



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 lbs/ft ³	640 40

Recommended Operating Conditions	
Maximum operating temperature	60°C (140°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
Organic loading, max.	
Layered bed	15 g KMnO ₄ /l resin
Single resin	25 g KMnO ₄ /l resin

[†]For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775/CH 171-476-E).

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DOWEX Ion Exchange Resins

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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. The small uniform bead size yields significantly higher throughput capacity than macroporous weak base resins with conventional polydispersed bead size distribution. When operated at

normal co-current demineralization flow rates, this resin offers excellent operating capacity and physical durability. 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 (Cl^- and SO_4^{2-})

and organics, reducing the ionic load on the strong base anion and protecting it from organic fouling. DOWEX MARATHON WBA-2 should also be considered for waters with high potential for organic fouling.

Packaging

25 liter bags or 5 cubic feet fiber drums.

Figure 1. Backwash Expansion Data

Temperature = 25° C (77° F)

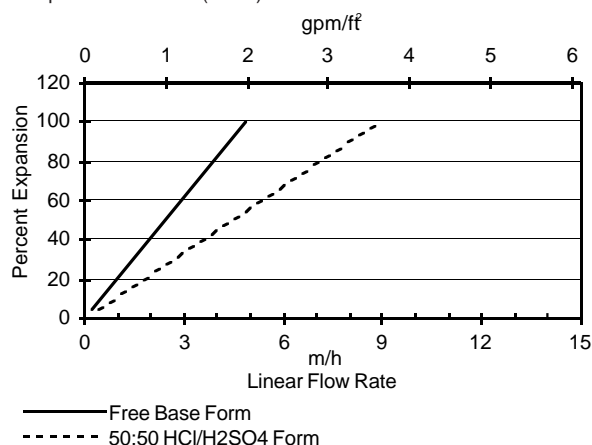
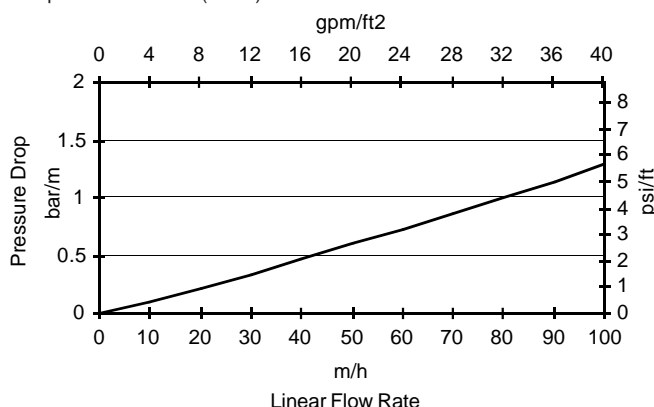


Figure 2. Pressure Drop Data

Temperature = 20° C (68° F)



For other temperatures use:

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

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

For other temperatures use:

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

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

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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