



DOWEX™ MONOSPHERE™ 88 (H)
Ion Exchange Resin for Sweetener Applications

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

Typical Physical and Chemical Properties

Ionic form as produced		H ⁺
Total exchange capacity, min.	eq/L	1.7
Water content	%	50 - 56
Bead size distribution		
Volume median diameter	μm	500 - 600
400 - 720 μm, min.	%	95
Total swelling (Na ⁺ → H ⁺)	%	5
Whole uncracked beads, min.	%	95
Particle density	g/mL	1.2
Shipping weight**	g/L lbs/ft ³	770 48

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, minimum	30 - 45 min.
	Displacement rinse, minimum	30 - 45 min.
	• Total rinse requirement (new)	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.

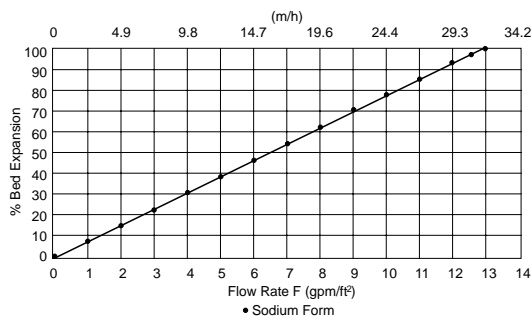
Typical Properties and Applications

DOWEX™ MONOSPHERE™ 88 (H) 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, the resin provides an ideal balance of high operating capacity, excellent physical strength, economical regeneration and long resin life, which together, result in low operating costs.

Packaging

5 cubic feet fiber drums or 1 cubic meter super sacks

Figure 1. Backwash Expansion Data (Exhausted)

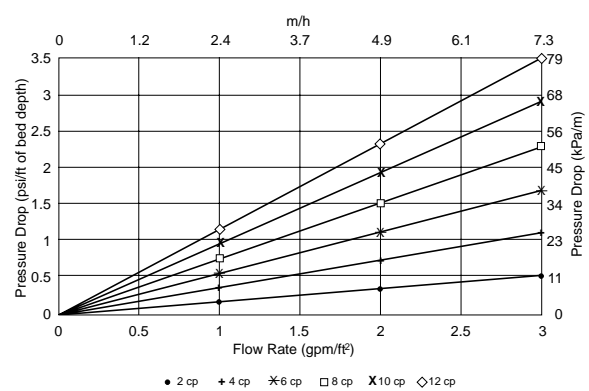


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

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

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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