Product Data Sheet

AMBERLYST™ A22 Ion Exchange Resin

Industrial-grade, Weakly Basic Polymeric Resin

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 DuPont representative if this is desired.

Applications

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

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Weak base anion
Functional Group	Tertiary amine
Physical Form	Yellow to brown, opaque, spherical beads
Chemical Properties	
Ionic Form as Shipped	Free base (FB)
Concentration of Base Sites ‡	≥ 1.70 eq/L
Water Retention Capacity	40 – 50%
Particle Size §	
Particle Diameter	475 – 600 µm
Swelling	
FB → HCl	22 – 28%
Density	
Shipping Weight	640 g/L

‡ Total Exchange Capacity (on a water-wet basis) ≥ 1.70 eq/L
§ For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

Form No. 177-03621, Rev. 1
June 2019

Suggested Operating Conditions

Maximum Operating Temperature	120°C (250°F)
Flowrates	
Linear Hourly Space Velocity (LHSV)	0.5 – 5 h^{-1}
Backwash	See Figure 1
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

Estimated 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.

Estimated pressure drop for AMBERLYST™ A22 as a function of viscosity is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean water and a well-classified bed.

Figure 1: Backwash Expansion

Temperature = 25°C (77°F)

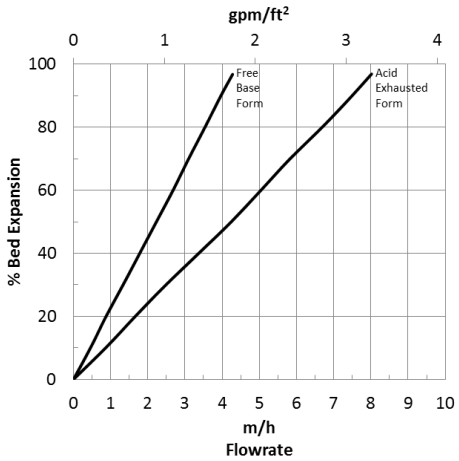
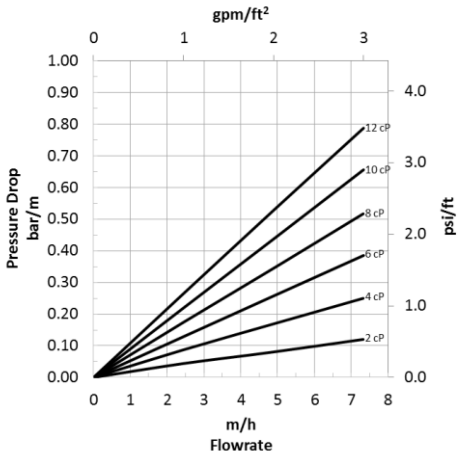


Figure 2: Pressure Drop

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/$ft^2$

Form No. 177-03621, Rev. 1
June 2019

Product Stewardship

DuPont 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 DuPont products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

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

Please be aware of the following:

- **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.

Have a question? Contact us at:

www.dupont.com/water/contact-us

Form No. 177-03621, Rev. 1
June 2019