



AMBERLYST™ 35WET

Industrial Grade Strongly Acidic Catalyst

Introduction

AMBERLYST 35WET is a macroporous, strongly acidic, cationic, polymeric catalyst. Its open continuous pore structure makes it an excellent heterogeneous catalyst for a wide variety of organic reactions. This catalyst possesses a novel acid functionality which gives it higher thermal stability than standard polymeric catalysts. Its polymeric structure is resistant to oxidants and breakdown caused by mechanical and osmotic shock.

AMBERLYST 35WET is a superior next-generation catalyst for the production of MTBE and TAME. It significantly outperforms conventional catalysts. Amberlyst 35WET has increased activity which means throughput can be increased by 20 to 40% while maintaining high olefin conversion. Selectivity to MTBE or TAME remains high.

Another important feature of AMBERLYST 35WET is that it increases the equilibrium constant of isobutylene and methanol to MTBE compared to conventional catalysts. This feature can lead to significant increases in MTBE productivity. Longer catalyst lifetimes may result from the increased concentration of acid sites and enhanced thermal stability.

Properties

Physical form	Opaque beads
Ionic form as shipped	Hydrogen (98 % min.)
Concentration of acid sites	≥ 1.9 eq/L ≥ 5.2 eq/kg
Moisture holding capacity	51 to 57% (H ⁺ form)
Shipping weight	800 g/L (50 lbs/ft ³)
Particle size	
Harmonic mean size	0.700 - 0.950 mm
Uniformity coefficient	≤ 1.7
Fines contents	< 0.425 mm: 1.0% max
Coarse beads	> 1.180 mm: 9.0% max
Nitrogen BET	
Surface area	50 m ² /g
Average pore diameter	300 Å
Total pore volume	0.35 ml/g
Shrinkage	Water to methanol: 4.5% Water to MTBE: 10.5% Water to hexane: 21% Water to dry: 40%

Suggested Operating Conditions

Maximum operating temperature	150°C (300°F)
Minimum bed depth	1000 mm (39 inches)
Operating flow rate	1 to 5 BV*/h (LHSV)
Pressure drop limitation	1 bar (15 psig) across the bed

Hydraulic Characteristics

Figure 1 shows the bed expansion of AMBERLYST 35WET as a function of backwash flow rate and water temperature.

Figure 2 shows the pressure drop data for AMBERLYST 35WET as a function of service flow rate and water temperature.

Figure 1: Bed expansion

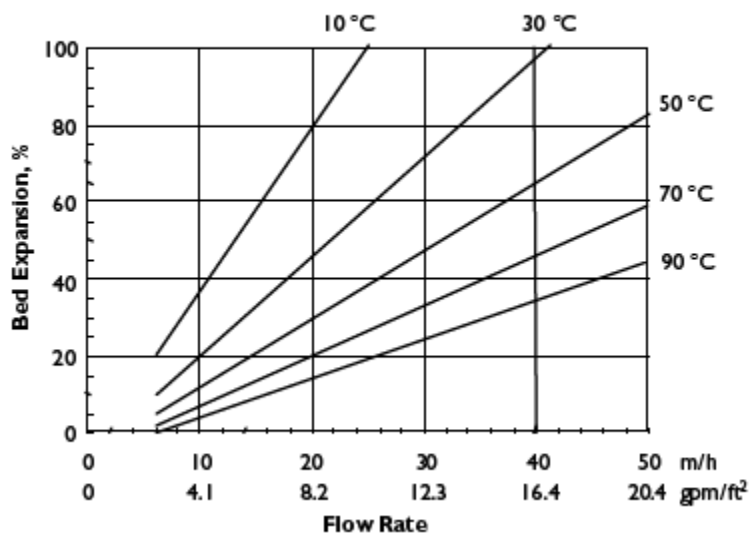
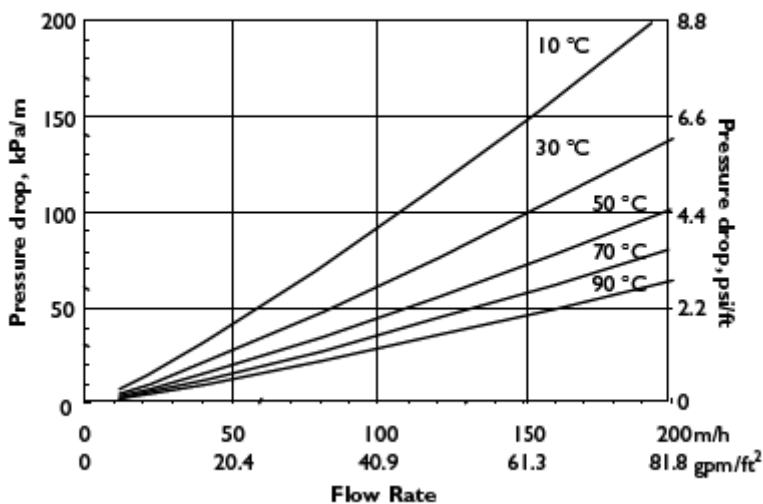


Figure 2: Pressure drop



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