DOWEX MARATHON C

A Uniform Particle Size, High Capacity Cation Exchange Resin for Softening and Demineralization Applications

Product	Type	Matrix	Functional group
DOWEX* MARATHON* C	Strong acid cation	Styrene-DVB, gel	Sulfonic acid

Guaranteed Sales Specifications		Na^+ form	H^+ form
Total exchange capacity, min.	eq/l	2.0	1.8
	kgr/ft^3 as $CaCO_3$	43.7	39.3
Water content	%	42 - 48	50 - 56
Uniformity coefficient, max.		1.1	1.1

Typical Physical and Chemical Properties		Na^+ form	H^+ form
Mean particle size†	µm	585 ± 50	600 ± 50
Whole uncracked beads	%	95 - 100	95 - 100
Total swelling ($Na^+ \rightarrow H^+$)	%	8	8
Particle density	g/ml	1.28	1.20
Shipping weight	g/l	820	800
	lbs/ft^3	51	50

Recommended Operating Conditions

- Maximum operating temperature: 120°C (250°F)
- pH range: 0 - 14
- Bed depth, min.: 800 mm (2.6 ft)
- Flow rates:
  - Service/fast rinse: 5-60 m/h (2-24 gpm/ft^2)
  - Backwash: see figure 1
  - Co-current regeneration/displacement rinse: 1-10 m/h (0.4-4 gpm /ft^2)
  - Counter-current regeneration/displacement rinse: 5-20 m/h (2-8 gpm /ft^2)
- Total rinse requirement: 2 - 5 Bed volumes
- Regenerant: 1-8% H_2SO_4, 4-8% HCl or 8-12% NaCl

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Typical properties and applications

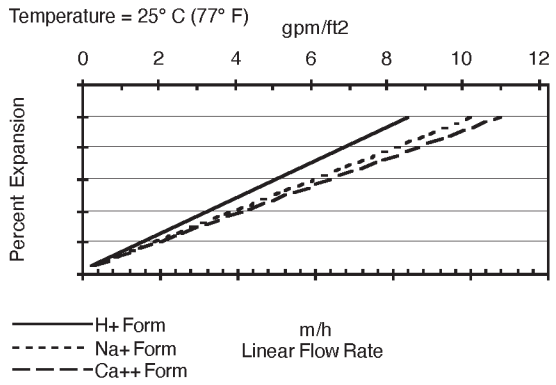
DOWEX MARATHON C strong acid cation exchange resin is a uniform particle size resin designed for demineralization applications. The small uniform beads exhibit faster kinetics than conventionally sized resins. The improved kinetics results in improved regeneration efficiency, higher operating capacity, reduced regenerant usage and less waste water.

DOWEX MARATHON C resin also shows outstanding stability to compressive and osmotic stress.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

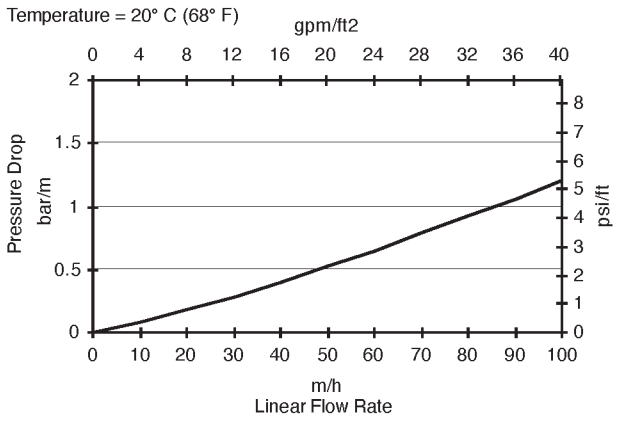


For other temperatures use:

$F_T = F_{77°F}$ [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

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