A-555

MACROPOROUS TYPE-III STRONG-BASE ANION-EXCHANGE RESIN (FOR THE TREATMENT OF WATER)

Product Description

Purolite A-555 is a Type III macroporous strong base anion resin with a specialized functional group consisting of polyvinylbenzyl-dimethypropanolamine.

Its specialized structure results in excellent resistance to osmotic and thermal shock, while providing high operating capacity on most naturally-encountered feedwaters. It can be favorably compared with many Type-II macroporous resins in this respect.

It also has high reversible sorptive capacity for silica, plus complex organic materials, both ionized and non-ionized, which occur in many surface water supplies.

Its particular advantages over Type-II resins are its silica removal performance equal to that of a type -I resin, and its superior thermal stability. It shows low thermal degradation for temperatures up to 55°C., and it can be used successfully where an acrylic Type-I resin would fail. Also it has a superior regenerability to a conventional Type-I exchanger.

It may be used with excellent results under various ion-exchange column conditions, but is particularly suitable for operating in higher than average ambient temperatures where Type-II resins are barely suitable. High flowrate deionizing, continuous ion-exchange treatment processes, and especially counterflow regeneration systems, which result in more efficient use of regenerant, may be used. In fact it is the only anion exchange resin type that does not suffer from any significant drawback in most water applications. Like most other Purolite resins Purolite A-555 is available in a range of particle size distributions tailored for specific applications. Please refer to the resin characteristics summary brochure for the names, applications, and specifications.

Typical Chemical & Physical Characteristics	
Polymer Matrix Structure	Macroporous Styrene-divinylbenzene
Physical Form and Appearance	Opaque near-white spheres
Whole Bead Count	>95%
Functional Groups	Type - III
Ionic Form (as Shipped)	Cl–form
Shipping Weight g/L, (lb/ft3)	670-700, [42-43.8]
Screen Size Range British Standard Screen	14-52 mesh, wet
U S Standard Screen	16-50 mesh wet
Particle Size Range (microns)	+1200 <5%-300 <1%
Moisture Retention, Cl^- form	48-54%
Reversible Swelling ($Cl^- \rightarrow OH^-$)	15%
Specific Gravity, Moist Cl^- Form	1.08
Total Exchange Capacity, Cl^- form(wet,volumetric)	1.2 meq./mL, min. .
(dry, weight)	3.5 meq./g., min.
Max. Operating Temperature, Cl^- form	100°C, [212°F]
OH^- form	55°C , [130°F]
pH Range (Stability), Cl^- Form	0-14
Operating), OH^- Form	0-11

CHEMICAL STABILITY

PUROLITE A-555 is insoluble in acids, alkalies and all common solvents. Most salt forms are thermally stable up to 100°C, 212°F. As with all conventional strong base anion resins, the hydroxide form is less stable. However, in this respect it is almost equivalent to most other macroporous polystyrenic Type-I resins despite the fact that a much higher proportion of sites are typically in the hydroxide form after regeneration. It should also be noted that as is usual for ion exchange resins continued exposure to strong oxidizing agents can lead to irreversible loss of exchange capacity as the result of ongoing chemical reaction, and should be avoided.

STANDARD OPERATING CONDITIONS

Please refer to the full engineering bulletin on Purolite A-555 for more detailed information.