

AMBERSEP™ 900 SO₄ Resin

Industrial Grade Strong Base Anion Exchanger

Description

AMBERSEP™ 900 SO₄ Resin is a macroreticular polystyrene type 1 strong base anion exchange resin containing quaternary ammonium groups. This resin allows removal of anions, including weakly dissociated ones like silica. In addition the macroreticular structure imparts excellent resistance to mechanical and osmotic shock. AMBERSEP 900 SO₄ Resin has been specially developed for use in mixed bed applications. Due to its excellent mechanical strength and good kinetics, it is particularly recommended for use in applications such as condensate polishing where these resins can be operated at flow rates up to 120 m/h.

Typical Physical and Chemical Properties

Physical form	Ivory spherical beads
Matrix	Styrene divinylbenzene copolymer
Functional groups	Trimethyl ammonium
Ionic form as shipped	SO ₄ ⁻
Total volume capacity	1.00 eq/L (21.8 kgr/ft ³) (Cl ⁻ form)
Moisture retention capacity	60–68% (Cl ⁻ form)
Shipping density	690 g/L (43 lbs/ft ³)
Particle size	
Uniformity coefficient, max.	1.45
Harmonic mean diameter	0.50–0.70 mm
> 1.180 mm, max.	1.0%
< 0.300, max.	0.5%
Maximum reversible swelling	Cl ⁻ → OH ⁻ : 25%

Suggested Operating Conditions

Maximum operating temperature	60°C / 140°F
Service flow rate	10–120 BV*/h (1.25–15 gpm/ft ³)
Regenerant	NaOH
Concentration	4%
Level	80–150 g/L (5–9.4 lbs/ft ³)
Minimum contact time	30 minutes
Slow rinse	2 BV at regeneration flow rate
Fast rinse	4–8 BV at service flow rate

*1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gals per ft³ resin

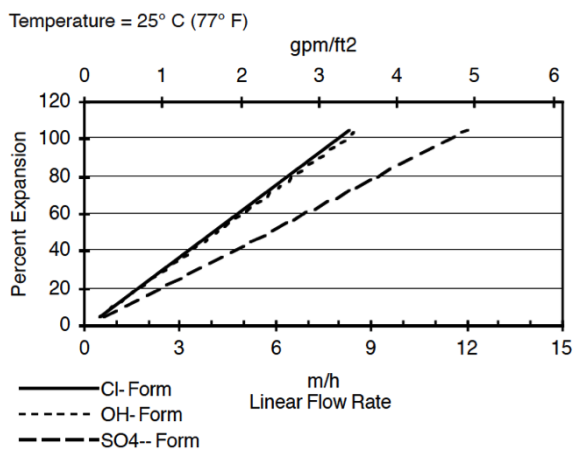
Packaging

25 liter bags

Hydraulic Characteristics

Figure 1 shows the bed expansion of AMBERSEP™ 900 OH as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for AMBERSEP 900 OH as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with clear water and a correctly classified bed.

Figure 1. Backwash Expansion Data

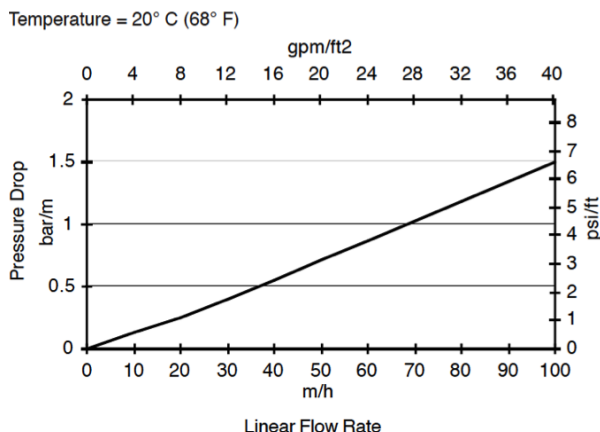


For other temperatures use:

$$F_T = F_{77°F} [1 + 0.008 (T_{°F} - 77)], \text{ where } F \equiv \text{gpm/ft}^2$$

$$F_T = F_{25°C} [1 + 0.008 (1.8T_{°C} - 45)], \text{ where } F \equiv \text{m/h}$$

Figure 2. Pressure Drop Data



For other temperatures use:

$$P_T = P_{20°C} / (0.026 T_{°C} + 0.48), \text{ where } P \equiv \text{bar/m}$$

$$P_T = P_{68°F} / (0.014 T_{°F} + 0.05), \text{ where } P \equiv \text{psi/ft}$$

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to

manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.



AMBERJET is a trademark of Rohm and Haas Company and its affiliates, 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 or appropriateness of these 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 and its affiliates. Material Safety Data Sheets outlining the hazards and handling methods for our products are available on request.