

Nuclear Grade Mixed Bed Exchange Resin

Purolite nuclear resins are processed to the most exacting specifications. They are specially purified to ensure high percentage conversion to their regenerated form, and are offered in closely controlled particle size ranges. They meet the specifications required by major engineering companies throughout the world. Purolite NRW35 is a mixed bed with stoichiometric equivalents of the cation and anion exchange resin components, that is 34% of Purolite NRW160, and 66% of Purolite NRW600. The component resins used to manufacture Purolite NRW35 have a matrix of polystyrene: Purolite NRW600 is a high capacity strong base type 1 anion exchanger and Purolite NRW160 is a macroporous strong acid cation exchanger. The method of manufacture produces for each resin excellent kinetics of exchange together with excellent resistance to both osmotic shock and mechanical stress. PUROLITE NRW160 Typical Chemical and Physical Characteristics Polymer Matrix Macroporous polystyrene crosslinked with divinylbenzene Appearance Spherical beads Functional Groups Polystyrene sulphonate Ionic Form - as shipped Hydrogen - H+ Total Capacity (H+ Form) 2.1 eq/l min Moisture Retention (H+ Form) 43-48% Bead Size Range (microns) +1200 <2%, -420 <2% Screen Size Range (U.S. Standard Screen) 16-40 mesh, wet Reversible Swelling (Na+ @ H+) 4% Specific Gravity (H+ Form) 1.21 Temperature Limit (Na+ Form) 140°C (285°F) (H+ Form) 120°C (250°F) pH Limits None IMPURITIES in ppm = mg / dry Kg Sites in H+ Form 99.9% min Na 40 ppm max Fe 50 ppm max Heavy metals 40 ppm max Both Purolite NRW160 and Purolite NRW600 are subjected to rigorous cleaning treatments during manufacture in order to reduce the impurities to a minimum, thus producing a product of best nuclear grade quality. Hence Purolite NRW35 is delivered fully regenerated and ready for use.

Basic Features:

Application	Demineralization & Decontamination of Radioactive Elements
Polymer Structure	Gel/Macroporous polystyrene crosslinked with divinylbenzene
Appearance	Spherical beads
Functional Group	Sulphonic Acid and Type 1 Quaternary Ammonium
Ionic form as shipped	H ⁺ / OH ⁻

Typical Physical and Chemical Characteristics:

Cation Component	Macroporous strong acid cation
Anion Component	Gel strong base anion
Cation / Anion Ratio	35/65 %
Total Capacity (min.)	H ⁺ 2.20 eq/l
Total Capacity (min.)	H ⁺ 48.00 kGr/ft ³
Total Capacity (min.)	OH ⁻ 1.10 eq/l
Total Capacity (min.)	OH ⁻ 24.00 kGr/ft ³
Moisture Content	60 %
Mean Size Typical	0.65-0.90 mm

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Uniformity Coefficient (max.)		1.70
Shipping Weight (approx.)		720-750 g/l
Shipping Weight (approx.)		45-46.9 lbs/ft ³
Temp Limit	Non-Regenerable Bed	100 °C
Temp Limit	Non-Regenerable Bed	212 °F
Temp Limit	Regenerable Bed	60 °C
Temp Limit	Regenerable Bed	140 °F
pH Limits		0-14
Cationic Form (min.)		99.90 %
Anionic Form(min.)	OH ⁻	95 %
Anionic Form(max.)	CO ₃ ⁻	5 %
Anionic Form(max.)	Cl ⁻	0.10 %
Anionic Form(max.)	SO ₄ ⁻	0.30 %
Impurities Sodium (max.)		30 ppm
Impurities Iron (max.)		80 ppm
Impurities Heavy Metals		40 ppm

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