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DOWEX™ MONOSPHERE™ 66

Ion Exchange Resin for Sweetener Applications

Product	Type	Matrix	Functional group
DOWEX™ MONOSPHERE™ 66	Weak base anion	Styrene-DVB, macroporous	Tertiary amine

Typical Physical and Chemical Properties		FB (free base) form
Total exchange capacity, min.	eq/L	1.6
Weak base capacity, min.	eq/L	1.35
Water content	%	40 - 50
Bead size distribution		
Volume median diameter	µm	500 - 600
400 - 720 µm, min.	%	95
Total swelling (FB → HCl)	%	20
Particle density	g/mL	1.04
Shipping weight**	g/L	640
	lbs/ft^3	40

Recommended Operating Conditions

- Maximum operating temperature (OH^-) — 60°C (140°F)
- pH range — 0 - 7
- Bed depth, min. — 910 mm (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 - 5 bed volumes

Regenerants	NaOH†	Na_2CO_3	NH_4OH
Concentration (%)	4	5	5
Level, 100% basis††			
lbs/ft^3	4 - 5	6 - 7	4 - 5
kg/m^3	64 - 80	96 – 112	64 - 80
Temperature, max.	60°C (140°F)	60°C (140°F)	60°C (140°F)

† Recommended
†† 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.

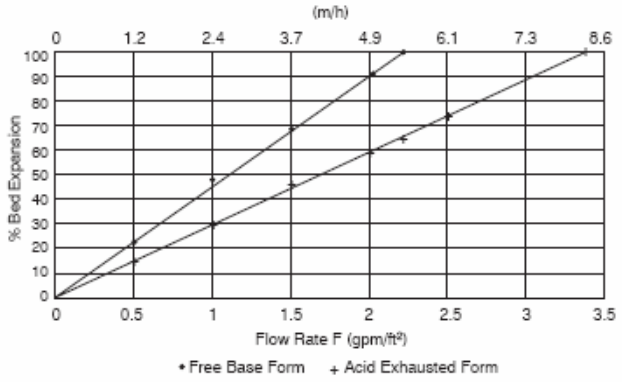
Typical Properties and Applications

DOWEX™ MONOSPHERE™ 66 resin is a weak base anion 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 foot fiber drums or 1 cubic meter super sacks

Figure 1. Backwash Expansion Data

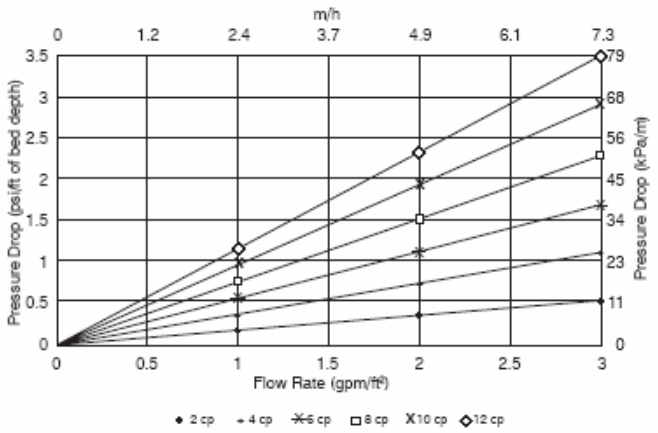


For other temperatures use:

$F_T = F_{77°F}$ [1+ 0.008 ($T_{°F}$ -77)], where F ≡ gpm/ft²

$F_T = F_{25°C}$ [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

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.

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