

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. All products in the Purolite range have whole perfect beads typically over 95%. They meet the specifications required by major engineering companies throughout the world. Purolite's nuclear products are used in the production of ultra pure water, preparation of condensate, radiation waste treatment and in the manufacture and purification of pharmaceutical products. Mixed bed resins are frequently used in polishers following other types of water treatment. The high product quality ensures that it is possible to achieve treated water of the highest purity. The component resins of Purolite NRW40, Purolite NRW505 (macroporous strong base type 1 anion exchanger) and Purolite NRW100 (strong acid cation exchanger) are combined in the ratio, which for general types of water to be treated yields the optimum exchangeable capacity. Other ratios are available on request. Purolite mixed bed resins can be used for both regenerable or non-regenerable (cartridge) systems. Purolite NRW-40 can be used in the demineralization and decontamination of radioactive effluents.

Basic Features:

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|-----------------------|---|
| Application | Demineralization & Decontamination of Radioactive Effluents |
| 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 | Gel strong acid cation | |
| Anion Component | Macroporous strong base anion | |
| Cation / Anion Ratio | 40/60 % | |
| Total Capacity (min.) | H ⁺ | 1.80 eq/l |
| Total Capacity (min.) | H ⁺ | 39.30 kGr/ft ³ |
| Total Capacity (min.) | OH ⁻ | 1.00 eq/l |
| Total Capacity (min.) | OH ⁻ | 21.80 kGr/ft ³ |
| Moisture Content | 60 % | |
| Mean Size Typical | 0.65-0.90 mm | |
| Uniformity Coefficient (max.) | 1.70 | |
| Shipping Weight (approx.) | 715-750 g/l | |
| Shipping Weight (approx.) | 44.7-46.9 lbs/ft ³ | |

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|--------------------------|------------------------------|---------|
| 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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