



DOWEX HCR-S/S

A High Capacity Cation Exchange Resin for Domestic Applications

Product	Type	Matrix	Functional group
DOWEX* HCR-S/S	Strong acid cation	Styrene-DVB gel	Sulfonic acid

Guaranteed Sales Specifications		Na ⁺ form
Total exchange capacity, min.	eq/l	1.9
	kgr/ft ³ as CaCO ₃	41.5
Bead size distribution range [†]		
0.3 - 1.2 mm, min.	%	90
<0.3 mm, max.	%	1
Whole uncracked beads, min.	%	90
Color throw, as packaged, max.	APHA	20
Acidity range	pH	7.0 - 9.5

Typical Physical and Chemical Properties		Na ⁺ form
Water content	%	48 - 52
Total swelling (Ca ⁺ → Na ⁺)	%	5
Particle density	g/ml	1.30
Shipping weight	g/l	800
	lbs/ft ³	50

Recommended Operating Conditions	
Maximum operating temperature	120°C (250°F)
pH range	0-14
Bed depth, min.	800 mm (2.6 ft)
Flow rates:	
Service/fast rinse	5-50 m/h (2-20 gpm/ft ²)
Backwash	See Figure 1
Co-current regeneration/displacement rinse	1-10 m/h (0.4-4 gpm/ft ²)
Total rinse requirement	3-6 Bed volumes
Regenerant	8-12% NaCl

[†]For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775/CH 171-476-E).

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Typical properties and applications: Packaging

DOWEX HCR-S/S cation exchange resin is a high capacity resin with excellent kinetics and good physical, chemical, and thermal stability. DOWEX HCR-S/S is used for domestic applications in the co-current mode of regeneration. For counter-current regeneration, DOWEX HCR-S/S CR is available.

Figure 1. Backwash Expansion Data

Temperature = 25°C (77°F)

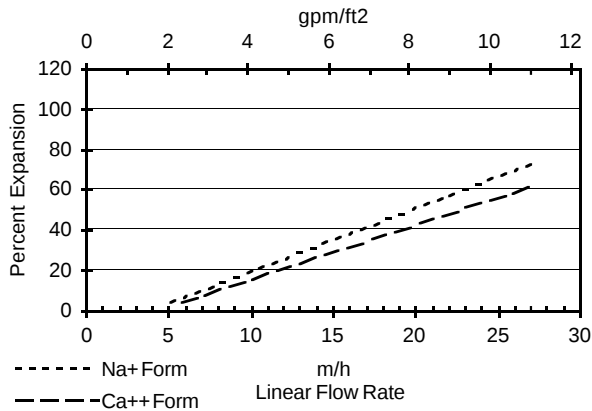
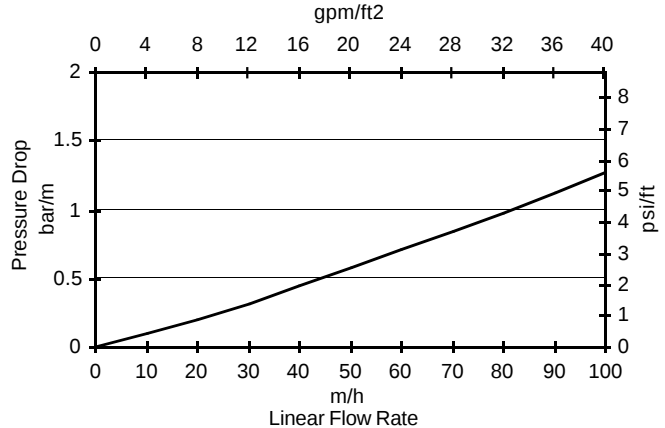


Figure 2. Pressure Drop Data

Temperature = 20°C (68°F)



For other temperatures use:

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

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

For other temperatures use:

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

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

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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