

**DOWEX HGR-W2**

A High Capacity Strong Acid Cation Exchange Resin for Mixed Bed Demineralization and Condensate Polishing Applications

Product	Type	Matrix	Functional group
DOWEX™ HGR-W2	Strong acid cation	Styrene-DVB gel	Sulfonic acid

Guaranteed Sales Specifications			H ⁺ form			
Total exchange capacity, min.	eq/L		2.0			
	kgr/ft ³ as CaCO ₃		43.7			
Water content	%		47 - 51			
Bead size distribution [†]	> 1,200 μm, max. (16 mesh)	%	2			
	< 420 μm, max. (40 mesh)	%	1			
Whole uncracked beads, min.	%		95			
Crush strength	Average, min.	g/bead	350			
	> 200 g/bead, min.	%	95			
Ionic conversions, H ⁺ form, min.	%		99			
Trace metals, ppm dry resin, max. (H ⁺ form)						
Na	Fe	Cu	Al	Mg	Ca	Heavy metals (as Pb)
50	50	10	50	50	50	10

Typical Physical and Chemical Properties			H ⁺ form			
Total swelling (Na ⁺ → H ⁺)	%		7			
Particle density	g/mL		1.23			
Shipping weight	g/L		820			
	lbs/ft ³		51			

Recommended Operating Conditions

- Maximum operating temperature: 130°C (265°F)
- pH range: 0 - 14
- Bed depth, min.: 450 mm (1.5 ft)
- Flow rates:
 - Service/fast rinse: 5 - 50 m/h (2 - 20 gpm/ft²)
 - Service/condensate polishing: 40 - 150 m/h (16 - 60 gpm/ft²)
 - Backwash: See figure 1
 - Regeneration/displacement rinse: 1 - 10 m/h (0.4 - 4 gpm /ft²)
- Total rinse requirement: 3 - 6 Bed volumes
- Regenerant:
 - 1 - 10% H₂SO₄, 4 - 8% HCl or
 - 8 - 12% NaCl

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

Typical properties and applications

DOWEX HGR-W2 strong acid cation resin is a premium grade product with high exchange capacity, excellent resistance to attrition and good resistance to thermal and oxidative degradation.

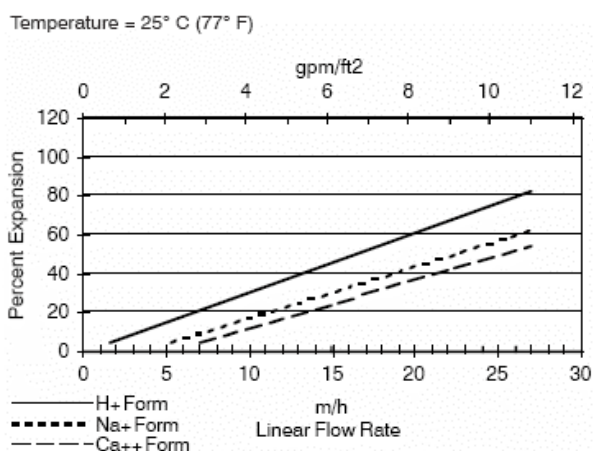
The high cross-linkage results in increased density which improves separation following backwash in mixed bed applications.

DOWEX HGR-W2 resin can be used in combination with DOWEX MONOSULFONATE DOWEX SBR-P C (OH) or DOWEX SBR C (OH) anion exchange resins in mixed beds for deep-bed condensate polishing. It is also used in single beds for sodium cycle condensate polishing.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

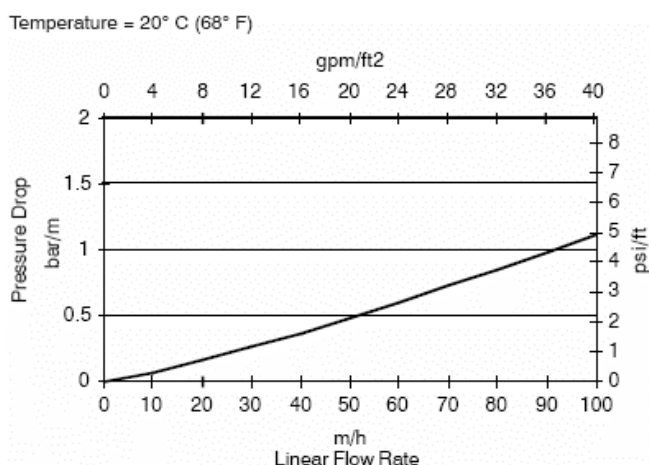


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

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

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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