

**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 ⁺
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 m³ solution per m³ resin or 7.5 gal per ft³ 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)

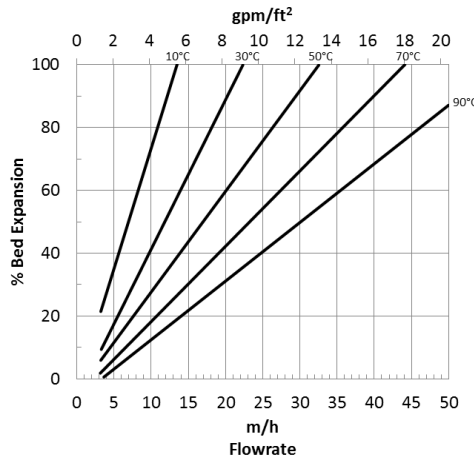
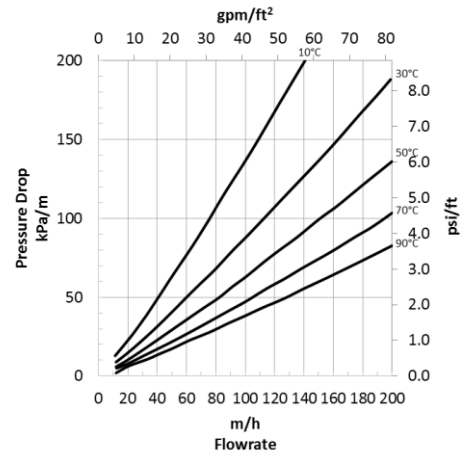


Figure 2: Pressure Drop

Temperature = 10 – 90°C (50 – 194°F)



Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

For more information, contact our Customer Information Group:

Asia Pacific	+86 21 3851 4988
Europe, Middle East, Africa	+31 115 672626
Latin America	+55 11 5184 8722
North America	1-800-447-4369

www.dowwaterandprocess.com

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.

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

"All information set forth herein is for informational purposes only. This information is general information and may differ from that based on actual conditions. Please note that physical properties may vary depending on certain conditions and while operating conditions stated in this document are intended to lengthen product lifespan and/or improve product performance, it will ultimately depend on actual circumstances and is in no event a guarantee of achieving any specific results. Nothing in this document should be treated as a warranty by Dow.

