



DOWEX™ MARATHON™ C-10 Resin

A Uniform Particle Size, High Capacity Cation Exchange Resin For Industrial Softening and Demineralization Applications

Description

DOWEX™ MARATHON™ C-10 Strong Acid Cation Exchange Resin is a uniform particle size resin designed for demineralizing, industrial softening, and mixed bed polishing applications. The uniform particle size beads exhibit more uniform exhaustion, regeneration, and backwash compared to conventionally sized resins. The higher level of crosslinking in DOWEX MARATHON C-10 Resin also shows exceptional stability to compressive, osmotic, and oxidative stresses.

Typical Physical and Chemical Properties

Physical Form		Strong acid cation	
Matrix		Styrene-DVB, gel	
Functional group		Sulfonic acid	
Ionic form as shipped		Na+ form	H+ form
Total volume capacity, min.	eq/L kgr/ft ³ as CaCO ₃	2.2 48.1	1.9 41.5
Moisture retention capacity	%	40–45	46–51
Particle size †			
Uniformity coefficient, max.		1.1	1.1
Harmonic mean diameter	µm	630 ± 50	650 ± 50
Whole uncracked beads	%	95–100	95–100
Total swelling (Na+ → H+)	%	7	7
Particle density	g/mL	1.31	1.22
Shipping density**	g/L	845	785
	lbs/ft ³	53	49

† 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.

Maximum operating temperature	130°C (265°F)
pH range	0–14
Bed depth, min.	800 mm (2.6 ft)
Flow rates:	
Service/demineralizing and softening	5–50 BV/hr (1-6 gpm/ft ³)
Service/mixed bed	24–75 m/h (10-25 gpm/ft ²)
Backwash	See Figure 1
Regenerants (100% basis)	
HCl	2–5 BV/hr (0.5–1 gpm/ft ³)
H ₂ SO ₄	2–20 BV/hr (0.5–4 gpm/ft ³)
Total rinse requirement	2–5 BV*
Regenerant	1–8% H ₂ SO ₄ , 4–8% HCl or 8–12% NaCl

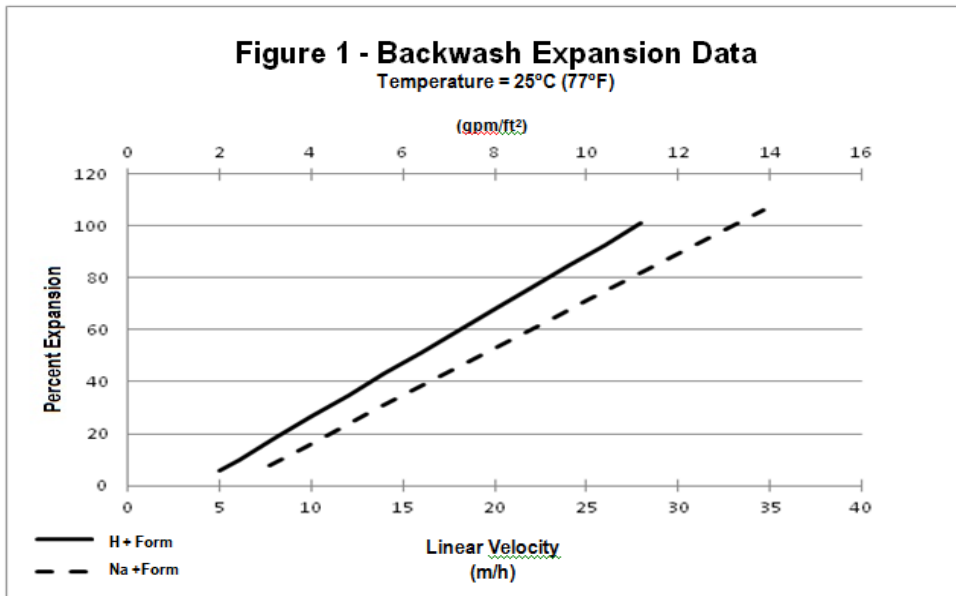
*1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gals per ft³ resin

Packaging

25 liter bags, 1 cubic foot bags or 5 cubic foot fiber drums.

Hydraulic Characteristics

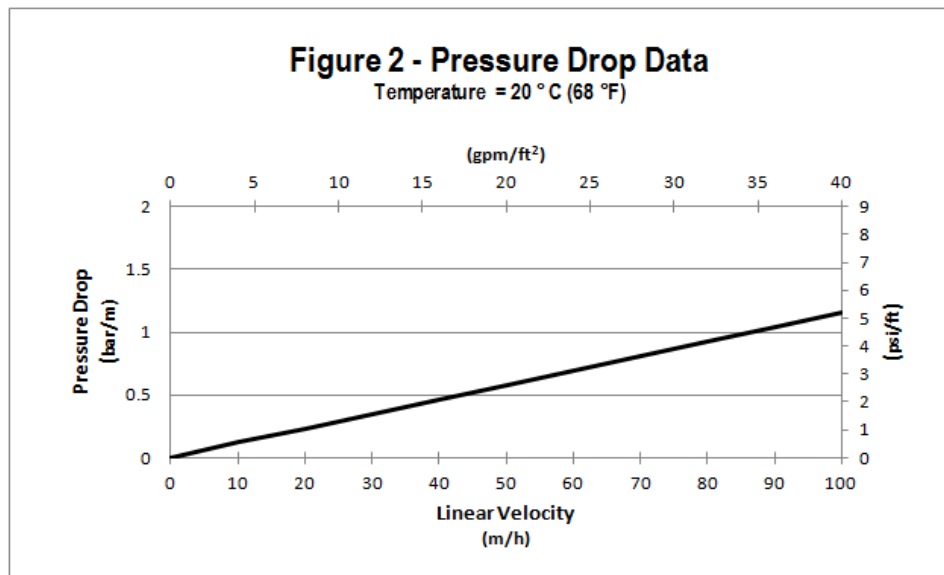
Figure 1 shows the bed expansion of DOWEX™ MARATHON™ C-10 Resin as a function of backwash flowrate and water temperature. Figure 2 shows the pressure drop data for DOWEX MARATHON C-10 Resin as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with clear water and a correctly classified bed.



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:

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

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

Handling Precautions

Before using this product, or the analytical reagents required for its control, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on material hazards, recommended handling precautions and product storage.

CAUTION! Keep combustible and/or flammable products and their vapors away from heat, sparks, flames and other sources of ignition including static discharge. Processing or operating at temperatures near or above product flashpoint may pose a fire hazard. Use appropriate grounding and bonding techniques to manage static discharge hazards.

CAUTION! Failure to maintain proper volume level when using immersion heaters can expose tank and solution to excessive heat resulting in a possible combustion hazard, particularly when plastic tanks are used.

Storage

Store products in tightly closed original containers at temperatures recommended on the product label.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Electronic Materials Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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DOW™ Ion Exchange Resins
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