



DOWEX™ MARATHON™ MSA

Uniform Particle Size, High Capacity, Macroporous Strong Base Anion Exchange Resin

Product	Type	Matrix	Functional group
DOWEX™ MARATHON™ MSA	Type I strong base anion	Styrene-DVB, macroporous	Quaternary amine

Guaranteed Sales Specifications		Cl ⁻ form
Total exchange capacity, min.	eq/L kgr/ft ³ as CaCO ₃	1.1 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 ⁻ → OH ⁻)	%	15
Particle density	g/mL	1.06
Shipping weight	g/L lbs/ft ³	670 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/ft²)
 - Backwash See Figure 1
 - Co-current regeneration/displacement rinse 1 - 10 m/h (0.4 - 4 gpm/ft²)
 - Counter-current regeneration/displacement rinse 5 - 20 m/h (2 - 8 gpm/ft²)
- Total rinse requirement 5 - 7 Bed volumes
- Regenerant:
 - Type 4 - 8% NaOH
 - Temperature Ambient or up to 50°C (122°F) for silica removal

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

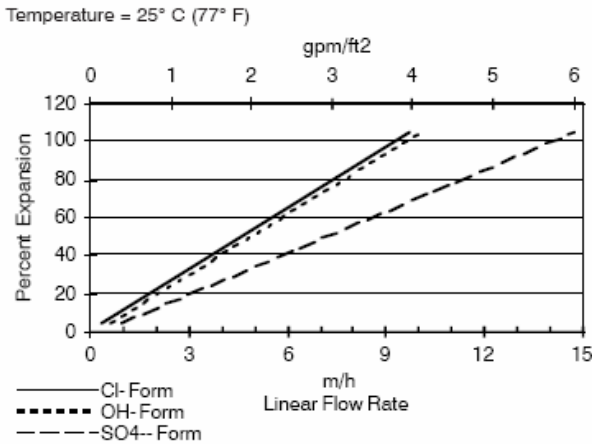
Typical Properties and Applications

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, Cane Sugar De-colorization and the extraction of heavy metals in the form of complex anions.

Packaging

25 liter bags or 5 cubic foot fiber drums

Figure 1. Backwash Expansion Data

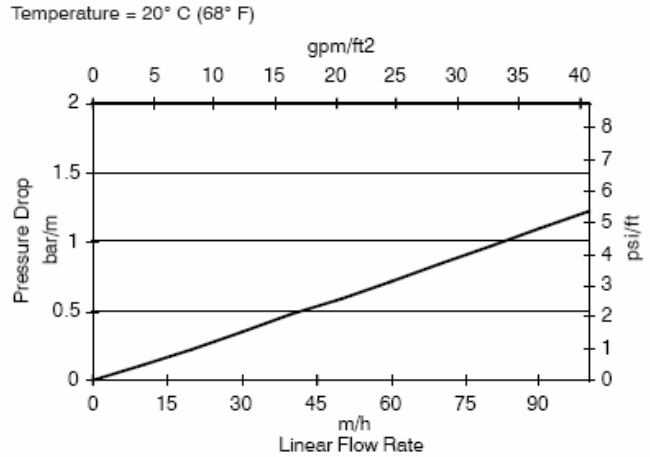


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

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

DOWEX™ Ion Exchange Resins

For more information about DOWEX resins, call the Dow Water Solutions business:

North America: 1-800-447-4369
 Latin America: (+55) 11-5188-9222
 Europe: (+32) 3-450-2240
 Pacific: +60 3 7958 3392
 Japan: +813 5460 2100
 China: +86 21 2301 9000

<http://www.dowex.com>

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.

