

Gel Type Weak Acid Cation Exchange Resin

Purolite C104 is a gel-type polyacrylic weak acid cation exchanger. The functional groups of the carboxylic type give high chemical efficiency in many applications, especially for the removal of bicarbonate alkalinity in water treatment, showing good rates of exchange. Its major use is in the dealkalization and softening of waters and thereby the ionic load on the subsequent strong acid resin bed can be reduced. Because it has a lower density than the conventional strong acid resins, Purolite C104 is ideal for use in layered beds (Doublite) which can be economically regenerated by an upflow countercurrent technique. This product has also been used to selectively recover transition metals from aqueous solutions. The resin is insoluble in acids, alkalies, and all common solvents. Its physical characteristics are outstanding, and often permit its use where a macroporous resin might otherwise be indicated. Hence Purolite C104 may be operated successfully at relatively high temperatures, e.g. in sugar treatment. However, the macroporous polyacrylic weak acid cation exchanger Purolite C106 is generally recommended where it is required to work between the acid and the highly-swollen alkali salt form (for example in the treatment of ammoniacal condensate waters or high solids softening). Weakly acidic cation resins are increasingly being used in special applications including treatment of waste water streams in order to reduce environmental pollution

**Basic Features:**

Application	Dealkalization; Deionization; Softening - High Capacity, Hydrometallurgy
Polymer Structure	Gel polyacrylic crosslinked with divinylbenzene
Appearance	Spherical beads
Functional Group	Carboxylic Acid
Ionic form as shipped	H <sup>+</sup>

**Typical Physical and Chemical Characteristics:**

Total Capacity (min.)	H <sup>+</sup>	3.80 eq/l
Total Capacity (min.)	H <sup>+</sup>	82.97 kGr/ft <sup>3</sup>
Moisture Retention	H <sup>+</sup>	45-55 %
Mean Size Typical		0.60-0.85 mm
Uniformity Coefficient (max.)		1.70
Reversible Swelling (max.)	H <sup>+</sup> → Na <sup>+</sup>	85 %
Reversible Swelling (max.)	H <sup>+</sup> → Ca <sub>2</sub> <sup>+</sup>	20 %
Reversible Swelling (Operating)	H <sup>+</sup> → Ca <sub>2</sub> <sup>+</sup>	7 % (approx.)
Specific Gravity		1.18 g/ml

USA  
Telephone: (1) 610-668-9090  
Fax: (1) 610-668-8139  
Email: info@puroliteusa.com

Europe  
Telephone: +44 1443 229334  
Fax: +44 1443 227073  
Email: sales@purolite.com

Asia Pacific  
Telephone: +86 571 876 31385  
Fax: +86 571 876 31385  
Email: pultalan@purolitechina.com

Shipping Weight (approx.)		735-770 g/l
Shipping Weight (approx.)		46-48 lbs/ft <sup>3</sup>
Temp Limit	H <sup>+</sup>	120 °C
Temp Limit	H <sup>+</sup>	250 °F
pH Limits		0-14

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