



DOWEX MARATHON WBA-2

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

Product	Type	Matrix	Functional group
DOWEX* MARATHON* WBA-2	Weak base anion	Styrene-DVB, macroporous	Tertiary amine

Guaranteed Sales Specifications		FB (free base) form
Total exchange capacity, min.	eq/L	1.7
	kgr/ft ³ as CaCO ₃	37.1
Water content	%	40 - 51
Uniformity coefficient, max.		1.1

Typical Physical and Chemical Properties		FB (free base) form
Mean particle size [†]	μm	550 ± 50
Whole beads	%	95 - 100
Total swelling (FB → HCl)	%	23
Particle density	g/mL	1.04
Shipping weight	g/L	640
	lbs/ft ³	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 - 30 m/h (2 - 12 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 - 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

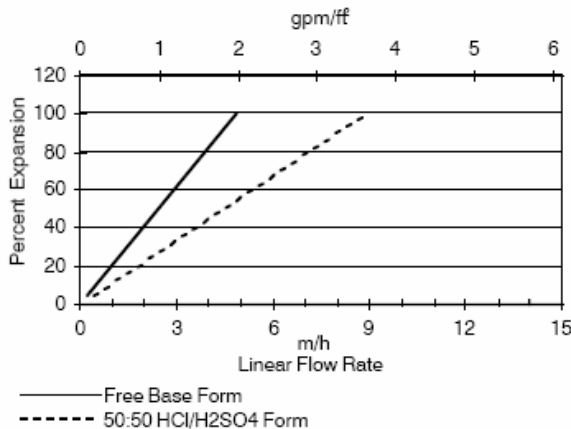
DOWEX MARATHON WBA-2 resin is a macroporous, weak base anion resin of narrow bead size distribution that has very high exchange capacity and physical durability. The small uniform bead size yields significantly higher throughput capacity than macroporous weak base resins with conventional polydispersed bead size distribution. When operated at moderate co-current demineralization flow rates, this resin offers excellent operating capacity, particularly with feed containing high alkalinity (undegassed). This means more water can be produced per regeneration so regeneration costs are minimized. DOWEX MARATHON WBA-2 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 foot fiber drums

Figure 1. Backwash Expansion Data

Temperature = 25° C (77° F)



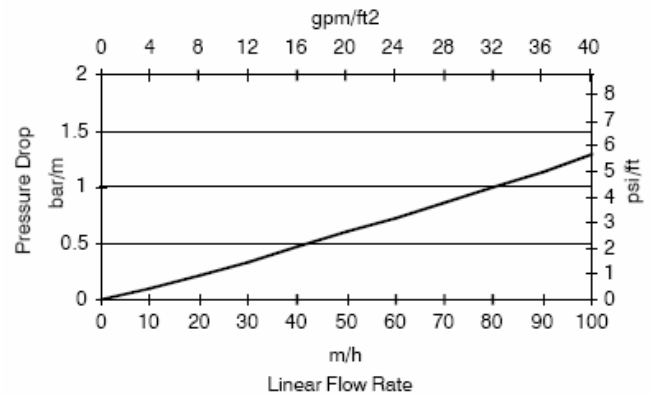
For other temperatures use:

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

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

Figure 2. Pressure Drop Data

Temperature = 20° C (68° F)



For other temperatures use:

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

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

DOWEX Ion Exchange Resins

For more information about DOWEX resins, call the Dow Liquid Separations business:

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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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