



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 kgr/ft ³ as CaCO ₃	1.9 41.5
Bead size distribution range†		
300 - 1,200 μm, min.	%	90
< 300 μm, 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 lbs/ft ³	800 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 Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

Typical Properties and Applications

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.

Packaging

25 liter bags or 1 cubic foot bags

Figure 1. Backwash Expansion Data

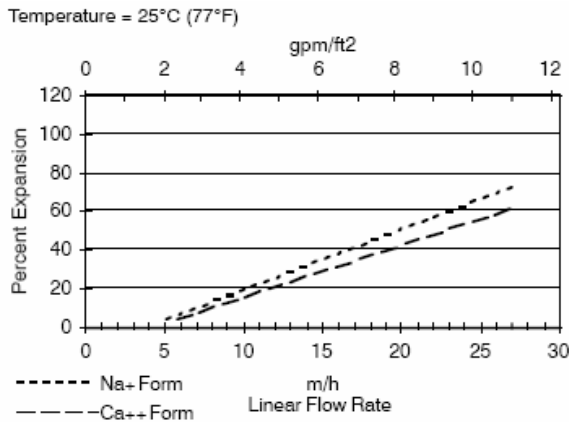
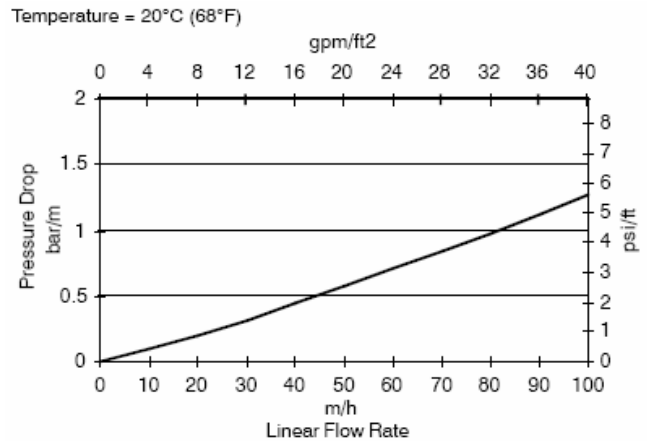


Figure 2. Pressure Drop Data



For other temperatures use:

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

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

For other temperatures use:

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

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

DOWEX Ion Exchange Resins

For more information about DOWEX resins, call the Dow Liquid Separations business:

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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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