



# AMBERLITE® IRA67RF

Industrial Grade Weak Base Anion Exchanger

## PRODUCT DATA SHEET

AMBERLITE IRA67RF is a weak base anion exchange resin with a gel type acrylic matrix. It has a high capacity, excellent physical stability, fast kinetics, outstanding resistance to organic fouling and a basicity higher than that of polystyrenic weak base resins. Due to its excellent organic reversibility, AMBERLITE IRA67RF is successfully used to demineralise surface waters containing high amounts of

organic matter. It is also used in many other applications including deionization of citric acid, whey, gelatine, acid removal from formaldehyde, purification of antibiotics, etc...The particle size distribution of AMBERLITE IRA67RF has been specifically selected to give optimum performance in packed and floating bed applications.

### PROPERTIES

Matrix	Crosslinked acrylic gel structure
Functional groups	Tertiary amines
Physical form	Transparent white beads
Ionic form as shipped	Free Base (FB)
Total exchange capacity <sup>[1]</sup>	≥ 1.6 eq/L (FB form)
Moisture holding capacity <sup>[1]</sup>	56 to 64 % (FB form)
Specific gravity	1.030 to 1.090 (FB form)
Shipping weight	700 g/L
Particle size	
Uniformity coefficient	≤ 1.70
Harmonic mean size	700 - 950 µm
Fine contents <sup>[1]</sup>	< 0.355 mm : 0.5 % max
Coarse beads	> 1.180 mm : 5 - 25 % max
Maximum reversible swelling	FB → Cl <sup>-</sup> : 30 %

<sup>[1]</sup> Contractual value

Test methods are available on request.

### SUGGESTED OPERATING CONDITIONS (WATER TREATMENT)

Minimum bed depth	700 mm
Service flow rate	5 to 40 BV*/h
Regenerant	NaOH
Flow rate	2 to 8 BV/h
Concentration	2 to 4 %
Level	130 % of ionic load
Minimum contact time	30 minutes
Slow rinse	2 BV at regeneration flow rate
Fast rinse	8 to 16 BV at 10 BV/h

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin

## PERFORMANCE (For Water Treatment)

### Operating capacity

The actual exchange capacity of AMBERLITE IRA67RF depends on a number of factors :

- composition of water (particularly CO<sub>2</sub> and SO<sub>4</sub> content),
- specific flow rate,
- ionic load.

AMBERLITE IRA67RF offers an operating capacity 15 to 30 % higher than that of usual polystyrenic resins.

The engineering data sheet EDS 0254 A provide information to calculate the operating capacity of AMBERLITE IRA67RF used in water treatment.

### Regeneration

Optimum regeneration conditions correspond to a quantity of caustic soda equivalent to 120 to 140 % of the operating capacity. It is not recommended to use higher regeneration ratios, as the excess caustic soda might lead to an increase of the rinse water volume required. The latter can be minimised by recycling the rinse effluent through the upstream cation exchange resin.

### Organic matter

The aliphatic structure of AMBERLITE IRA67RF gives it less affinity for aromatic organic acids found in surface waters than that of polystyrene resins. However, this weaker affinity is more than offset by fast exchange kinetics and guarantees a total elution of the organic fixed on the resin. Therefore, AMBERLITE IRA67RF offers a large reversible capacity for the removal of organic matter.

## HYDRAULIC CHARACTERISTICS

AMBERLITE IRA67RF gives a pressure drop of about 10 kPa/m bed depth per 10 m/h at 15°C.

A backwash flow rate of 6.5 m/h gives a bed expansion of about 65 % at 15°C.

These data are valid for water treatment and have to be corrected according to the solution to be treated.

## FOOD PROCESSING

Rohm and Haas manufactures special resins for food processing and potable water applications. As governmental regulations vary from country to country, it is recommended that potential users seek advice from their Amberlite representative in order to determine the best resin choice and optimum operating conditions.

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

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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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