



AMBERLYST™ 123 Resin

Industrial Grade Strongly Acidic Catalyst

Description

AMBERLYST™ 123 Resin is a clean gel type, sulphonic acid, polymeric catalyst with a uniform particle size and a low crosslinked structure. It is highly active for condensation reactions such as the condensation of phenol with acetone to produce Bisphenol-A*.

AMBERLYST 123 Resin is designed to produce high quality BPA. Its particle size and pore structure allow for reduced pressure drop and significantly longer lifetime than conventional catalysts.

*U.S. Patent 5,233,096 (1993).

Typical Physical and Chemical Properties

Physical form	Light brown spherical beads
Ionic form as shipped	Hydrogen
Concentration of acid sites	≥ 4.8 eq/kg ¹ ≥ 0.73 eq/L
Water retention capacity	74–84% (H ⁺ form)
Shipping weight	730 g/L (45.5 lbs/ft ³)
Particle size	
Harmonic mean size	0.720–0.820 mm
Uniformity coefficient, max	≤ 1.2
Fines content	< 0.300 mm : 0.1% max
Coarse beads	> 1.180 mm : 5.0% max
Shrinkage	Water to phenol : 68%

Test methods are available on request.

Suggested Operating Conditions

Maximum operating temperature	130°C (265°F)
Minimum bed depth	60 cm (24 inches)
Operating flow rate	1–8 BV ^{**} /h (LHSV)
Pressure drop limitation	1 bar (15 psig) across the bed

**1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gals per ft³ resin

Hydraulic Characteristics

Figure 1 shows the bed expansion of AMBERLYST™ 123 Resin as a function of backwash linear velocity and water temperature.

Figure 1. Bed Expansion

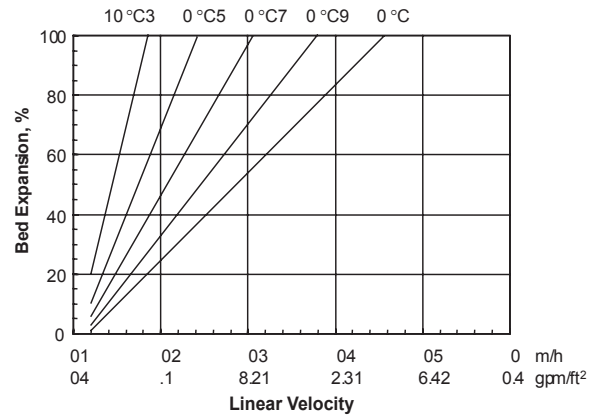
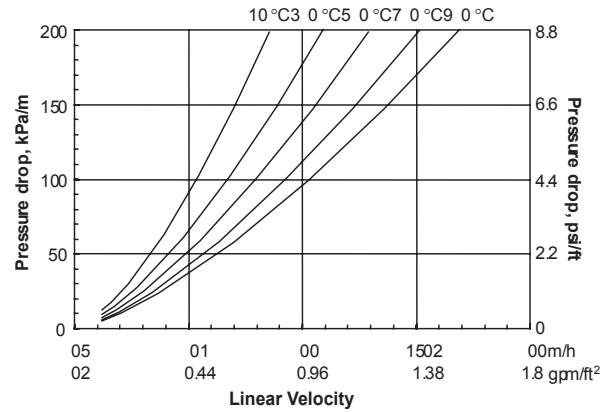


Figure 2 shows the pressure drop data for AMBERLYST™ 123 Resin as a function of service flow rate and water temperature.

Figure 2. Pressure Drop



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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.

DOW™ Ion Exchange Resins
For more information about DOW™ resins, call the Dow Water & Process Solutions business:

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