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DOWEX™ N406

A Uniform Particle Size Strong Acid Cation Exchange Resin for Fermentation and Fine Chemical Applications

Product	Type	Matrix	Functional group
DOWEX™ N406	Strong acid cation	Styrene-DVB gel	Sulfonic acid

Guaranteed Sales Specifications		H^+
Total exchange capacity, min.	eq/L	2.0
	kgr/ft³ as $CaCO_3$	43.7
Water content	%	46-51
Bead size distribution:		
Mean particle size	µm	650 ± 50
Uniformity coefficient, max		1.1
> 850 µm, max.	%	5
< 300 µm, max.	%	0.5
Whole uncracked beads, min.	%	95
Crush strength:		
Average, min.	g/bead	500
> 200 g/bead, min.	%	95

Typical Physical and Chemical Properties		
Particle density	g/mL	1.22
Shipping weight**	g/L	784
	lbs/ft³	49
Total swelling ($Na^+ \rightarrow H^+$)	%	7

Recommended Operating Conditions

- Maximum operating temperature: 130°C (265°F)
- pH range: 0-14
- Bed depth, min.: 450 mm (1.5 ft)
- Total rinse requirement: 3-6 Bed volumes
- Regenerant: Type: 1-10% H_2SO_4 or 4-8% HCl

** As per the backwashed and settled density of the resin, determined by ASTM D-2187.

Typical Properties and Applications

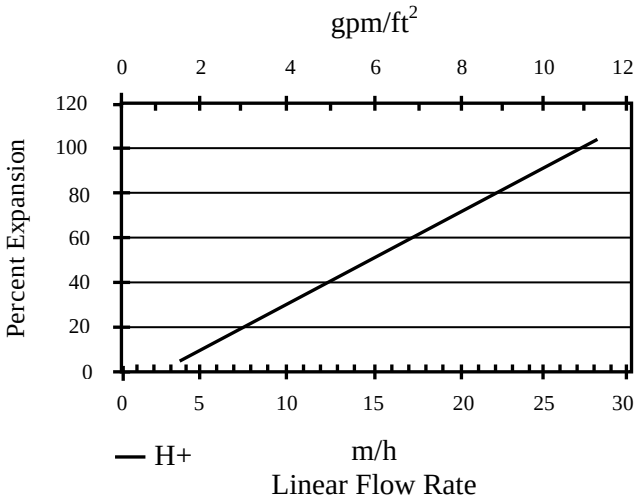
DOWEX™ N406, a strong acid cation resin, is a uniform particle size resin specially designed for use in fermentation and fine chemical applications such as L-lysine isolation and recovery. This resin is capable of meeting the 21CFR173.25 food contacting regulation after cross regeneration

Packaging

5 cubic foot drums or 1,000 liter super sacks

Figure 1. Backwash Expansion Data

Temperature = 25°C (77°F)



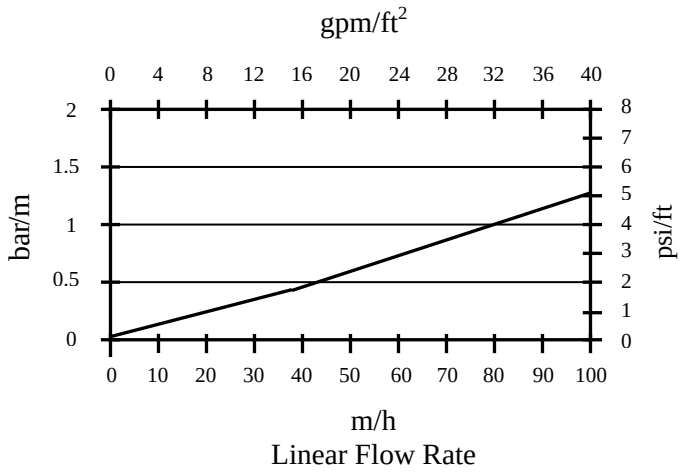
For other temperatures use:

$F_T = F_{77°F}$ [1+0.008 ($T_{°F}$ -77)], where F = gpm/ft^2

$F_T = F_{25°C}$ [1+01008 (1.8$T_{°C}$ –45)], where F = m/h

Figure 2. Pressure Drop Data

Temperature = 20°C (68°F)



For other temperatures use:

$P_T = P_{20°C}/(0.026\ T_{°C}+0.48)$, where P = bar/m

$P_T = P_{68°F}/(0.014\ T_{°F}+0.05)$, where P = psi/ft

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.