PUROLITE
ION EXCHANGE RESINS

Product Data Sheet

PUROLITE® A170/4675

Weak Base Anion Macroporous

For sorption of anionic heavy metals

Purolite A170/4675 is a macroporous weakly basic anion resin crosslinked with divinylbenzene that is tailored for sorption of anionic forms of heavy metals from acidic processing solutions. It shows excellent mechanical strength and a resistance to osmotic and thermal shock. The macroporous matrix and ion exchange group functionality imparts an especially high selectivity for the more hydrophobic anions that generally have high molecular weight.

High efficiency of this resin is proven in application of this resin for recovery of rhenium from rinsing or scrubbing sulfuric acid at roasting of molybdenum or smelting of copper concentrates as well as from other acidic industrial streams. High performance of the resin is achieved for recovery of molybdenum from sulfuric acid solutions.

The selective removal mentioned is even possible in the presence of higher concentrations of other anions such as sulfate that can compete with the traces of said anions for the selective sites.

Suggested Operating Conditions

Specific application of the Purolite A170/4675 is recovery of rhenium and molybdenum from the sulfuric solutions which solutions are very common in production of molybdenum and copper. The A170/4675 has superior selectivity towards perrhenate and molybdate anions.

Concentration of rhenium or molybdenum in the feed solution can be in range 1 to 1000 ppm while concentration of sulfuric acid can be 5 to 500 g/L. Feed linear velocity can be 7 to 15 m/hour in most cases. It is recommended to convert the resin in sulfate form partially or fully before sorption stage. Efficient desorption of rhenium and molybdenum can be done by 5 – 25% aqueous ammonia.

Basic Features:

Application	
Polymer Structure	Macroporous polystyrene with divinylbenzene
Appearance	Spherical Beads
Functional Group	Weak Base Complex Amine
Ionic form as shipped	Free Base

Typical Physical and Chemical Characteristics:

Total Capacity (min.)	Free Base	1.25 eq/l
Moisture Retention	Free Base	40 - 45 %
Mean Size Typical		0.6 - 1.18 mm
Reversible Swelling (max.)	FB → Cl^-	20 %
Specific Gravity		1.05 g/ml
Shipping Weight (approx.)		41 - 43 lbs/ft^3

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pH Limits	0 - 14 (Stability)
pH Limits (sorption)	1 - 6
pH Limits (desorption)	9 - 14

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