

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. They meet specifications required by major engineering companies throughout the world. Purolite NRW354 is a nuclear grade mixed bed resin with high selectivity for caesium 137 and radioactive colloids. It finds its application especially in the removal of those contaminants from cooling ponds and waste waters in nuclear power stations. The product is an equilibrium mixture (chemical equivalents) of Purolite NRW160 in the hydrogen form and Purolite NRW505 which is supplied in the hydroxide form. The mixture is capable of removing both cationic and anionic contaminants. All Purolite nuclear resins are supplied to exacting standards of high purity as given in the specifications below.

**Basic Features:**

Application	Cooling Ponds -Highly Selective for Caesium 137 and Radioactive Colloids
Polymer Structure	Macroporous polystyrene crosslinked with divinylbenzene
Appearance	Spherical beads
Functional Group	Sulphonic Acid and Type 1 Quaternary Ammonium
Ionic form as shipped	H <sup>+</sup> / OH <sup>-</sup>

**Typical Physical and Chemical Characteristics:**

Cation Component		Macroporous strong acid cation
Anion Component		Macroporous strong base anion
Cation / Anion Ratio		30/70 %
Total Capacity (min.)	H <sup>+</sup>	2.20 eq/l
Total Capacity (min.)	H <sup>+</sup>	48.00 kGr/ft <sup>3</sup>
Total Capacity (min.)	OH <sup>-</sup>	1.00 eq/l
Total Capacity (min.)	OH <sup>-</sup>	21.80 kGr/ft <sup>3</sup>
Moisture Content		60 %
Mean Size Typical		0.65-0.90 mm
Uniformity Coefficient (max.)		1.70
Shipping Weight (approx.)		700-735 g/l
Shipping Weight (approx.)		43.8-45.9 lbs/ft <sup>3</sup>
Temp Limit	Non-Regenerable Bed	100 °C
Temp Limit	Non-Regenerable Bed	212 °F

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Temp Limit	Regenerable Bed	60 °C
Temp Limit	Regenerable Bed	140 °F
pH Limits		0-14
CationicForm (min.)		99.90 %
Anionic Form(min.)	OH <sup>-</sup>	95 %
Anionic Form(max.)	CO <sub>3</sub> <sup>-</sup>	5 %
Anionic Form(max.)	Cl <sup>-</sup>	0.10 %
Anionic Form(max.)	SO <sub>4</sub> <sup>-</sup>	0.30 %
Impurities Sodium (max.)		30 ppm
Impurities Iron (max.)		80 ppm
Impurities Heavy Metals		40 ppm

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