Product Data Sheet

AMBERLYST™ CH28 Polymeric Catalyst

Industrial-grade, Palladium-doped, Strongly Acidic Catalyst

Description

AMBERLYST™ CH28 Polymeric Catalyst is a bead-form, macroporous, sulfonic acid, palladium-doped resin developed particularly for heterogeneous catalysis.

This catalyst is especially suitable for the production of methy isobutyl ketone (MIBK) from acetone. In this case, the hydrogenation reaction, catalyzed by the palladium that is loaded on the resin, prevents the formation of higher condensation products.

Applications

- Hydrogenation (MIBK)

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Gray, opaque, spherical beads
Nitrogen BET	
Surface Area	36 m^2/g
Total Pore Volume	0.20 cc/g
Average Pore Diameter	260 Å
Chemical Properties	
Ionic Form as Shipped	H^+
Concentration of Acid Sites ‡	≥ 4.80 eq/kg
	≥ 1.60 eq/L
Water Retention Capacity	52 – 58%
Palladium Load	
Dry basis	≥ 0.70%
Wet basis	≥ 2.4 g/L
Particle Size §	
Particle Diameter	850 – 1050 µm
Uniformity Coefficient	≤ 1.40
< 710 µm	≤ 2.0%
> 1180 µm	≤ 15.0%
Shrinkage (in solvent)	
Acetone	14%
MIBK	19%
Density	
Shipping Weight	790 g/L

‡ Dry Weight Capacity ≥ 4.80 eq/kg; Total Exchange Capacity (on a water-wet basis) ≥ 1.60 eq/L
§ For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

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Suggested Operating Conditions

Maximum Operating Temperature	130°C (265°F)
Bed Depth, min.	1000 mm (3.3 ft)
Pressure Drop, max.	1 bar (15 psig) across the bed
Flowrates	
Linear Hourly Space Velocity (LHSV)	0.5 – 5 h^{-1}
Backwash	See Figure 1

Hydraulic Characteristics

Estimated bed expansion of AMBERLYST™ CH28 Polymeric Catalyst as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLYST™ CH28 as a function of service flowrate and temperature 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 = 10 – 90°C (50 – 194°F)

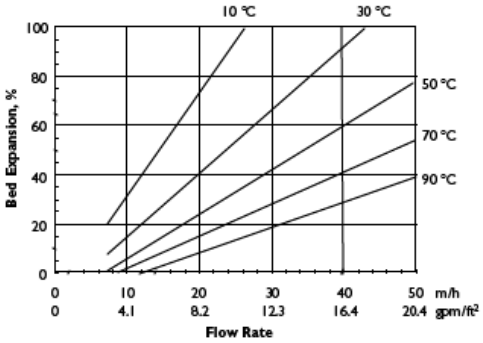
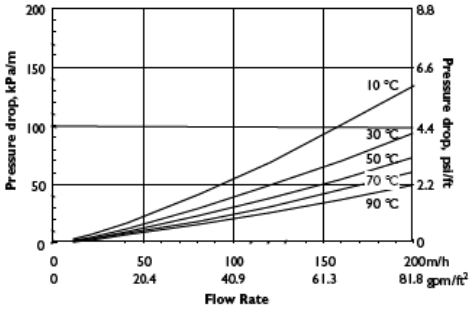


Figure 2: Pressure Drop

Temperature = 10 – 90°C (50 – 194°F)



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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

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