



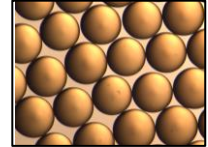
Product Data Sheet

**DOWEX MARATHON™ 1300 H Ion Exchange Resin**

Uniform Particle Size, Strong Acid Cation Exchange Resin for Industrial Demineralization Applications

**Description**

DOWEX MARATHON™ 1300 H Ion Exchange Resin is designed for water utility operators and power plant chemists who are concerned with achieving maximum water and chemical efficiency. The polymer density and particle size of the resin have been designed to operate with DOWEX MARATHON 8300 in new and retrofitted layered beds.



Additionally, DOWEX MARATHON 1300 H can be used in working and polishing mixed beds when very low sodium leakage and conductivity is a chief concern.

**Typical Physical and Chemical Properties\*\***

Matrix	Styrene-divinylbenzene, gel
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Dark brown, translucent, spherical beads
Ionic Form as Shipped	H <sup>+</sup> Form
Total Exchange Capacity	≥ 2.0 eq/L
Water Retention Capacity	45 – 51%
Particle Size	
Particle Diameter <sup>b</sup>	650 ± 50 µm
Uniformity Coefficient	≤ 1.1
< 300 µm	≤ 0.1%
Whole Uncracked Beads	≥ 95%
Swelling	Na <sup>+</sup> → H <sup>+</sup> : 7%
Bulk Density, as shipped <sup>c</sup>	785 g/L

<sup>b</sup> For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 177-01775).

<sup>c</sup> As per the backwashed and settled density of the resin, determined by ASTM D-2187.

## Suggested Operating Conditions\*\*

Maximum Operating Temperature	130°C (266°F)		
pH Range	0 – 14		
Bed Depth, min.	800 mm (2.6 ft.)		
Flowrates			
Service	5 – 60 BV*/h (1 – 7.5 gpm/ft <sup>3</sup> )		
Backwash	See Figure 1		
Regeneration			
Chemical Injection			
HCl	2 – 4 BV/h (0.25 – 0.5 gpm/ft <sup>3</sup> )		
H <sub>2</sub> SO <sub>4</sub>	2 – 20 BV/h (0.25 – 2.5 gpm/ft <sup>3</sup> )		
Displacement Rinse	1 – 2 BV at 2 – 4 BV/h (0.25 – 0.5 gpm/ft <sup>3</sup> )		
Fast Rinse	2 – 4 BV at 5 – 50 BV/h (1 – 6 gpm/ft <sup>3</sup> )		
Total Rinse Requirement	3 – 6 BV		
Regenerant			
H <sub>2</sub> SO <sub>4</sub>	HCl	NaCl	
Concentration	1 – 8%	4 – 8%	8 – 12%

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin or 7.5 gal per ft<sup>3</sup> resin

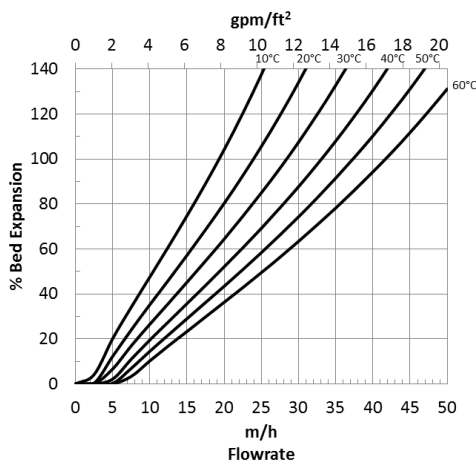
## Hydraulic Characteristics

Bed expansion of DOWEX MARATHON™ 1300 H Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Pressure drop data for DOWEX MARATHON 1300 H as a function of service flowrate and temperature is shown in Figure 2. Pressure drop data are valid at the start of the service run with clean water.

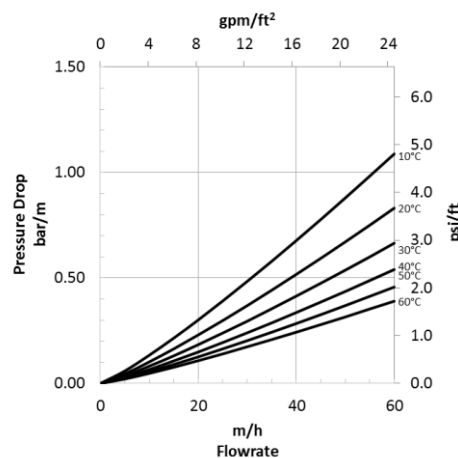
**Figure 1: Backwash Expansion**

Temperature = 10 – 60°C (50 – 140°F)



**Figure 2: Pressure Drop**

Temperature = 10 – 60°C (50 – 140°F)



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**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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