



## Product Data Sheet

### TapTec™ HCRSS Na Ion Exchange Resin

Drinking Water-grade, Gel, Strong Acid Cation Exchange Resin for Domestic Softening

#### Description

TapTec™ HCRSS Na Ion Exchange Resin is a high-capacity, gel, strong acid cation exchange resin with excellent kinetics and good physical, chemical, and thermal stability. TapTec™ HCRSS Na can be used for domestic softening applications.

#### Applications

- Domestic softening

#### Typical Properties

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##### Physical Properties

Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	White to amber, translucent, spherical beads

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##### Chemical Properties

Ionic Form as Shipped	Na <sup>+</sup>
Total Exchange Capacity	≥ 1.9 eq/L
Water Retention Capacity	48 – 52%
Acidity Range	7.0 – 10.5

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##### Particle Size §

300 – 1200 µm	≥ 90%
< 300 µm	≤ 1%

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##### Purity

Color Throw, as packaged	≤ 20 APHA units
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##### Stability

Whole Uncracked Beads	≥ 90%
Swelling	Ca <sup>2+</sup> → Na <sup>+</sup> : 5%

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##### Density

Particle Density	1.3 g/mL
Shipping Weight	800 g/L

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§ For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 45-D00954-en).

## Suggested Operating Conditions

Maximum Operating Temperature	40°C (104°F)
pH Range	0 – 14
Bed Depth, min.	800 mm (2.6 ft)
Flowrates	
Service	5 – 50 BV*/h (0.63 – 6.3 gpm/ft <sup>3</sup> )
Backwash	See Figure 1
Regeneration	1 – 10 m/h (0.4 – 4 gpm/ft <sup>2</sup> )
Displacement Rinse	1 – 10 m/h (0.4 – 4 gpm/ft <sup>2</sup> )
Fast Rinse	5 – 50 BV/h (0.63 – 6.3 gpm/ft <sup>3</sup> )
Total Rinse Requirement	3 – 6 BV
Regenerant	NaCl
Concentration	8 – 12%

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin or 7.5 gal per ft<sup>3</sup> resin

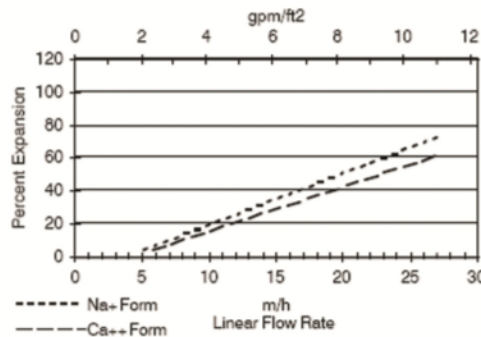
## Hydraulic Characteristics

Estimated bed expansion of TapTec™ HCRSS Na Ion Exchange Resin as a function of backwash flowrate and ionic form at 25°C (77°F) is shown in Figure 1. The flowrate necessary to achieve a desired bed expansion for other water temperatures can be calculated with the provided equations.

Estimated pressure drop for TapTec™ HCRSS Na as a function of service flowrate at 20°C (68°F) is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean water and a well-classified bed. Estimated pressure drop at other water temperatures can be calculated with the provided equations.

**Figure 1: Backwash Expansion**

Temperature = 25°C (77°F)



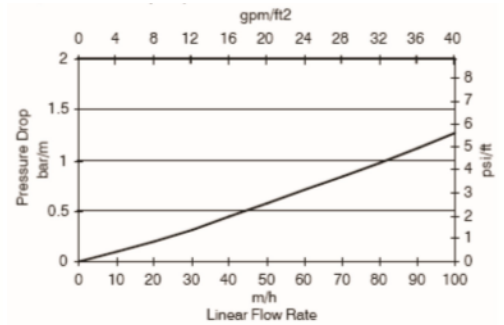
**For other temperatures use:**

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

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

**Figure 2: Pressure Drop**

Temperature = 20°C (68°F)



**For other temperatures use:**

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

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

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Please be aware of the following:

- **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.

## Regulatory Note

This product may be subject to drinking water application restrictions in some countries; please check the application status before use and sale.

Have a question? Contact us at:

[www.dupont.com/water/contact-us](http://www.dupont.com/water/contact-us)

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