

**AMBERLYST™ 131WET Polymeric Catalyst**

Industrial-grade Strongly Acidic Catalyst

**Description**

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

This solid acid polymeric catalyst is excellent for the production of low molecular weight esters, including 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 Physical and Chemical Properties\*\***

Matrix	Styrene-divinylbenzene, gel
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Light brown, translucent, spherical beads
Ionic Form as Shipped	H <sup>+</sup>
Concentration of Acid Sites †	≥ 4.8 eq/kg ≥ 1.35 eq/L
Water Retention Capacity	62 – 68%
Particle Size	
Particle Diameter §	750 ± 50 µm
Uniformity Coefficient	≤ 1.15
< 425 µm	≤ 0.5%
> 1180 µm	≤ 2.0%
Shrinkage	Water → Phenol : 48%
Bulk Density, as Shipped	740 g/L

† Total Exchange Capacity (on a water-wet basis) ≥ 1.35 eq/L; Dry Weight Capacity ≥ 4.8 eq/kg.

§ 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.	60 cm (24 inches)
Operating Flowrate	1 – 5 BV*/h (LHSV)
Pressure Drop, max.	1 bar (15 psig) across the bed

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin or 7.5 gal per ft<sup>3</sup> resin

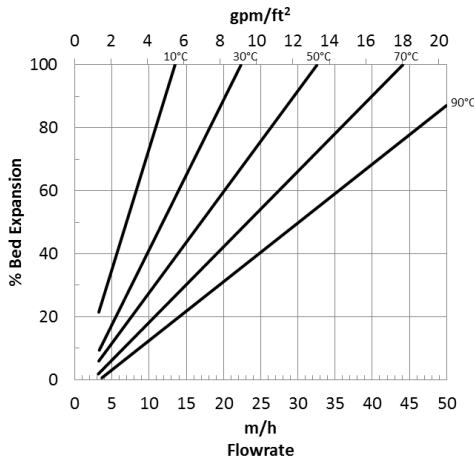
## Hydraulic Characteristics

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

Pressure drop data for AMBERLYST 131WET as a function of service flowrate and water temperature is shown in Figure 2.

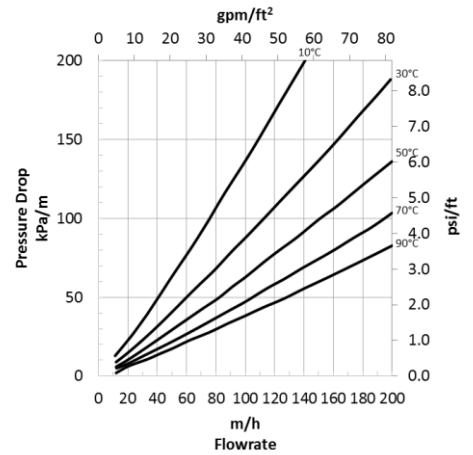
**Figure 1: Backwash Expansion**

Temperature = 10 – 90°C (50 – 194°F)



**Figure 2: Pressure Drop**

Temperature = 10 – 90°C (50 – 194°F)



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**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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