Product Data Sheet

AmberLyst™ 131B Polymeric Catalyst

Industrial-grade, Strongly Acidic Catalyst

Description

AmberLyst™ 131B Polymeric Catalyst is a strongly acidic, gel, uniform particle size, polymeric catalyst.

AmberLyst™ 131B is partially loaded with a promoter and is highly active for condensation reactions. It is used especially in the condensation of phenol with acetone to produce Bisphenol-A (BPA).

The uniform particle size of AmberLyst™ 131B allows for reduced reactor pressure drop and significantly higher productivity than conventional polymeric catalysts.

Applications

- Condensation (Bisphenol-A)

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Light brown, translucent, spherical beads
Chemical Properties	
Ionic Form as Shipped	H^+
Concentration of Acid Sites ‡	≥ 4.80 eq/kg ≥ 1.35 eq/L
Water Retention Capacity	62 – 68%
Promotion Level	22 – 28%
Particle Size §	
Particle Diameter	750 ± 50 µm
Uniformity Coefficient	≤ 1.15
< 425 µm	≤ 0.5%
> 1180 µm	≤ 2.0%
Shrinkage (in solvent)	
Phenol	48%
Density	
Shipping Weight	770 g/L

‡ Dry Weight Capacity ≥ 4.80 eq/kg; Total Exchange Capacity (on a water-wet basis) ≥ 1.35 eq/L

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

Suggested Operating Conditions

Maximum Operating Temperature	130°C (265°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

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Hydraulic Characteristics

Estimated bed expansion of AmberLyst™ 131B Polymeric Catalyst as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLyst™ 131B 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.

Figure 1: Backwash Expansion

Temperature = 10 – 90°C (50 – 194°F)

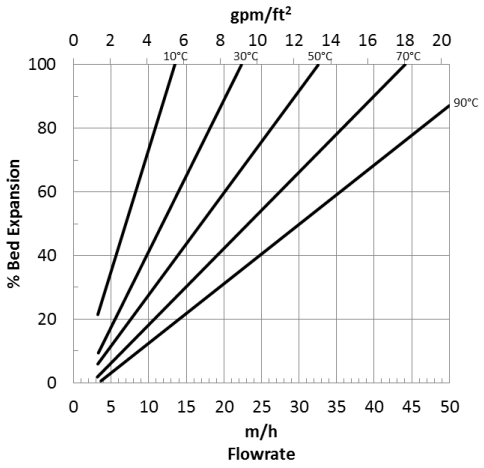
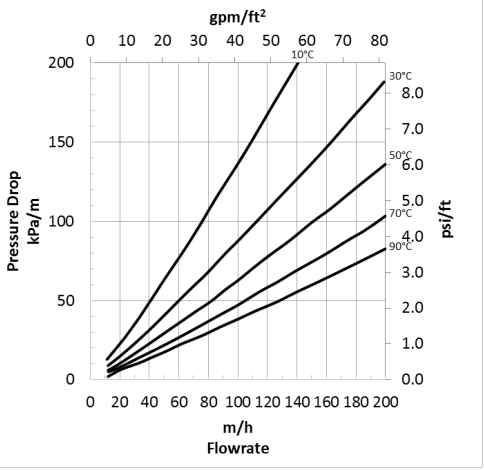


Figure 2: Pressure Drop

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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