



# AMBERJET<sup>®</sup> 4400 Cl

Industrial Grade Strong Base Anion Exchanger

## PRODUCT DATA SHEET

AMBERJET 4400 Cl is a uniform particle size, strongly basic anion exchange resin of the type 1 with a clear gel structure, based on crosslinked polystyrene. It has a higher capacity and lower moisture holding than AMBERJET 4200 Cl. Due to a new manufacturing technology, AMBERJET 4400 Cl has an excellent rinse performance and

an outstanding physical stability, illustrated by its very high bead integrity and its resistance to osmotic shock and mechanical stress.

AMBERJET 4400 Cl is a very versatile product and can be used in many applications, including condensate polishing (see details on page 2).

### PROPERTIES

Matrix _____	Styrene divinylbenzene copolymer
Functional groups _____	-N <sup>+</sup> (CH <sub>3</sub> ) <sub>3</sub>
Physical form _____	Insoluble light amber beads
Ionic form as shipped _____	Cl <sup>-</sup>
Total exchange capacity <sup>[1]</sup> _____	≥ 1.40 eq/L (Cl <sup>-</sup> form)
Moisture holding capacity <sup>[1]</sup> _____	40 to 48 % (Cl <sup>-</sup> form)
Specific gravity _____	1.075 to 1.110 (Cl <sup>-</sup> form)
Shipping weight _____	730 g/L
Harmonic mean size _____	580 ± 50 µm
Uniformity coefficient <sup>[1]</sup> _____	≤ 1.2
Fines content <sup>[1]</sup> _____	< 0.425 mm : 0.5 % max
Maximum reversible swelling _____	Cl <sup>-</sup> → OH <sup>-</sup> : 30 %

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

Test methods available upon request

### SUGGESTED OPERATING CONDITIONS (WATER TREATMENT)

Maximum operating temperature _____	60°C
Minimum bed depth _____	800 mm
Service flow rate _____	5 - 50 BV*/h for make-up water 30 - 120 BV/h for condensate polishing
Maximum service velocity _____	60 m/h for make-up water 120 m/h for condensate polishing
Regenerant flow rate _____	2 to 8 BV/h
Regenerant concentration _____	2 to 5 % NaOH
Regenerant level _____	40 to 100 g/L 80 to 200 g/L for condensate polishing
Minimum contact time _____	20 minutes
Slow rinse _____	2 BV <sub>i</sub> at regeneration flow rate
Fast rinse _____	3 to 6 BV at service flow rate

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

## APPLICATIONS

AMBERJET 4400 Cl can be used in a variety of applications, including packed bed, stratified bed and mixed bed units. In condensate polishing mixed beds, it can be operated at very high flow rates, up to about 120 BV/h. The particle size of Amberjet 4400 Cl has been specifically designed for use in mixed bed units with Amberjet 1600 H or Amberjet 1500 H and in stratified beds with Amberlite IRA96SB.

## LIMITS OF USE

AMBERJET 4400 Cl is suitable for industrial uses. For all other 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 (Water Treatment)

Figure 1 shows the bed expansion of AMBERJET 4400 Cl as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for AMBERJET 4400 Cl, as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with a clear water and a correctly classified bed.

Fig. 1 : Bed Expansion

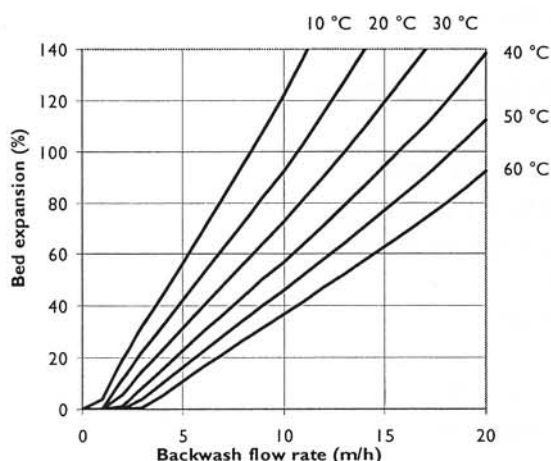
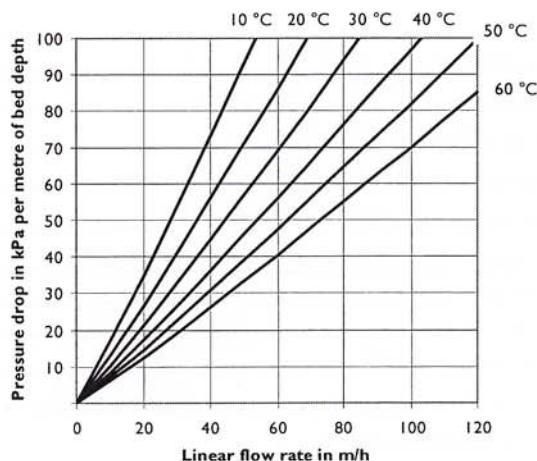


Fig. 2 : Pressure Drop



Rohm and Haas/Ion Exchange Resins - Philadelphia, PA - Tel. (800) RH AMBER - Fax: (215) 409-4534  
Rohm and Haas/Ion Exchange Resins - 75579 Paris Cedex 12 - Tel. (33) 1 40 02 50 00 - Fax : 1 43 45 28 19

WEB SITE: <http://www.rohmhaas.com/ionexchange>



AMBERJET is a trademark of Rohm and Haas Company, Philadelphia, U.S.A.

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.

Rohm and Haas Company makes no warranties either expressed or implied as to the accuracy of appropriateness of this data and expressly excludes any liability upon Rohm and Haas arising out of its use. We recommend that the prospective users determine for themselves the suitability of Rohm and Haas materials and suggestions for any use prior to their adoption. Suggestions for uses of our products of the inclusion of descriptive material from patents and the citation of specific patents in this publication should not be understood as recommending the use of our products in violation of any patent or as permission or license to use any patents of the Rohm and Haas Company. Material Safety Data Sheets outlining the hazards and handling methods for our products are available on request.