

United States Resin Company

2625 Redwing Road, Suite 226
Fort Collins, CO 80526

CH-5 Na

CHELATING WEAK ACID CATION EXCHANGE RESIN

(Designed for selective heavy metal removal in wastewater treatment applications)

Product Description

US Resin's CH-5 (Na form) resin is a premium grade, macroporous weak acid cation exchange resin with iminodiacetate functional groups. It is designed to chelate/remove many heavy metal cations, even in waters containing high calcium concentrations. It is suitable for use in polishing metal cations from wastewater and process water streams.

The relative affinity of US Resin's CH-5 for various divalent cations of the following metals in near neutral solutions are as follows:

Hg>Cu>V>UO₂>Pb>Ni>Zn>Co>Cd>Fe>Be>Mn>Mg>Ca>Sr>Ba

High concentrations of sulfates and chlorides or the presence of chelating or complexing agents can alter this sequence and will affect the operating capacity.

Typical Physical, Chemical & Operating Characteristics

Polymer Structure	Styrene polymer cross-linked by divinylbenzene
Physical Form and Appearance	Tough, spherical beads
Whole Bead Count	> 93%
Functional Groups	R-CH ₂ -N(CH ₂ COOH) ₂
Ionic Form (as shipped)	Na ⁺
Shipping Weight, approx.	720 g/l (45 lb/ft ³)
Mesh Size (U.S. Std.)	16-50
Moisture retention, H ⁺ form	46–52%
Total Exchange Capacity in Na form	> 1.0 meq/mL
pH Range	1—6

CHEMICAL AND THERMAL STABILITY

US Resin's CH-5 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. The product is thermally stable to higher than 100 °C (212 °F) in the sodium form and 60 °C (140 °F) in the hydrogen form.