



## DOWEX™ MARATHON™ C

A Uniform Particle Size, High Capacity Cation Exchange Resin for Softening (Industrial and Residential) 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†                                | 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

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

## Typical Properties and Applications

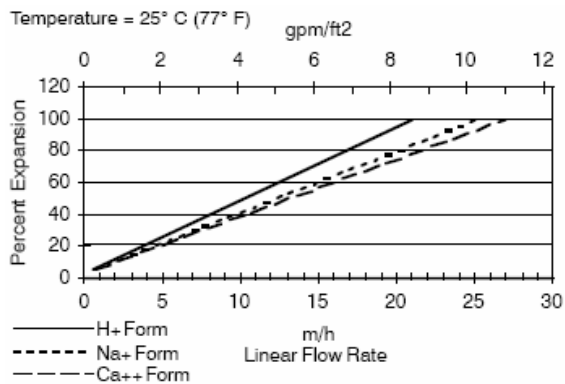
DOWEX™ MARATHON™ C strong acid cation exchange resin is a uniform particle size resin designed for industrial and residential softening and demineralization applications. The small uniform beads exhibit faster kinetics than conventionally sized resins. The improved kinetics results in improved regeneration 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

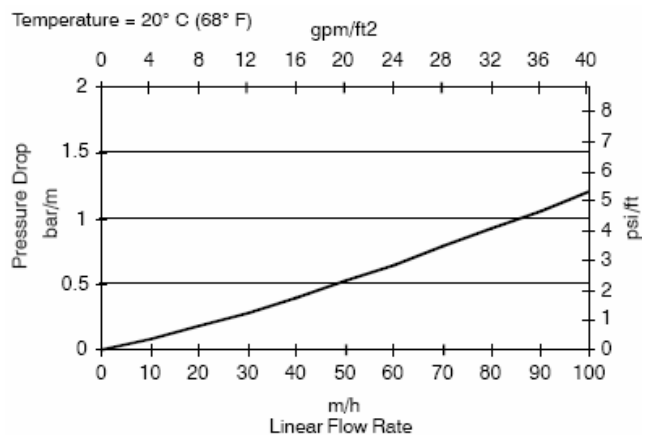


### For other temperatures use:

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

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

Figure 2. Pressure Drop Data



### For other temperatures use:

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

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

Note: These resins may be subject to drinking water application restrictions in some countries: please check the application status before use and sale.

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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