Product Data Sheet

DOWEX MARATHON™ 4200 Ion Exchange Resin

Uniform Particle Size, Strong Base Anion Exchange Resin for *High Efficiency* Industrial Demineralization Applications

Description

DOWEX MARATHON™ 4200 Ion Exchange Resin is designed for water utility operators and power plant chemists who are concerned with achieving maximum water and chemical efficiency. The chemical properties and particle size of the resin have been optimized to help yield excellent operating capacity and rinse characteristics, reducing chemical regenerant and rinse water usage while maintaining a superior physical stability that users of DOWEX MARATHON™ Resins have come to know through more than 25 years of successful operation. This allows users to simultaneously minimize operating costs and environmental impacts while also preserving precious raw water resources.

While the benefits of DOWEX MARATHON 4200 can be realized in standard co-flow regenerated systems and counter-current (packed bed) systems such as the AMBERPACK™ and UPCORE™ Ion Exchange Systems, it is ideal when used in new and retrofitted layered bed systems with DOWEX MARATHON™ 9600 systems for improved water and chemical efficiency.

Typical Physical and Chemical Properties**

Matrix	Styrene-divinylbenzene, gel	
Type	Strong base anion	
Functional Group	Quaternary amine	
Physical Form	Yellow, translucent, spherical beads	
Ionic Form as Shipped	**Cl^- Form**	**OH^- Form**
Total Exchange Capacity (Typical)	1.4 eq/L	1.1 eq/L
Total Exchange Capacity (Minimum)	1.3 eq/L	1.1 eq/L
Water Retention Capacity	49 – 55%	58-72%
Particle Size		
Particle Diameter [a]	700 ± 100 µm	
Uniformity Coefficient	≤ 1.25	
< 425 µm	≤ 0.5%	
Bulk Density, as shipped	670 g/L	655 g/L
Swelling	$Cl^- \rightarrow OH^-$: 30%	

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

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Suggested Operating Conditions**

Maximum Operating Temperature [b]	
Cl^- Form	100°C (212°F)
OH^- Form	60°C (140°F)
pH Range	0 – 14
Regenerant	NaOH
Concentration	2 – 6%

[b] For additional information please refer to The Recommended Operating Conditions Tech-Facts (Form 177-03705)

Hydraulic Characteristics

Bed expansion of DOWEX MARATHON™ 4200 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Pressure drop data for DOWEX MARATHON 4200 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)

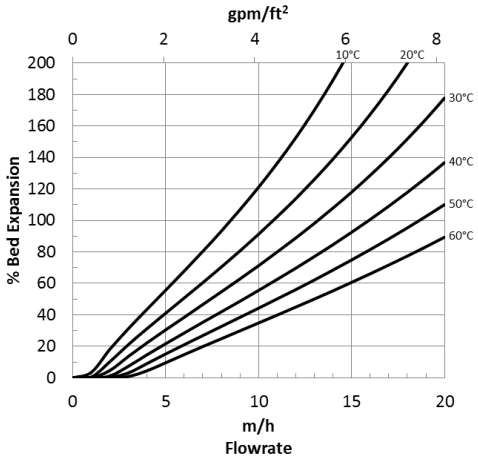
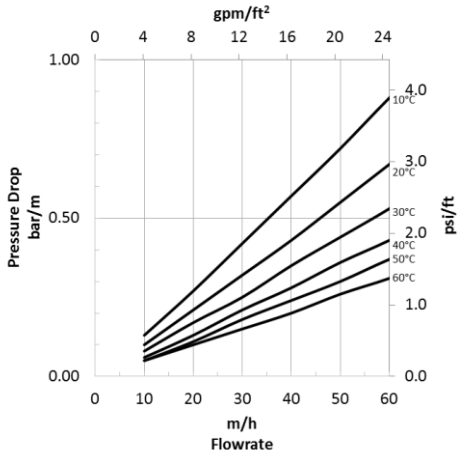


Figure 2: Pressure Drop

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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