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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/ft^2)
  Service/condensate polishing   40 - 150 m/h (16 - 60 gpm/ft^2)
  Backwash   See figure 1
  Regeneration/displacement rinse   1 - 10 m/h (0.4 - 4 gpm /ft^2)
- Total rinse requirement   3 - 6 Bed volumes
- Regenerant: 1 - 10% H$_2$SO$_4$, 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).

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DOWEX Ion Exchange Resins
Form No. 177-01588-904

Typical properties and applications

DOWEX HGR-W2 strong acid cation resin is a premium grade product with high exchan 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 MONOSPHERE*N 0 50 A, 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 conden polishing.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

Temperature = 25° C (77° F)
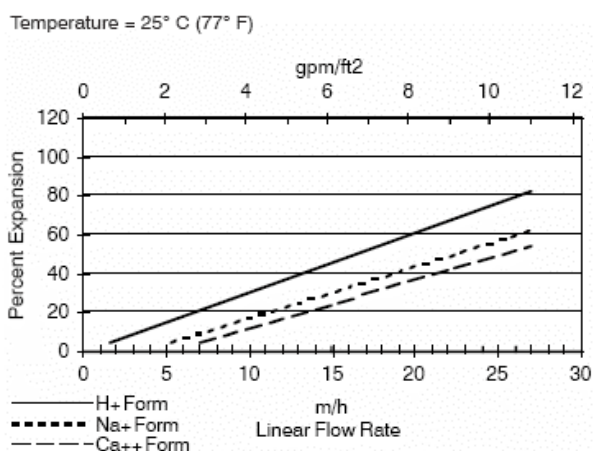
For other temperatures use:

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

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

Figure 2. Pressure Drop Data

Temperature = 20° C (68° F)
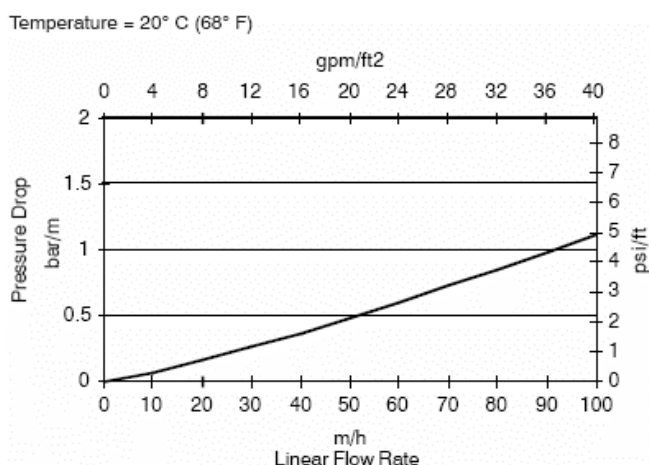
For other temperatures use:

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

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