DOWEX MARATHON MSA

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

Product	Type	Matrix	Functional group
DOWEX* MARATHON* MSA	Type 1 strong base anion	Styrene-DVB, Macroporous	Quartenary amine

Guaranteed Sales Specifications		Cl^- form
Total exchange capacity, min.	eq/l	1.1
	kgr/ft^3 as $CaCO_3$	24.0
Water content	%	56 - 66
Uniformity coefficient, max.		1.1

Typical Physical and Chemical Properties		Cl^- form
Mean particle size†	µm	640 ± 50
Whole beads	%	95 - 100
Total swelling ($Cl^- \rightarrow OH^-$)	%	15
Particle density	g/ml	1.06
Shipping weight	g/l	670
	lbs/ft^3	42

Recommended Operating Conditions	
Maximum operating temperature:	
OH^- form	60°C (140°F)
Cl^- form	100°C (212°F)
pH range	0-14
Bed depth, min.	800 mm (2.6 ft)
Flow rates:	
Service/fast rinse	5-50 m/h (2-20 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	5-7 Bed volumes
Regenerant:	
Type	4-8% NaOH
Temperature	Ambient or up to 50°C (122°F) for silica removal
Load of organic matter, max.	5 g $KMnO_4$/l

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

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 MSA resin is a uniform particle size macroporous strong base anion resin which has exceptional physical stability, excellent resistance to osmotic shock, and very good organic fouling resistance.

It is well suited for use in demineralization of high organic waters, catalysis, and the extraction of heavy metals in the form of complex anions.

Packaging

25 liter bags or 5 cubic feet fiber drums.

Figure 1. Backwash Expansion Data

Temperature = 25° C (77° F)

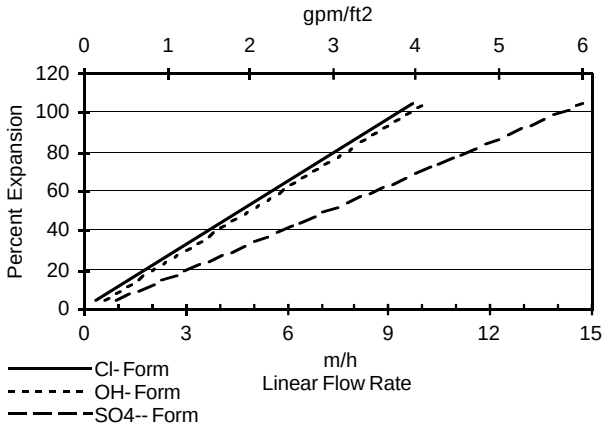
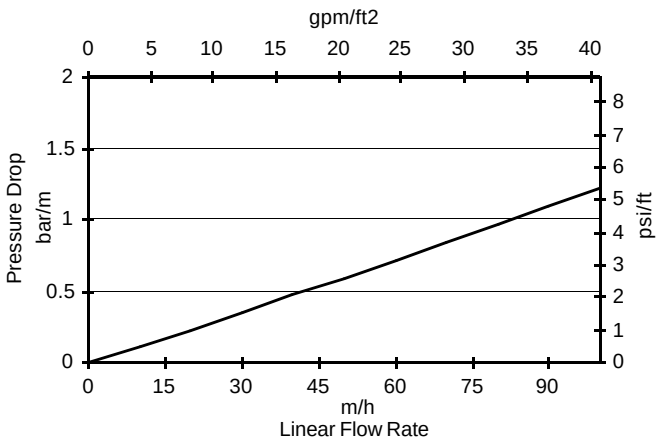


Figure 2. Pressure Drop Data

Temperature = 20° C (68° F)



For other temperatures use:

$F_T = F_{77°F}$ [1+ 0.008 ($T_{°F}$ -77)], where F ≡ gpm/ft^2
$F_T = F_{25°C}$ [1+ 0.008 (1.8$T_{°C}$ - 45)], where F ≡ m/h

For other temperatures use:

$P_T = P_{20°C}$ / (0.026 $T_{°C}$ + 0.48), where P ≡ bar/m
$P_T = P_{68°F}$ / (0.014 $T_{°F}$ + 0.05), where P ≡ 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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