



AMBERLITE[®] IRC747UPS

Industrial Grade Chelating Resin

Introduction

AMBERLITE IRC747UPS is a uniform particle size resin of macroporous structure. The narrow particle size distribution affords a pressure drop profile that is superior to that of a conventional resin. Its polystyrenic matrix, crosslinked with DVB, contains amino-phosphonic groups. The chemical nature of these groups is such that they form complexes with metal ions.

The operating capacity for Calcium can be 20 % more than, and the capacity for Strontium and Barium as much as double, that for Duolite C467. This brings improved cycle times, especially for brine with higher Sr content.

Properties

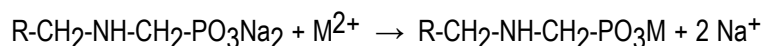
Matrix	Styrene divinylbenzene copolymer
Functional groups	-CH ₂ -NH-CH ₂ -PO ₃ Na ₂
Physical form	Beige beads
Ionic form as shipped	Na ⁺
Total exchange capacity	≥ 1.75 eq/L (Na ⁺ form)
Moisture holding capacity	64 to 69 % (Na ⁺ form)
Specific gravity	1.10 to 1.14 (Na ⁺ form)
Shipping weight	755 g/L (47.1 lb/ft ³)
Harmonic mean size	550 ± 50 μm
Uniformity coefficient	≤ 1.20
Maximum reversible swelling	H ⁺ → Na ⁺ : 45 %

Suggested Operating Conditions

Maximum operating temperature	80°C (175 °F)
Minimum bed depth	700 mm (28 inches)
Service flow rate	up to 40 BV/h (5 gpm/ft ³)
Regeneration	HCl (1N to 2N)
Conversion to Na ⁺ form	NaOH (1N to 2N)
Operating pH	Function of applications

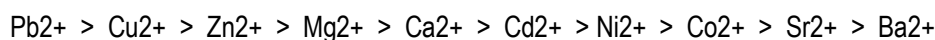
Performance

Characteristic Reaction



Relative affinity

The relative affinity of this resin for the various cations decreases in the order shown below :



Operating range

The resin can operate in a neutral, acidic or alkaline medium, but since its capacity depends on the pH, we recommend the following minimum pH values.

pH minimum	2	2.5	3	4.5
Cations	Cu ²⁺	Zn ²⁺	Cd ²⁺	Mg ²⁺
	Pb ²⁺		Ca ²⁺	Ni ²⁺
				Co ²⁺

Applications

Brine Purification

AMBERLITE IRC747UPS is a very efficient resin for the removal of Ca, Mg, and other metals present in trace quantities (a few ppm) in concentrated brine, e.g. chlor-alkali electrolysis.

Zinc separation

Separation of zinc from media in which this metal is present (corrosion preventive products in cooling towers).

Lead separation

Separation of lead from industrial effluents (oil refinery and battery factory wastes, solvents and wastes from the manufacture of paints and printing inks)

Limits of use

AMBERLITE IRC747UPS is suitable for industrial uses. For specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Rohm and Haas in order to determine the best resin choice and optimum operating conditions.

Hydraulic Characteristics

Figure 1 shows the bed expansion of AMBERLITE IRC747UPS as a function of backwash flow rate.

Figure 2 provides the pressure drop profile for AMBERLITE IRC747UPS in brine.

Figure 1: Expansion curves (22°C)
(d = density of backwash liquid)

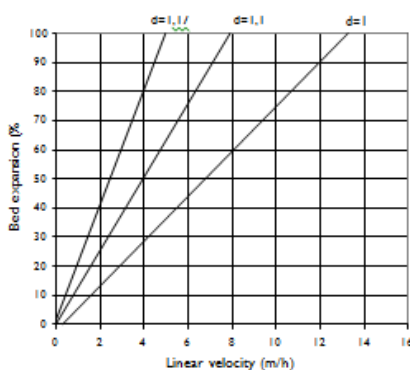
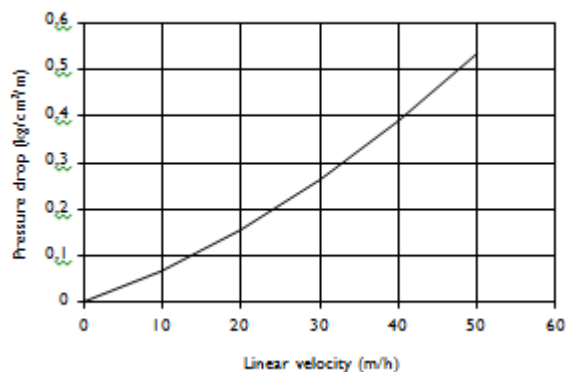


Figure 2: Pressure Drop in Brine (40°C)



For more information about DOW™ resins, call the Dow Water & Process Solutions business:

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