



## Product Data Sheet

### **AMBERLYST™ 131WET Polymeric Catalyst**

Industrial-grade, Strongly Acidic Catalyst

#### **Description**

AMBERLYST™ 131WET Polymeric Catalyst is a strongly acidic, gel, uniform particle size polymeric catalyst, excellent for the production of low-molecular-weight esters, including methyl and ethyl acrylate.

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

#### **Applications**

- Low molecular weight esterification reactions (ethyl acrylate production)

#### **Typical Properties**

<b>Physical Properties</b>	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Light brown, translucent, spherical beads
<b>Chemical Properties</b>	
Ionic Form as Shipped	H <sup>+</sup>
Concentration of Acid Sites †	≥ 4.80 eq/kg ≥ 1.35 eq/L
Water Retention Capacity	62 – 68%
<b>Particle Size §</b>	
Particle Diameter	750 ± 50 µm
Uniformity Coefficient	≤ 1.15
< 425 µm	≤ 0.5%
> 1180 µm	≤ 2.0%
<b>Shrinkage (in solvent)</b>	
Phenol	48%
<b>Density</b>	
Shipping Weight	740 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. 177-01775).

## 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 <sup>-1</sup>
Backwash	See Figure 1

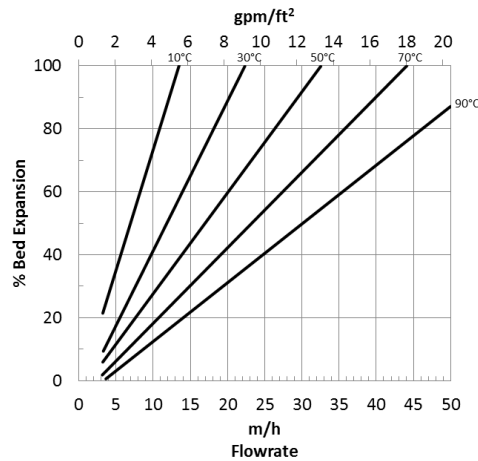
## Hydraulic Characteristics

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

Estimated pressure drop for AMBERLYST™ 131WET 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.

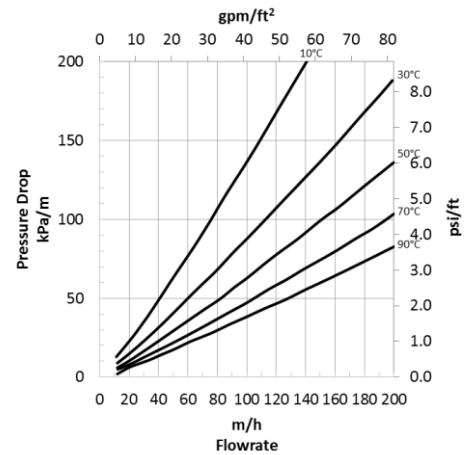
**Figure 1: Backwash Expansion**

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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