



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 ₂ CO ₃	NH ₄ OH
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

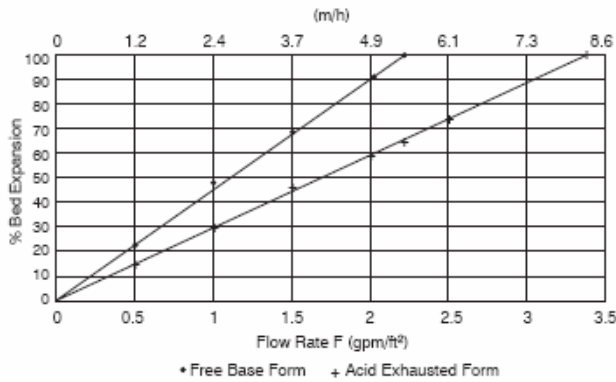
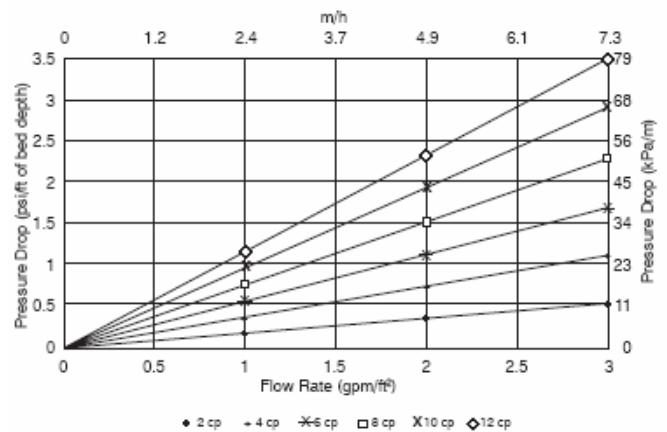


Figure 2. Pressure Drop Data



For other temperatures use:

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

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

For other temperatures use:

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

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

DOWEX™ Ion Exchange Resins

For more information about DOWEX resins, call the Dow Water Solutions business:

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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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