



# IMAC<sup>®</sup> HP555

Strongly Basic Anion Exchange Resin

## PRODUCT DATA SHEET

IMAC HP555 is a macroporous strongly basic anion exchange resin containing quaternary ammonium groups. It has been specially developed for selective nitrate removal from

potable waters in any types of units, including Amberpack<sup>®</sup>. Indeed, IMAC HP555 removes nitrate preferentially to sulphate.

### PROPERTIES

Matrix _____	Styrene divinylbenzene copolymer
Functional groups _____	Quaternary ammonium
Physical form _____	Cream beads
Ionic form as shipped _____	Chloride
Total exchange capacity <sup>[1]</sup> _____	≥ 0.9 eq/L (Cl <sup>-</sup> form)
Moisture holding capacity <sup>[1]</sup> _____	50 to 56 % (Cl <sup>-</sup> form)
Shipping weight _____	720 g/L
Specific gravity _____	1.055 to 1.085 (Cl <sup>-</sup> form)
Particle size _____	
Harmonic mean size _____	650 to 850 µm
Uniformity coefficient _____	≤ 1.5
Fines content <sup>[1]</sup> _____	< 0.300 mm : 0.3 % max
Coarse beads _____	> 1.180 mm : 5.0 % max
Reversible swelling _____	Cl <sup>-</sup> → NO <sub>3</sub> <sup>-</sup> : negligible

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

Test methods available upon request

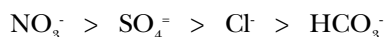
### SUGGESTED OPERATING CONDITIONS

Maximum operating temperature _____	80°C (Cl <sup>-</sup> form)
Minimum bed depth _____	700 mm
Service flow rate _____	5 to 40 BV*/h
Maximum linear velocity _____	50 m/h
Regenerant _____	NaCl
Level _____	125 to 250 g/L
Flow rate _____	2 to 8 BV/h
Concentration _____	5 to 10 %
Minimum contact time _____	30 minutes
Slow rinse _____	2 to 5 BV
Fast rinse _____	2 to 8 BV

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

## APPLICATIONS

The use of IMAC HP555 is specially recommended in the case of waters containing more sulphate than nitrate. In such a case, its operating capacity is higher than that of conventional resins. It is due to the relative affinities towards anions which are as follows :



Another consequence is that the nitrate level after breakthrough will never be higher in the effluent than in the influent.

## QUALITY CONTROL

All IMAC HP resins are manufactured and purified specially for use in non industrial applications. Every batch of IMAC HP555 is analysed to ensure its compliance with high purity specifications, in particular :

- Physical and chemical properties,

- Individual release of certain substances in the treated water,
- Global release of organic substances expressed in TOC (Total Organic Carbon),
- Total microbial count.

## COMMISSIONING

IMAC HP555 is ready to use\* : all that is required at the time of commissioning is to perform a full regeneration cycle followed by a rinse with at least 20 bedvolumes of water.

This is valid only if :

1. the resin is stored at a temperature of less than 25°C and protected from UV radiations,
2. the storage time between production date (printed on the bags) and final use does not exceed 6 months.

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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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