AMBERSEP™ GT74

Industrial Grade Complexing Resin

Introduction

AMBERSEP GT74 is a weakly acidic cation exchange resin with very pronounced selectivity for certain metal ions, e.g. rhodium, copper, silver, cadmium and lead. AMBERSEP GT74 has been developed for the removal of Hg from different solutions and gaseous streams and can be regenerated very efficiently with hydrochloric acid.

The selectivity sequence is :
Hg > Ag > Cu > Pb > Cd > Ni > Co > Fe > Ca > Na

AMBERSEP GT74 is insoluble in common solvents and stable over the entire pH range. Oxidizing media should be avoided. The special properties of AMBERSEP GT74 can be useful for problems where removal of metal ions Cu, Ag, Pb, Cd is desired. Applications may be found in different fields of chemical technology such as waste water treatment, recovery of solutions and metals in the plating industry, recovery of catalysts and removal of interfering ions in hydrometallurgy.

Properties

Matrix	Macroporous styrene copolymer
Functional groups	Thiol
Physical form	Beads
Ionic form as shipped	H
Total exchange capacity	≥ 1.30 eq/L (SH form)
Moisture holding capacity	48 to 55 % (H form)
Shipping weight	785 g/L (49.0 lb/ft^3)
Particle size	
Harmonic mean size	0.450 - 0.700 mm
Uniformity coefficient	≤ 1.8
Fines content	< 0.425 mm : 12 % max
Coarse beads	> 0.850 mm : 15 % max

Suggested Operating Conditions

Maximum operating temperature	60°C (140 °F)
Minimum bed depth	1 m (39 inches)
Service flow rate	10 BV/h (1.25 gpm/ft^3)
Regenerant	Concentrated hydrochloric acid
Rinse requirements	2 to 3 BV* (15 to 22.5 gal/ft^3)
Backwash flow rate	About 12 m/h (5 gpm/ft^2)with water at 20°C (68 °F)

** 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin*

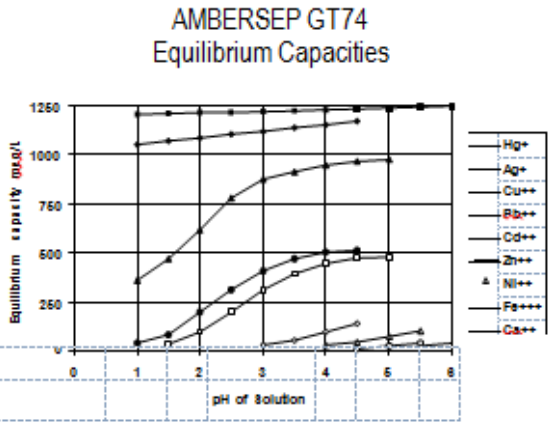
Selectivity

The high selectivity of AMBERSEP GT74 for certain metals is shown in the graph below as a function of pH. All data were determined in a normal solution of $NaNO_3$. The resin has a pronounced preference for copper, lead and cadmium ions, which are removed in considerable quantities, even from solutions containing only 1 meq/L of metal and a large excess of Na^+ ions. The data indicate the possibility of selective separation of these metals.

The solution passes a column of AMBERSEP GT74 at a flow rate of 15 m/h (6gpm/ft^2). The effluent contains less than 0.01 ppm Pb. After passage of 700 bed volumes of the solution the effluent composition was still unchanged.

Influent composition

• Pb^{++}	6 ppm
• Sb^{+++}	0.3 ppm
• Na^{+}	100 ppm
• pH	2.5



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