

Macroporous Weak Base Anion Exchange Resin

Purolite A100DL is a macroporous poly(vinylbenzyl) tertiary amine type exchange resin. It is especially designed to be used in a layered bed in conjunction with Purolite A400DL or Purolite A500DL in a single vessel. The specially tailored particle size ranges of both resins together with their density differences are designed to maintain separate resin layers at all times. The combination of resins with both strong and weak functionality offers removal of both mineral acids (by the weakly functional resin) and silica plus bicarbonates (by the strongly functional resin). Minimal quantities of caustic soda are required because of the excellent regeneration efficiency of the weakly functional resin. Regeneration up-flow first contacts the strongly functional resin. This contact with high purity regenerant affords excellent removal of the weakly functional anions together with those mineral acids allowed to over-run the weakly basic resin. When the regenerant contacts the top layer of weakly functional resin it is partially exhausted. However, it is not necessary to have pure regenerant to achieve an efficient regeneration of the weakly functional resin. Thus the Ddual layer system offers excellent treated water quality combined with most efficient use of regenerant. Because of its structure, Purolite A100DL has excellent mechanical and osmotic stability, and is able to remove high molecular weight organic materials from the influent water, thus protecting a following strong-base resin from fouling. The organics are readily eluted, and the regenerated resin shows good rinse behaviour, and a very acceptable operating capacity on relatively high-TDS waters.

**Basic Features:**

Application	Demineralization - Layered Bed
Polymer Structure	Macroporous polystyrene crosslinked with divinylbenzene
Appearance	Spherical beads
Functional Group	Tertiary Amine
Ionic form as shipped	Free Base

**Typical Physical and Chemical Characteristics:**

Total Capacity (min.)	Free Base	1.30 eq/l
Total Capacity (min.)	Free Base	28.38 kGr/ft <sup>3</sup>
Moisture Retention	Cl <sup>-</sup>	53-60 %
SBC		10-20 %
Mean Size Typical		0.45-0.55 mm
Uniformity Coefficient (max.)		1.40
Reversible Swelling (max.)	FB → Cl <sup>-</sup>	20 %
Specific Gravity		1.04 g/ml
Shipping Weight (approx.)		645-665 g/l
Shipping Weight (approx.)		40.3-41.6 lbs/ft <sup>3</sup>

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Temp Limit	OH <sup>-</sup>	60 °C
Temp Limit	OH <sup>-</sup>	140 °F
Temp Limit	Cl <sup>-</sup>	100 °C
Temp Limit	Cl <sup>-</sup>	212 °F
pH Limits		0-14 (Stability)
pH Limits	H <sup>+</sup>	0-9 (Operating)

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