



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	1.3
	kgr/ft ³ as CaCO 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	60°C (140°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/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).

*Trademark of The Dow Chemical Company

DOWEX Ion Exchange Resins

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

North America 1-800-447-4369
 Latin America (+55) 11-5188-9345
 Europe (+31) 20-691-6268
 Japan (+81) 3-5460-2100
 Australia (+61) 2-9776-3226
<http://www.dow.com/liquidseps>

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 (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)

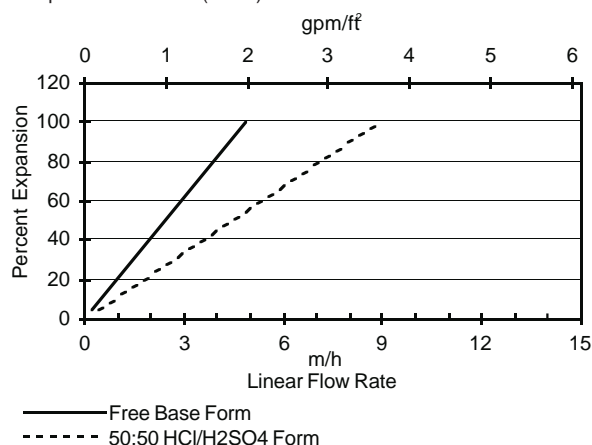
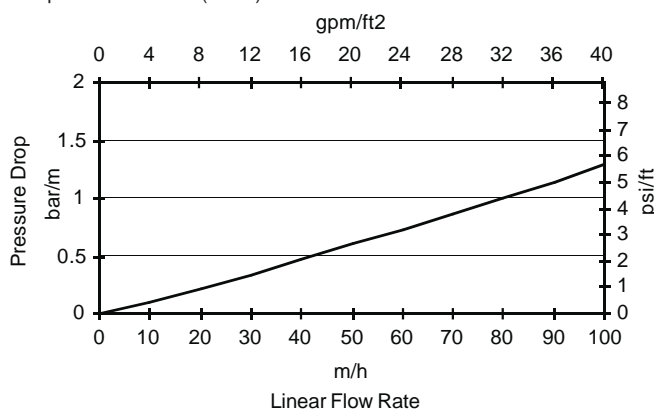


Figure 2. Pressure Drop Data

Temperature = 20° C (68° F)



For other temperatures use:

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

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

For other temperatures use:

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

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

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.**

Published September 1998.

