



Tel: +44 (0) 1706 869777
E-mail: sales@desal.co.uk
Web: www.desal.co.uk

DOWEX™ MARATHON™ 11

A Uniform Particle Size, Porous Gel, Strong Base Anion Exchange Resin Specifically Designed for Demineralization of High Organic Waters and as an Organic Scavenger

Product	Type	Matrix	Functional group
DOWEX™ MARATHON™ 11	Type I strong base anion	Styrene-DVB, gel	Quaternary amine

Guaranteed Sales Specifications			Cl ⁻ form
Total exchange capacity, min.	eq/L		1.3
	kg/ft ³ as CaCO ₃		28.4
Water content	%		48 - 58
Uniformity coefficient, max.			1.1

Typical Physical and Chemical Properties			Cl ⁻ form
Whole uncracked beads	%		95 - 100
Mean particle size†	µm		550 ± 50
Total swelling (Cl ⁻ → OH ⁻)	%		20
Particle density	g/mL		1.08
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/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 2 - 5 Bed volumes
- Regenerant:
 - Type 2-5% NaOH
 - Type (organic screen) 10% NaCl / 1% NaOH mixture
 - Temperature Ambient or up to 50°C (122°F) for silica removal
 - Temperature (organic screen) Ambient or up to 50°C (122°F)

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

**As per the backwashed and settled density of the resin, determined by ASTM D-2187

Typical Properties and Applications

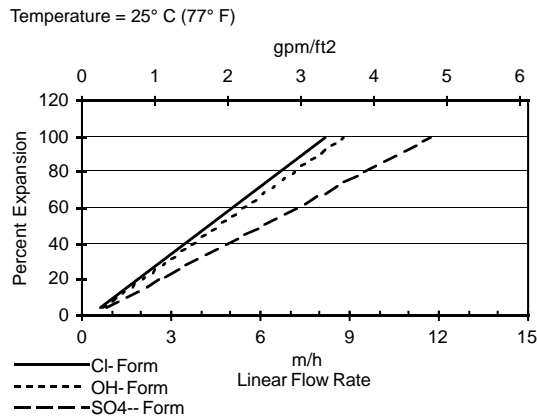
DOWEX™ MARATHON™ 11 strong base anion resin is a high capacity resin with excellent kinetics, very good regeneration efficiency and very good resistance to organic fouling. It also has excellent resistance to osmotic shock and good physical and chemical stability.

It's unique resistance to organic fouling enables this resin to be used in Cl form as an organic scavenger with great success. DOWEX MARATHON 11 anion exchange resin can be used to remove organics in both single bed and mixed bed units.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

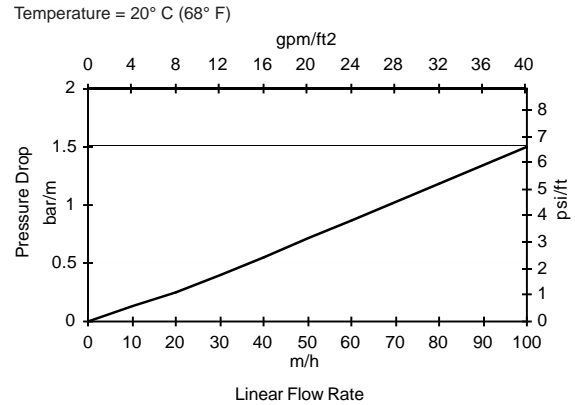


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

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

DOWEX Ion Exchange Resins

For more information about DOWEX resins, call the Dow Liquid Separations 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.

