



## 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 <sup>+</sup>
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 <sup>+</sup> → H <sup>+</sup> )	%	5
Whole uncracked beads, min.	%	95
Particle density, approx.	g/mL	1.2
Shipping weight, approx.	g/L lbs/ft <sup>3</sup>	800 50

### Recommended Operating Conditions

- Maximum operating temperature (H<sup>+</sup> 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<sup>†</sup> 6 - 7 lbs/ft<sup>3</sup>  
96 - 112 kg/m<sup>3</sup>
  - Temperature, max. 93°C (200°F)

<sup>†</sup> Regeneration level may be lower for counter-current regeneration systems.

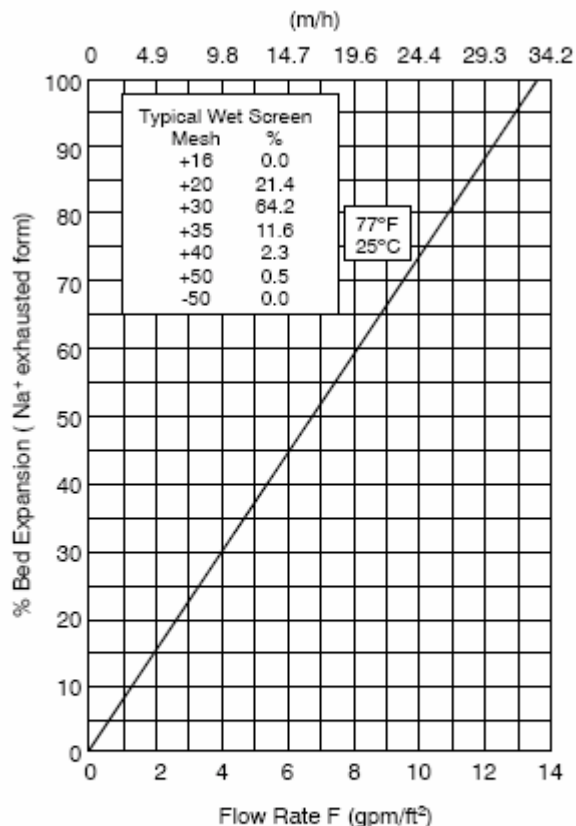
## Typical Properties and Applications

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.

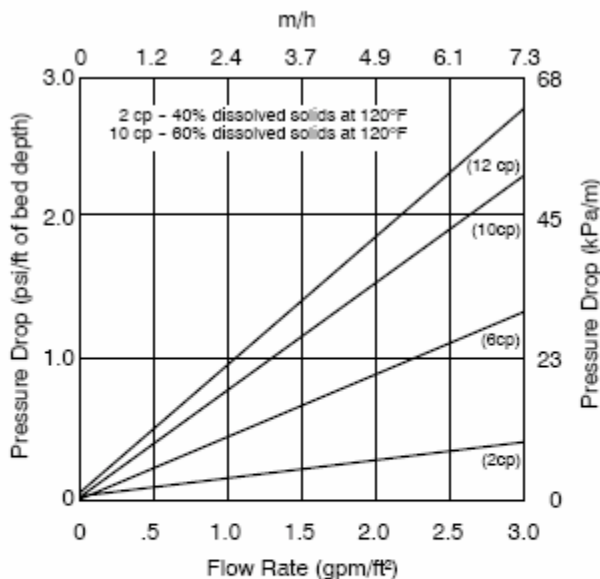
## Packaging

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

**Figure 1. Backwash Expansion Data**



**Figure 2. Pressure Drop Data**



**For other temperatures use:**

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

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

**For other temperatures use:**

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

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

## 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.

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