DOWEX™ MONOSPHERE™ 88

Ion Exchange Resin for Sweetener Applications

Product	Type	Matrix	Functional group
DOWEX™ MONOSPHERE™ 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 - 50
Bead size distribution		
Volume median diameter	μm	500 - 600
400 - 720 μm, min.	%	95
Total swelling ($Na^+ \rightarrow H^+$)	%	5
Whole uncracked beads, min.	%	95
Particle density	g/mL	1.2
Shipping weight**	g/L	800
	lbs/ft^3	50

Recommended Operating Conditions

- Maximum operating temperature (H^+ form) 93°C (200°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 2 - 5 bed volumes
- Regenerant:
  - Concentration 7% HCl
  - Level, 100% basis† 5 - 6 lbs/ft^3
    80 - 96 kg/m^3
  - Temperature, max. 93°C (200°F)

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

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

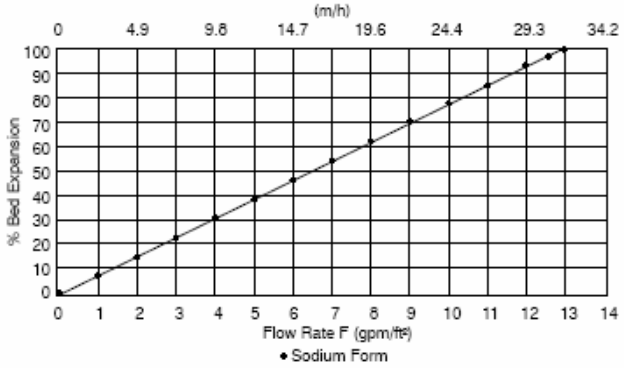
Typical Properties and Applications

DOWEX™ MONOSPHERE™ 88 resin is a strong acid cation resin made using a Dow-patented process which produces beads with remarkable size uniformity. Chemically optimized for syrup processing, they provide an ideal balance of high operating capacity, excellent physical strength, economical regeneration, long resin life and low operating costs.

Packaging

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

Figure 1. Backwash Expansion Data

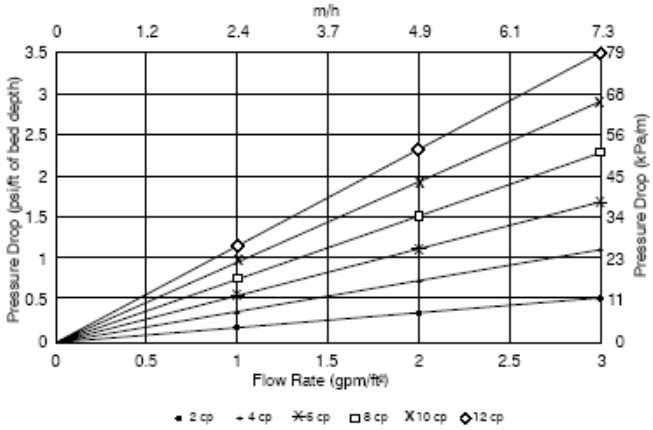


For other temperatures use:

$F_T = F_{77°F}$ [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

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