



## 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 <sup>+</sup> form	H <sup>+</sup> form
Total exchange capacity, min.	eq/l	2.0	1.8
	kgr/ft <sup>3</sup> as CaCO <sub>3</sub>	43.7	39.3
Water content	%	42 - 48	50 - 56
Uniformity coefficient, max.		1.1	1.1

Typical Physical and Chemical Properties		Na <sup>+</sup> form	H <sup>+</sup> form
Mean particle size <sup>†</sup>	μm	585 ± 50	600 ± 50
Whole uncracked beads	%	95 - 100	95 - 100
Total swelling (Na <sup>+</sup> → H <sup>+</sup> )	%	8	8
Particle density	g/ml	1.28	1.20
Shipping weight	g/l	820	800
	lbs/ft <sup>3</sup>	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<sup>2</sup>)
  - Backwash see figure 1
  - Co-current regeneration/displacement rinse 1-10 m/h (0.4-4 gpm /ft<sup>2</sup>)
  - Counter-current regeneration/displacement rinse 5-20 m/h (2-8 gpm /ft<sup>2</sup>)
- Total rinse requirement 2 - 5 Bed volumes
- Regenerant 1-8% H<sub>2</sub>SO<sub>4</sub>, 4-8% HCl or 8-12% NaCl

<sup>†</sup> For additional particle size information, please refer to Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

**Typical properties and applications**

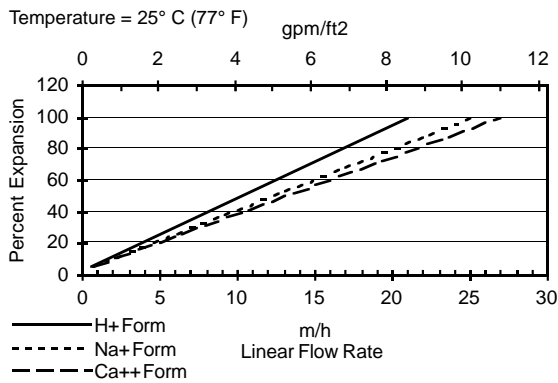
DOWEX MARATHON C strong acid cation exchange resin is a uniform particle size resin designed for demineralization applications. The small uniform beads exhibit faster kinetics than conventionally sized resins. The improved kinetics results in improved regeneration efficiency, higher operating capacity,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

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

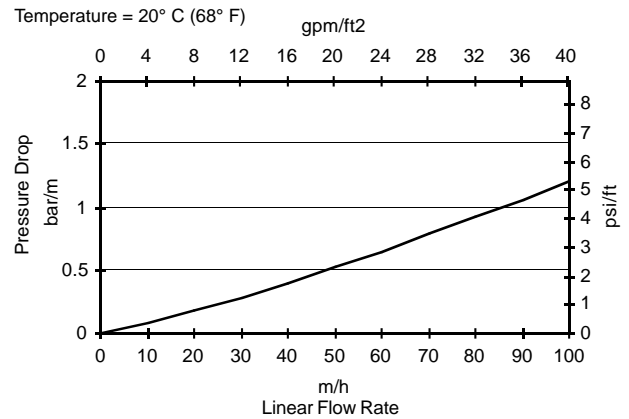
**Packaging**

25 liter bags or 5 cubic feet fiber drums

**Figure 1. Backwash Expansion Data**



**Figure 2. Pressure Drop Data**



**For other temperatures use:**

$F_T = F_{77°F} [1 + 0.008 (T_{°F} - 77)]$ , where  $F = \text{gpm/ft}^2$   
 $F_T = F_{25°C} [1 + 0.008 (1.8T_{°C} - 45)]$ , where  $F = \text{m/h}$

**For other temperatures use:**

$P_T = P_{20°C} / (0.026 T_{°C} + 0.48)$ , where  $P = \text{bar/m}$   
 $P_T = P_{68°F} / (0.014 T_{°F} + 0.05)$ , where  $P = \text{psi/ft}$

**DOWEX Ion Exchange Resins**  
**For more information about DOWEX resins, call the Dow Liquid Separations business:**

North America: 1-800-447-4369  
 Latin America: (+55) 11-5188-9277  
 Europe: (+32) 3-450-2240  
 Japan: (+81) 3-5460-2100  
 Australia: (+61) 3-9226-3545  
<http://www.dowex.com>

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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