DOWEX HCR-W2

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

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

Guaranteed Sales Specifications		H^+ form
Total exchange capacity, min.	eq/L	1.8
	kgr/ft³ as $CaCO_3$	39.3
Water content	%	48 - 54
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

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 ($Na^+ \rightarrow H^+$)	%	8
Particle density	g/mL	1.22
Shipping weight	g/L	785
	lbs/ft³	49

Recommended Operating Conditions

- Maximum operating temperature: 120°C (250°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
  - Co-current regeneration/displacement rinse 1-10 m/h (0.4 - 4 gpm /ft²)
- Total rinse requirement 3-6 Bed volumes
- Regenerant: 1-10% H_2SO_4 or 4-8% HCl

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

Typical properties and applications

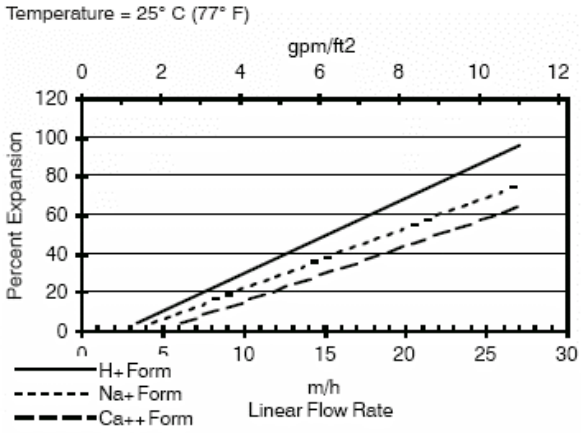
DOWEX HCR-W2 strong acid cation exchange resin is a premium grade resin with high exchange capacity, excellent resistance to attrition and good resistance to thermal and oxidative degradation.

The resin is specially sized for use in working or polishing mixed beds. DOWEX HCR-W resin is recommended for use alone as a single lead cation or with DOWEX SBR-C (OH) DOWEX SBR-P C (OH) anion exchange resins in mixed beds for deep-bed condensate polishing.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

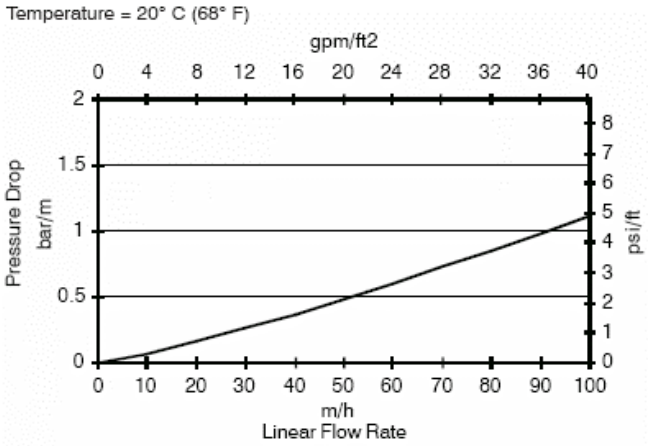


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

$P_T = P_{68°F}$ / (0.014 $T_{°F}$ + 0.05), where P ≡ 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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