



# 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 <sup>+</sup> form
Total exchange capacity, min.	eq/l	1.9
	kg/ft <sup>3</sup> as CaCO <sub>3</sub>	41.5
Bead size distribution range <sup>†</sup>		
	0.3 - 1.2 mm, min.	%
<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 <sup>+</sup> form
Water content	%	48 - 52
Total swelling (Ca <sup>+</sup> → Na <sup>+</sup> )	%	5
Particle density	g/ml	1.30
Shipping weight	g/l	800
	lbs/ft <sup>3</sup>	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 <sup>2</sup> )
Backwash	See Figure 1
Co-current regeneration/displacement rinse	1-10 m/h (0.4-4 gpm/ft <sup>2</sup> )
Total rinse requirement	3-6 Bed volumes
Regenerant	8-12% NaCl

<sup>†</sup>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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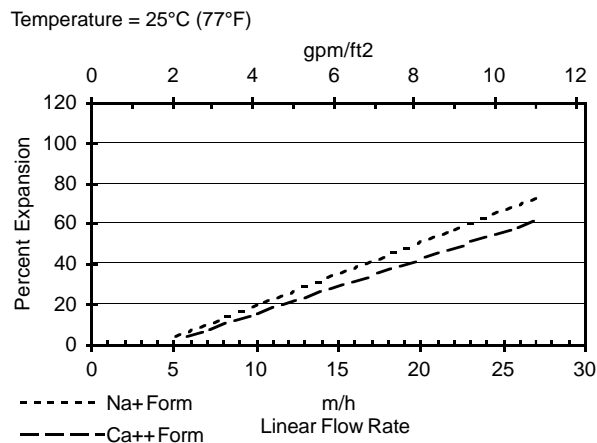
# DOWEX Ion Exchange Resins

## Typical properties and applications: Packaging

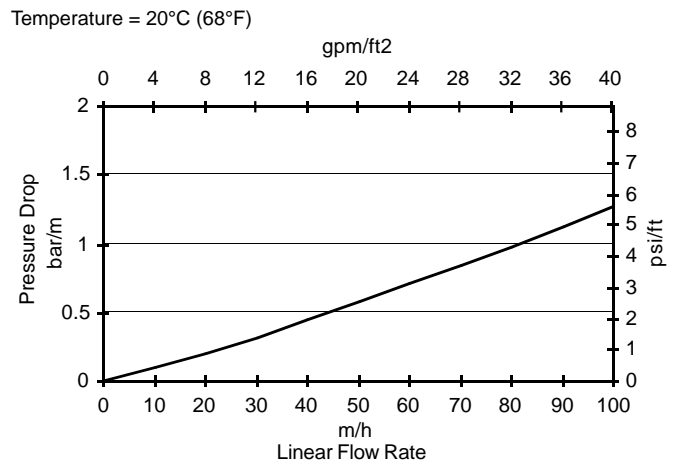
DOWEX HCR-S/S cation exchange resin is a high capacity resin with excellent kinetics and good physical, chemical, and thermal stability. DOWEX HCR-S/S is used for domestic applications in the co-current mode of regeneration. For counter-current regeneration, DOWEX HCR-S/S CR is available.

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:

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

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

**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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