Product Data Sheet

DuPont™ AmberLyst™ 36WET Polymeric Catalyst

Industrial-grade, Strongly Acidic Catalyst

Description

DuPont™ AmberLyst™ 36WET Polymeric Catalyst is a bead-form, macroporous, sulfonic acid catalyst developed particularly for heterogeneous catalysis.

The special process used to manufacture AmberLyst™ 36WET results in a particularly high concentration of acid groups and also confers an improved thermal stability when compared to conventional catalysts.

AmberLyst™ 36WET is mainly used in phenol alkylation reactions.

Applications

- Dimerization (isooctane)
- Phenol purification
- Phenol alkylation
- Esterification (acetates, acrylates, fatty acid esters)

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Black, opaque, spherical beads
Nitrogen BET	
Surface Area	33 m^2/g
Total Pore Volume	0.20 cc/g
Average Pore Diameter	240 Å
Chemical Properties	
Ionic Form as Shipped	H^+
Concentration of Acid Sites ‡	≥ 5.40 eq/kg ≥ 1.95 eq/L
Water Retention Capacity	51 – 57%
Particle Size §	
Particle Diameter	600 – 850 µm
Uniformity Coefficient	≤ 1.6
< 425 µm	≤ 0.5%
> 1180 µm	≤ 4.0%
Shrinkage (in solvent)	
Phenol	20%
Dry	54%
Density	
Shipping Weight	800 g/L

‡ Dry Weight Capacity ≥ 5.40 eq/kg; Total Exchange Capacity (on a water-wet basis) ≥ 1.95 eq/L

§ For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 45-D00954-en).

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Suggested Operating Conditions

Maximum Operating Temperature	150°C (300°F)
Bed Depth, min.	600 mm (2.0 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 DuPont™ AmberLyst™ 36WET Polymeric Catalyst as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLyst™ 36WET 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)

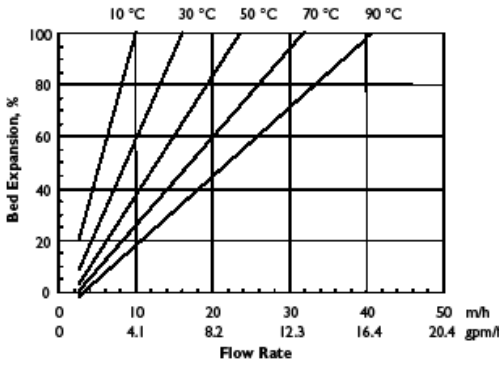
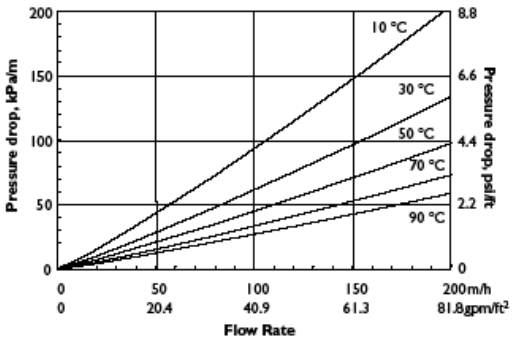


Figure 2: Pressure Drop

Temperature = 10 – 90°C (50 – 194°F)



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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.

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Have a question? Contact us at:

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