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AMBERLYST® A21

Industrial Grade Weakly Basic Polymeric Resin

PRODUCT DATA SHEET

AMBERLYST A21 is a bead form, weak base anion exchange resin developed for the removal of acidic materials from product streams. AMBERLYST A21 is supplied in the water-moist free base form. After proper solvent conditioning, it can be used directly to remove acidic materials from organic solvents and to remove phenol from benzene and inhibitors from monomers : hydroquinone (HQ), hydroquinone mono-ethyl ether (MEHQ), tertiary butyl catechol (TBC). AMBERLYST A21 is also used in adsorption of SO_2 from gas streams.

PROPERTIES

Physical form	Opaque spherical beads
Ionic form as shipped	Free Base (FB)
Concentration of active sites	≥ 1.30 eq/L [1]
	≥ 4.6 eq/kg
Moisture holding capacity [1]	54 to 60 % (FB form)
Shipping weight	660 g/L (41.2 lbs/ft^3)
Particle size	
Harmonic mean size	0.490 - 0.690 mm
Uniformity coefficient	≤ 1.80
Fines content [1]	< 0.300 mm : 1.0 % max
Coarse beads	> 1.180 mm : 2.0 % max
Nitrogen BET	
Surface area	35 m^2/g
Average pore diameter	110 Å
Total pore volume	0.10 cc/g
Shrinkage	Water to phenol : 77 %

[1] *Contractual value*

SUGGESTED OPERATING CONDITIONS (Chemical Processing)

pH range		0 to 14		
Maximum operating tempeature		100°C (210°F)		
Minimum bed depth		600 mm (24 inches)		
Service flow rate		8 to 40 BV/h (1 to 5 gpm/ft^3)		
Regenerants		**NaOH**	**NH_4OH**	**Na_2CO_3**
Flow rate	(BV/h)	4 to 8	4 to 8	4 to 8
Flow rate	(gpm/ft^3)	0.5 to 1.0	0.5 to 1.0	0.5 to 1.0
Concentration	(%)	2 to 4	2 to 4	4 to 8
Level		120 % of ionic load		
Minimum contact time		30 minutes		
Slow rinse		2 BV (15 gal/ft^3) at regeneration flow rate		
Fast rinse		2 to 4 BV (15 to 30 gal/ft^3) at service flow rate		

HYDRAULIC CHARACTERISTICS

Figure 1 shows the bed expansion of AMBERLYST A21 as a function of backwash flow rate and water temperature.

Figure 2 shows the pressure drop data for AMBERLYST A21 as a function of service flow rate and and water temperature.

Figure 1: Bed expansion

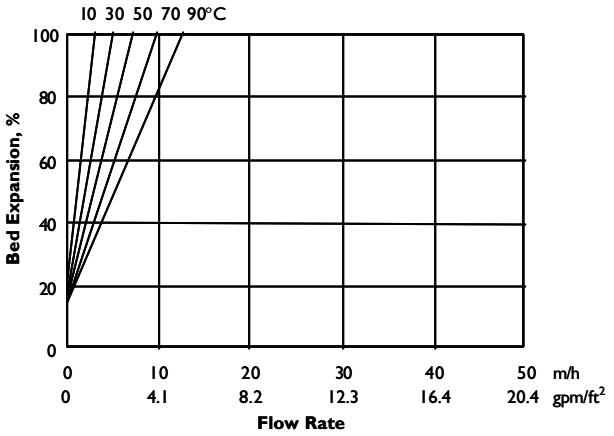
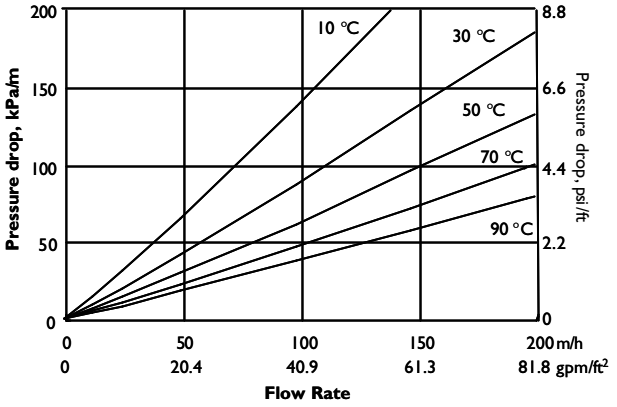


Figure 2: Pressure drop



All our products are produced in ISO 9002 certified manufacturing facilities