



**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<sub>2</sub> from gas streams.

**PROPERTIES**

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

<sup>[1]</sup> Contractual value

**SUGGESTED OPERATING CONDITIONS (Chemical Processing)**

pH range _____	0 to 14		
Maximum operating temperature _____	100°C (210°F)		
Minimum bed depth _____	600 mm (24 inches)		
Service flow rate _____	8 to 40 BV/h (1 to 5 gpm/ft <sup>3</sup> )		
<b>Regenerants</b> _____	<b>NaOH</b>	<b>NH<sub>4</sub>OH</b>	<b>Na<sub>2</sub>CO<sub>3</sub></b>
Flow rate (BV/h) _____	4 to 8	4 to 8	4 to 8
Flow rate (gpm/ft <sup>3</sup> ) _____	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 <sup>3</sup> ) at regeneration flow rate		
Fast rinse _____	2 to 4 BV (15 to 30 gal/ft <sup>3</sup> ) 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.

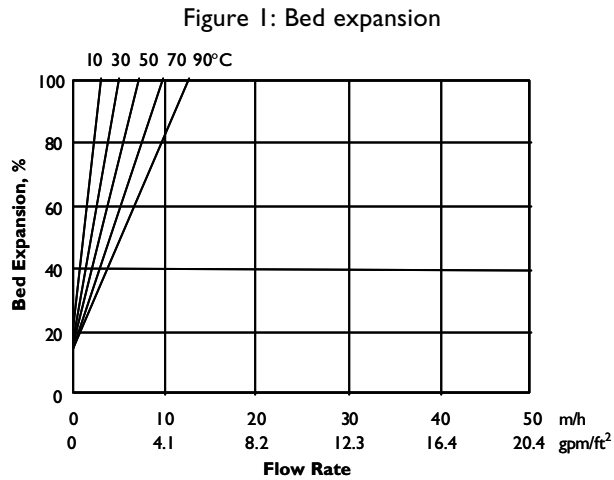
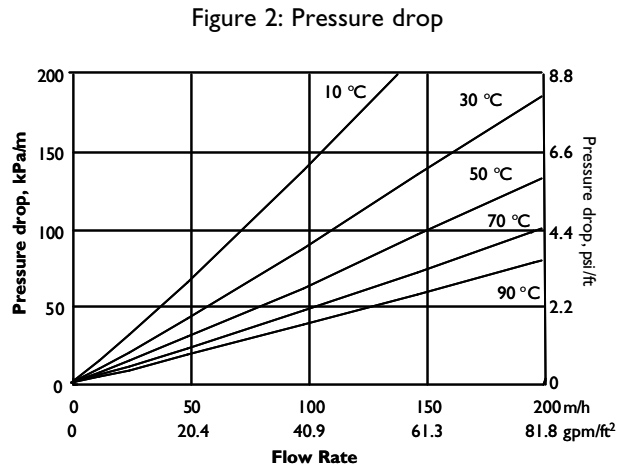


Figure 2 shows the pressure drop data for AMBERLYST A21 as a function of service flow rate and water temperature.



All our products are produced in ISO 9002 certified manufacturing facilities



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Ion exchange resins and polymeric adsorbents, as produced, contain by-products resulting from the manufacturing process. The user must determine the extent to which organic by-products must be removed for any particular use and establish techniques to assure that the appropriate level of purity is achieved for that use. The user must ensure compliance with all prudent safety standards and regulatory requirements governing the application. Except where specifically otherwise stated, Rohm and Haas Company does not recommend its ion exchange resins or polymeric adsorbents, as supplied, as being suitable or appropriately pure for any particular use. Consult your Rohm and Haas technical representative for further information. Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Nitric acid and other strong oxidising agents can cause explosive type reactions when mixed with Ion Exchange resins. Proper design of process equipment to prevent rapid buildup of pressure is necessary if use of an oxidising agent such as nitric acid is contemplated. Before using strong oxidising agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

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