

**DOWEX™ HCR-S/S FF**
High Capacity Cation Exchange Resin

For Domestic Applications

Description

DOWEX™ HCR-S/S FF Cation Exchange Resin is a high capacity resin with excellent kinetics and good physical, chemical and thermal stability. DOWEX HCR-S/S FF Resin is recommended for use in domestic applications.

**Typical Physical
and Chemical
Properties**

Physical Form		Amber translucent spherical beads
Matrix		Styrene-DVB, gel
Functional group		Sulfonic acid
Ionic form as shipped		Na⁺ form
Total exchange capacity, min	eq/L kgr/ft ³ as CaCO ₃	1.9 41.5
Moisture retention capacity	%	47–51
Particle size†		
< 300 µm, max.	%	1
Whole uncracked beads, min.	%	90
Color throw, as packaged, max.	APHA	20
Acidity range	pH	7.0–10.5
Total swelling (Ca ⁺⁺ → Na ⁺)	%	5
Particle density	g/mL	1.30
Shipping density **	g/L	800
	lbs/ft ³	50

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

** As per the backwashed and settled density of the resin, determined by ASTM D-2187

**Suggested
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 Backwash Co-current regeneration/displacement rinse	5–50 m/h (2–20 gpm/ft ²) See Figure 1 1–10 m/h (0.4–4 gpm/ft ²)
Total rinse requirement	3–6 BV*
Regenerant	8–12% NaCl

*1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gals per ft³ resin

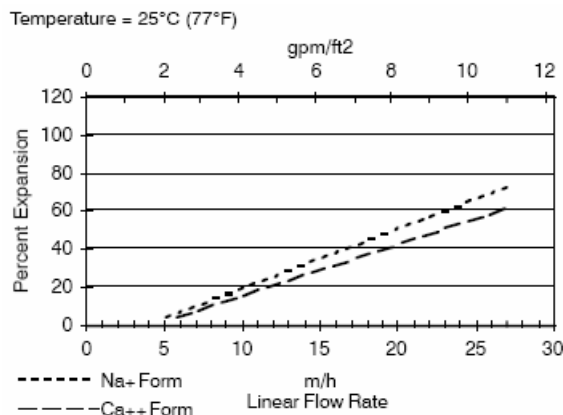
Packaging

25 liter bags or 5 cubic foot drum

Hydraulic Characteristics

Figure 1 shows the bed expansion of DOWEX™ HCR-S/S FF Resin as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for DOWEX™ HCR-S/S FF Resin, as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with clear water and correctly classified bed.

Figure 1. Backwash Expansion Data

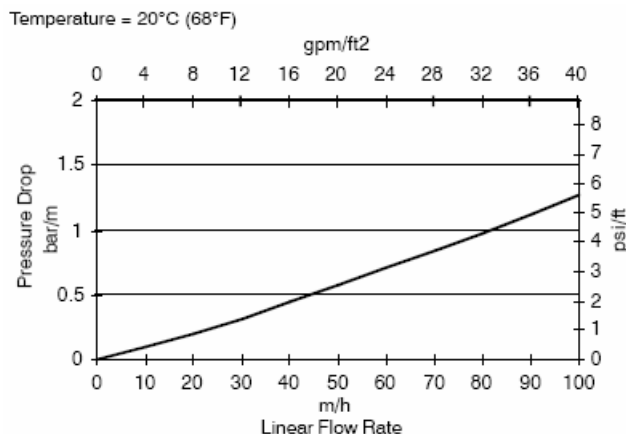


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

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

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

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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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