

**DOWEX MARATHON WBA**

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

Product	Type	Matrix	Functional group
DOWEX™ MARATHON™ WBA	Weak base anion	Styrene-DVB, macroporous	Tertiary amine

Guaranteed Sales Specifications		FB (free base) form
Total exchange capacity, min.	eq/L kg/ft ³ as CaCO ₃	1.3 28.4
Water content	%	50 - 60
Uniformity coefficient, max.		1.1

Typical Physical and Chemical Properties		FB (free base) form
Mean particle size†	µm	525 ± 50
Whole beads	%	95 - 100
Total swelling (FB → HCl)	%	20
Particle density	g/mL	1.04
Shipping weight	g/L lbs/ft ³	640 40

Recommended Operating Conditions

- Maximum operating temperature 100°C (212°F)
- pH range 0 - 7
- Bed depth, min. 800 mm (2.6 ft)
- Flow rates:
 - Service/fast rinse 5 - 60 m/h (2 - 24 gpm/ft²)
 - Backwash See figure 1
 - Co-current regeneration/displacement rinse 1 - 10 m/h (0.4 - 4 gpm /ft²)
 - Counter-current regeneration/displacement rinse 5 - 20 m/h (2 - 8 gpm /ft²)
- Total rinse requirement 2 - 4 Bed volumes
- Regenerant: 2 - 5% NaOH

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

Typical properties and applications

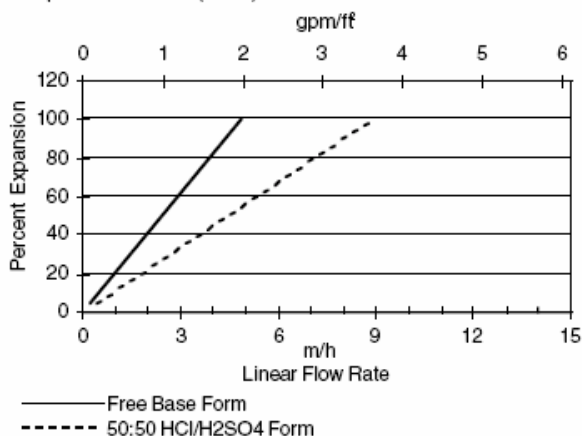
DOWEX MARATHON WBA resin is a high capacity, macroporous, weak base anion resin of narrow bead-size distribution. The small uniform bead size yields significantly higher throughput capacity than macroporous weak base resins with conventional polydispersed bead size distribution. This means more water can be produced per regeneration so regeneration costs are minimized. DOWEX MARATHON WBA resin is especially well suited for use with strong base resins. It effectively removes mineral acids (formed by Cl^- and SO_4^{2-}) and organics, reducing the ionic load on the strong base anion and protecting it from organic fouling.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

Temperature = 25° C (77° F)



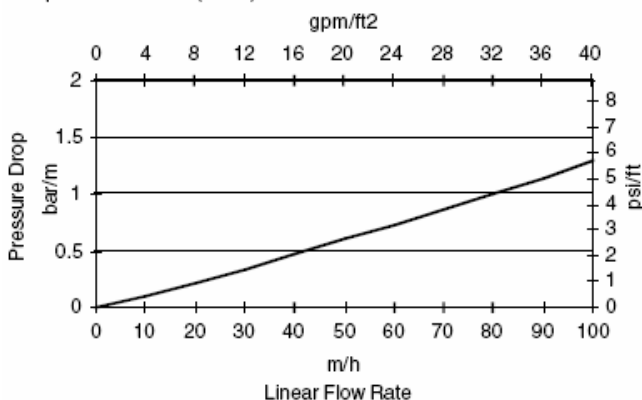
For other temperatures use:

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

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

Figure 2. Pressure Drop Data

Temperature = 20° C (68° F)



For other temperatures use:

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

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

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.

