

Nuclear Grade Macroporous Type I Strong Base Anion

Purolite NRW505/4502 is an ultrapure version of the anion exchanger of type Purolite A- 500 OH. It has been specially developed for processes using mixed bed and counter-flow regeneration techniques; the derived mixed bed material, Purolite NRW40, which is a 40 : 60 (cation : anion, by volume) mixture, is used for many nuclear and ultra-pure water applications where either regenerable or non-regenerable modes may be appropriate, to provide treated solutions of ultra-high purity. It is particularly resistant to both mechanical and osmotic shock. Where regeneration is employed, it may not be possible to achieve the level of treated water purity obtained for the as supplied resin. In the as supplied (highly regenerated) state, its advantages lie in the areas of high operating capacity and also high selectivity for mineral anions, such as chloride, even as the molar fraction loaded increases.

Basic Features:

Application	Removal of Boric Acid and Radioactive Isotopes
Polymer Structure	Macroporous polystyrene crosslinked with divinylbenzene
Appearance	Spherical beads
Functional Group	Type 1 Quaternary Ammonium
Ionic form as shipped	OH ⁻

Typical Physical and Chemical Characteristics:

Total Capacity (min.)	OH ⁻	0.90 eq/l
Total Capacity (min.)	OH ⁻	19.70 kGr/ft ³
Moisture Retention	Cl ⁻	53-58 %
Mean Size Typical		0.65-0.90 mm
Uniformity Coefficient (max.)		1.70
Swelling (max.)	Cl ⁻ → OH ⁻	20 %
Specific Gravity		1.07 g/ml
Shipping Weight (approx.)		680-720 g/l
Shipping Weight (approx.)		42.5-45 lbs/ft ³
Temp Limit Non-Regenerable	OH ⁻	100 °C
Temp Limit Non-Regenerable	OH ⁻	212 °F
Temp Limit Regenerable	OH ⁻	60 °C
Temp Limit Regenerable	Cl ⁻	140 °F
pH Limits		0-14

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Ionic Form (min.)	OH ⁻	95 %
Ionic Form (max.)	CO ₃ ⁻	5 %
Ionic Form (max.)	Cl ⁻	0.10 %
Ionic Form (max.)	SO ₄ ⁻	0.30 %
Impurities Sodium (max.)		20 ppm
Impurities Iron (max.)		100 ppm
Impurities Heavy Metals(max.)		30 ppm

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