

AMBERLITE® IRC747

Industrial Grade Chelating Resin

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PRODUCT DATA SHEET

AMBERLITE IRC747 is a resin of macroporous structure. Its polystyrenic matrix, crosslinked with DVB, contains aminophosphonic 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] _____	≥ 1.75 eq/L (Na ⁺ form)
Moisture holding capacity ^[1] _____	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 _____	0.520 - 0.660 mm
Uniformity coefficient _____	≤ 1.8
Fine contents ^[1] _____	< 0.300 mm : 2.0% max
Coarse beads _____	> 1.000 mm : 5.0% max
Maximum reversible swelling _____	H ⁺ → Na ⁺ : 45 %

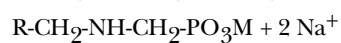
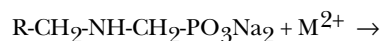
^[1] Contractual value

Test methods are available on request

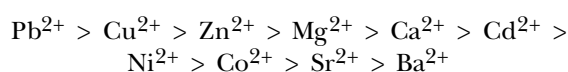
SUGGESTED OPERATING CONDITIONS

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

* 1 BV (Bed Volume) = 1 m³ solution per m³ resin

PERFORMANCE**Characteristic Reaction****RELATIVE AFFINITY**

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



OPERATING pH 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⁺ Pb ²⁺	Zn ²⁺	Cd ²⁺ Ca ²⁺	Mg ²⁺ Ni ²⁺ Co ²⁺

APPLICATIONS

Brine Purification

AMBERLITE IRC747 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)

HYDRAULIC CHARACTERISTICS

Figure 1 shows the bed expansion of AMBERLITE IRC747 as a function of backwash flow rate and temperature.

Figure 1 : % Bed Expansion in Water

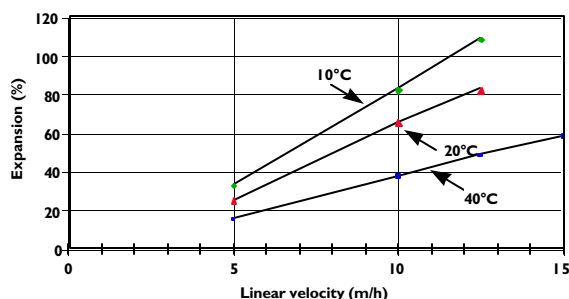
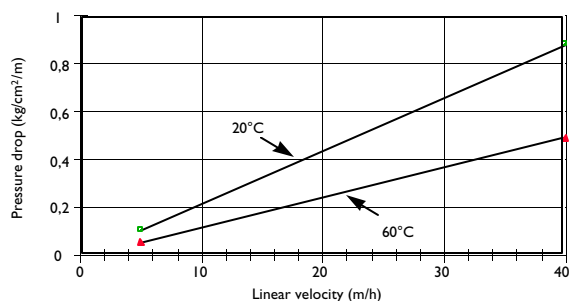


Figure 2 provides the pressure drop profile for AMBERLITE IRC747 in brine.

Figure 2 : Pressure Drop in Brine



LIMITS OF USE

AMBERLITE IRC747 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.

All our products are produced in ISO 9002 certified manufacturing facilities.

ROHM and HAAS

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Ion exchange resins and polymeric adsorbents, as produced, contain by-products resulting from the manufacturing process. The user must determine the extent to which organic by-products must be removed for any particular use and establish techniques to assure that the appropriate level of purity is achieved for that use. The user must ensure compliance with all prudent safety standards and regulatory requirements governing the application. Except where specifically otherwise stated, Rohm and Haas Company does not recommend its ion exchange resins or polymeric adsorbents, as supplied, as being suitable or appropriately pure for any particular use. Consult your Rohm and Haas technical representative for further information. Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Nitric acid and other strong oxidising agents can cause explosive type reactions when mixed with Ion Exchange resins. Proper design of process equipment to prevent rapid buildup of pressure is necessary if use of an oxidising agent such as nitric acid is contemplated. Before using strong oxidising agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

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