



DOWEX MARATHON A2

An Efficient, Uniform Particle Size, High Capacity, Type 2 Strong Base Anion Exchange Resin for Demineralization Applications

Product	Type	Matrix	Functional group
DOWEX* MARATHON* A2	Type 2 strong base anion	Styrene-DVB, gel	Dimethylethanol amine

Guaranteed Sales Specifications		Cl ⁻ form
Total exchange capacity, min.	eq/l	1.2
	kgr/ft ³ as CaCO ₃	26.2
Water content	%	45 - 54
Uniformity coefficient, max.		1.1

Typical Physical and Chemical Properties		Cl ⁻ form
Mean particle size [†]	µm	550 ± 50
Whole uncracked beads	%	95 - 100
Total swelling (Cl ⁻ → OH ⁻)	%	20
Particle density	g/ml	1.09
Shipping weight	g/l	690
	lbs/ft ³	43

Recommended Operating Conditions		
Maximum operating temperature:	OH ⁻ form	35°C (95°F)
	Cl ⁻ form	70°C (160°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 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		3-6 Bed volumes
Regenerant:	Type	2-5% NaOH
	Temperature	Ambient or up to 35°C (95°F) for silica removal
Organic loading max.		5 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

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*A2 anion exchange resin is specifically designed to give high throughput and economical operation in primary demineralizer beds. Its uniform particle size offers a number of economic advantages over conventional polydispersed resins. The small uniform bead size of

DOWEX MARATHON A2 resin results in rapid exchange kinetics during operation, more complete regeneration of the resin, and faster, more thorough rinse following regeneration. It is normally used for waters in which silica and carbon dioxide do not exceed 25% of the total anions. For water containing

higher levels of these "weak" acids, DOWEX MARATHON A resin is recommended.

Packaging

25 liter bags or 5 cubic feet fiber drums.

Figure 1. Backwash Expansion Data

Temperature = 25° C (77° F)

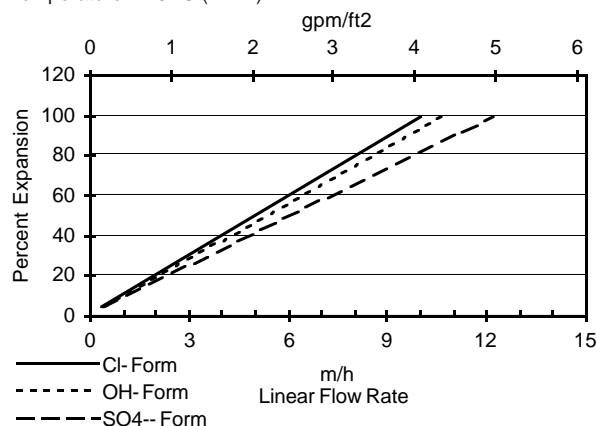
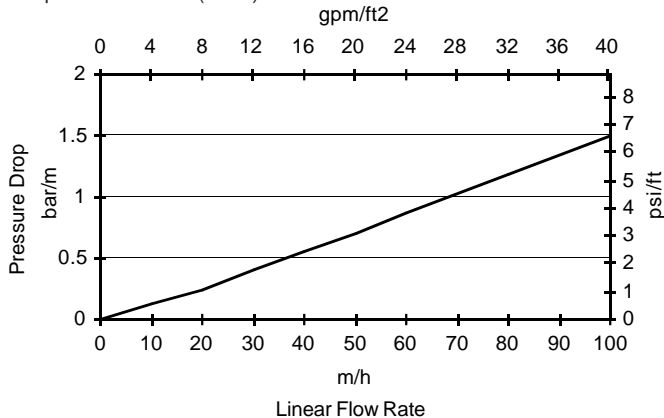


Figure 2. Pressure Drop Data

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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