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DOWEX 88

Ion Exchange Resin for Sweetener Applications

Product	Type	Matrix	Functional group
DOWEX™ 88	Strong acid cation	Styrene-DVB, macroporous	Sulfonate

Typical Physical and Chemical Properties

Ionic form as produced		Na^+
Total exchange capacity, min.	eq/L	1.8
Water content	%	42 - 48
Bead size distribution		
Range	µm	300 - 1,200
> 1,200 µm 16 mesh	%	< 5
< 420 µm 40 mesh	%	< 5
Total swelling ($Na^+ \rightarrow H^+$)	%	5
Whole uncracked beads, min.	%	95
Particle density, approx.	g/mL	1.2
Shipping weight, approx.	g/L	800
	lbs/ft³	50

Recommended Operating Conditions

- Maximum operating temperature (H^+ form) 150°C (300°F)
- pH range 0 - 14
- Bed depth, min. 91 cm (3 ft)
- Flow rates:
  - Service 2 - 4 bed volumes/hour
  - Backwash See Figure 1
  - Regeneration time 30 - 45 min.
  - Displacement rinse 30 - 45 min.
  - Fast rinse (if applicable) 2 - 10 bed volumes/hour
- Total rinse requirement 3 - 6 bed volumes
- Regenerant:
  - Concentration 5 - 7% HCl
  - Level, 100% basis† 6 - 7 lbs/ft³
  - 96 - 112 kg/m³
  - Temperature, max. 93°C (200°F)

† Regeneration level may be lower for counter-current regeneration systems.

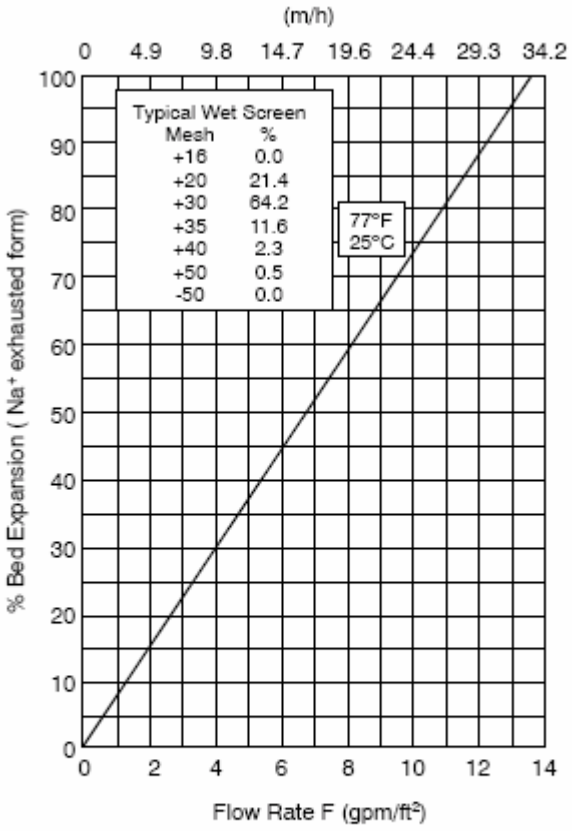
Typical Properties and Applications

DOWEX 88 resin is a macroporous strong acid cation resin for use in deashing, softening and demineralization. This macroporous matrix provides excellent mechanical strength and good operating capacity.

Packaging

25 liter bags, 5 cubic feet fiber drums or 1 cubic meter super sacks.

Figure 1. Backwash Expansion Data

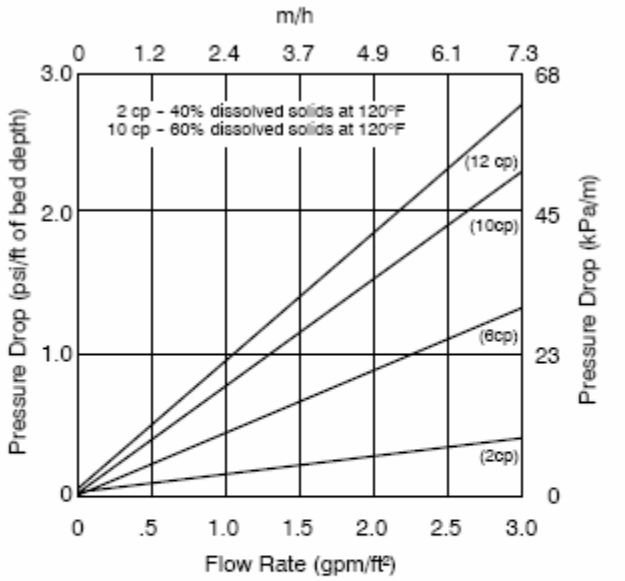


For other temperatures use:

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

$F_T = F_{25°C}$ [1+ 0.008 (1.8$T_{°C}$ - 45)], where F ≡ m/h

Figure 2. Pressure Drop Data



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

DOWEX Ion Exchange Resins

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.