

AmberLyst™ 39WET Polymeric Catalyst

Industrial-grade, Strongly Acidic Catalyst

Description

AmberLyst™ 39WET Polymeric Catalyst is a macroporous, sulfonic acid, polymeric catalyst with a relatively low crosslinked structure. Its continuous open pore structure makes it an excellent heterogeneous acid catalyst for a wide variety of organic reactions. The polymer structure of AmberLyst™ 39WET is extremely resistant to polymer fouling.

AmberLyst™ 39WET can be used directly in aqueous systems or in organic media after conditioning with a water-miscible solvent.

Applications

- 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	Amber, opaque, spherical beads
Nitrogen BET	
Surface Area	32 m ² /g
Total Pore Volume	0.20 cc/g
Average Pore Diameter	230 Å
Chemical Properties	
Ionic Form as Shipped	H ⁺
Concentration of Acid Sites ‡	≥ 5.00 eq/kg ≥ 1.15 eq/L
Water Retention Capacity	60 – 66%
Particle Size §	
Uniformity Coefficient	≤ 1.50
< 425 µm	≤ 0.5%
> 1180 µm	≤ 10.0%
Shrinkage (in solvent)	
Methanol	14%
n-Butanol	12%
Density	
Shipping Weight	735 g/L

‡ Dry Weight Capacity ≥ 5.00 eq/kg; Total Exchange Capacity (on a water-wet basis) ≥ 1.15 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

Hydraulic Characteristics

Estimated bed expansion of AmberLyst™ 39WET Polymeric Catalyst as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLyst™ 39WET 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)

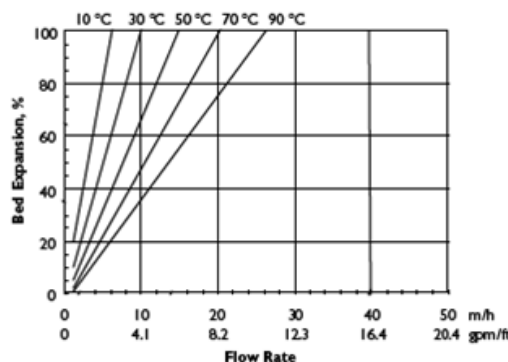
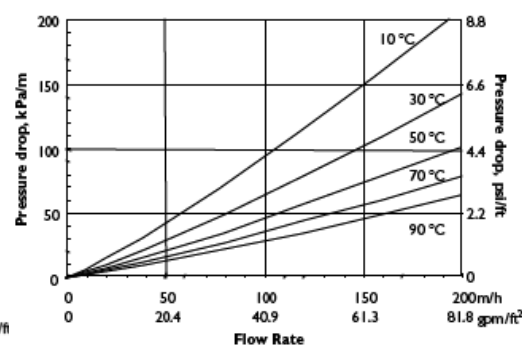


Figure 2: Pressure Drop

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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