>3</sup> )
Mesh Size (U.S. Std)	16-50
Moisture retention, Na <sup>+</sup> form	50-60%
Total Capacity in sodium form	>0.8 meq/ml
pH Range, operating	1-13

#### CHEMICAL AND THERMAL STABILITY

D870 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. 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. The product is thermally stable to higher than 60 °C (140 °F) in the chloride form.