Product Data Sheet

AMBERLYST™ A22 Ion Exchange Resin

Acid Absorber for Industrial Processes

Description

AMBERLYST™ A22 Ion Exchange Resin is a weak base anion resin exhibiting exceptionally high capacity for acid absorption in a variety of industrial process applications.

For some applications that are sensitive to moisture, AMBERLYST A22 can be dried to remove excess moisture. Since there may be safety concerns associated with the drying process, please contact your Dow representative if this is desired.

Applications

The resin can remove acids from:

- Polyglycols
- Polyesters
- Polyalphaolefins
- Phosphate esters
- Automobile oils

Typical Physical and Chemical Properties

Matrix	Styrene-divinylbenzene, macroporous
Type	Weak base anion
Physical Form	Yellow to brown, spherical beads
Ionic Form as Shipped	Free Base (FB)
Total Exchange Capacity	≥ 1.7 eq/L
Weak Base Capacity	≥ 1.5 eq/L
Metals Analysis	
Fe, Al, Cu, Ca, Mg	≤ 50 ppm of each
Water Retention Capacity	40 – 50%
Particle Diameter [b]	475 – 600 µm
Swelling	FB → HCl : 22 – 28%
Particle Density	1.04 g/mL
Bulk Density, as Shipped [c]	640 g/L

[b] For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

[c] As per the backwashed and settled density of the resin, determined by ASTM D-2187.

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Suggested Operating Conditions

Maximum Operating Temperature	120°C (250°F)
pH Range	0 – 7
Total Rinse Requirement	1 – 3 BV*

* 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin or 7.5 gal per ft^3 resin

Hydraulic Characteristics

Bed expansion of AMBERLYST™ A22 Ion Exchange Resin as a function of backwash flowrate at 25°C (77°F) is shown in Figure 1. The flowrate necessary to achieve a desired bed expansion for other water temperatures can be calculated with the provided equations.

Pressure drop data for AMBERLYST A22 as a function of viscosity at 20°C (68°F) is shown in Figure 2.

Figure 1: Backwash Expansion

Temperature = 25°C (77°F)

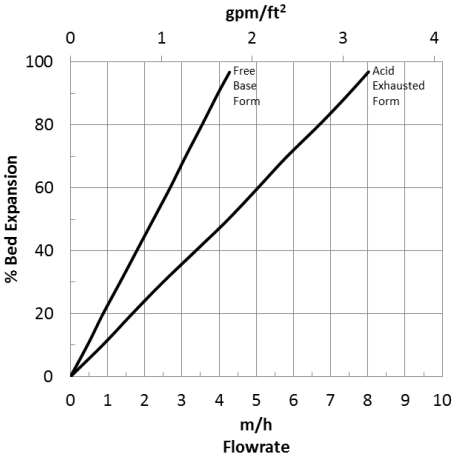
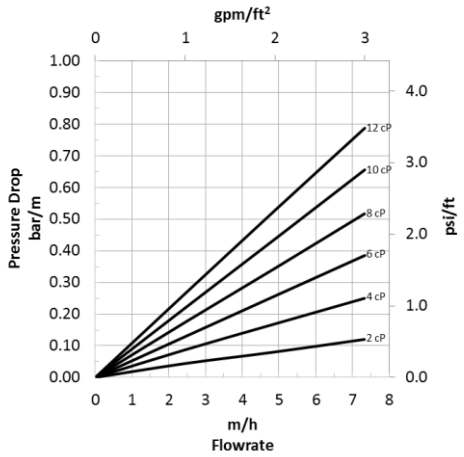


Figure 2: Pressure Drop

Temperature = 20°C (68°F)

Viscosity = 2 – 12 cP



For other temperatures use:

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

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

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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.

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WARNING: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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