



## DOWEX MARATHON A

A Uniform Particle Size, High Capacity, Strong Base Anion Exchange Resin for Demineralization Applications

Product	Type	Matrix	Functional group
DOWEX* MARATHON* A	Type 1 strong base anion	Styrene-DVB gel	Quaternary amine

Guaranteed Sales Specifications		Cl <sup>-</sup> form	OH <sup>-</sup> form
Total exchange capacity, min.	eq/l	1.3	1.0
	kgr/ft <sup>3</sup> as CaCO <sub>3</sub>	28.4	21.9
Water content	%	50 – 60	60 – 72
Uniformity coefficient, max.		1.1	1.1

Typical Physical and Chemical Properties		Cl <sup>-</sup> form	OH <sup>-</sup> form
Mean particle size†	µm	575 ± 50	610 ± 50
Whole uncracked beads	%	95 – 100	95 – 100
Total swelling (Cl <sup>-</sup> → OH <sup>-</sup> )	%	20	20
Particle density	g/ml	1.08	1.06
Shipping weight, approx.	g/l	670	640
	lbs/ft <sup>3</sup>	42	40

### Recommended Operating Conditions

- Maximum operating temperature:
  - OH<sup>-</sup> form 60°C (140°F)
  - Cl<sup>-</sup> form 100°C (212°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 3-6 Bed volumes
- Regenerant:
  - Type 2-5% NaOH
  - Temperature Ambient or up to 50°C (122°F) for silica removal

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

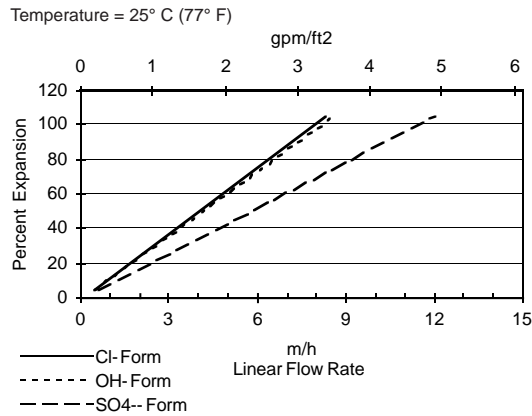
## Typical properties and applications

DOWEX MARATHON A anion exchange resin is specifically designed to give high throughput and economical operation in primary demineralizer beds. Because of its uniform particle size, this resin offers a number of economic advantages over conventional (polydispersed) resins. The small uniform bead size of DOWEX MARATHON A resin results in rapid exchange kinetics during operation, more complete regeneration of the resin, and faster, more thorough rinse following regeneration. It can be used for all types of water but especially for waters that have a high percentage of silica and carbon dioxide.

## Packaging

25 liter bags or 5 cubic feet fiber drums

**Figure 1. Backwash Expansion Data**

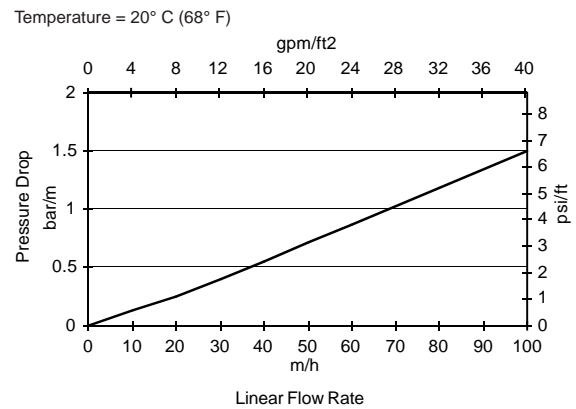


**For other temperatures use:**

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

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

**Figure 2. Pressure Drop Data**



**For other temperatures use:**

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

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

**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.

Notice: No freedom from any patent owned by Seller or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Seller assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

