Product Data Sheet

TapTec™ HCRSSN Na Ion Exchange Resin

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

Description

TapTec™ HCRSSN 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™ HCRSSN Na can be used for domestic softening applications.

Applications

- Domestic softening

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Amber, translucent, spherical beads
Chemical Properties	
Ionic Form as Shipped	Na^+
Total Exchange Capacity	≥ 1.90 eq/L
Water Retention Capacity	41 – 49%
Particle Size [§]	
Particle Diameter	580 – 700 µm
< 300 µm	≤ 2.0%
< 425 µm	≤ 10.0%
> 1180 µm	≤ 2.0%
Density	
Shipping Weight	820 g/L
Chemical Resistance	Insoluble in dilute solutions of acids or bases and common solvents

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

Form No. 45-D02495-en, Rev. 1
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Suggested Operating Conditions

Maximum Operating Temperature	120°C (248°F)		
Flowrates			
Service	5 – 50 BV*/h (0.63 – 6.3 gpm/ft^3)		
Backwash	See Figure 1		
Regeneration			
NaCl	2 – 8 BV/h (0.25 – 1.0 gpm/ft^3)		
HCl	2 – 5 BV/h (0.25 – 0.63 gpm/ft^3)		
H_2SO_4	2 – 20 BV/h (0.25 – 2.5 gpm/ft^3)		
Slow Rinse	Regeneration flowrate for 2 BV		
Fast Rinse	Service flowrate for 2 – 4 BV		
Contact Time			
Regeneration	≥ 30 minutes		
Regenerant	NaCl	HCl	H_2SO_4
Concentration	10%	5 – 8%	0.7 – 6%
Level	60 – 250 kg/m^3	50 – 150 kg/m^3	50 – 240 kg/m^3
	(3.8 – 15.6 lb/ft^3)	(3.1 – 9.4 lb/ft^3)	(3.1 – 15 lb/ft^3)

* 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin or 7.5 gal per ft^3 resin

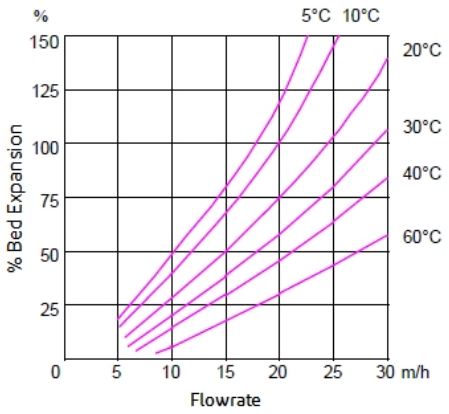
Hydraulic Characteristics

Estimated bed expansion of TapTec™ HCRSSN 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™ HCRSSN 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

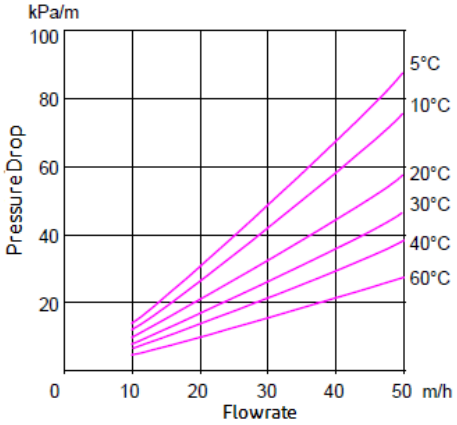
Temperature = 25°C (77°F)



For other temperatures use:
FT = F25°C [1 + 0.008 (1.8T°C – 45)], where F ≡ m/h
FT = F77°F [1 + 0.008 (T°F – 77)], where F ≡ gpm/ft^2

Figure 2: Pressure Drop

Temperature = 20°C (68°F)



For other temperatures use:
PT = P20°C / (0.026T°C + 0.48)], where P ≡ bar/m
PT = P68°F / (0.014T°F + 0.05)], where P ≡ psi/ft

Form No. 45-D02495-en, Rev. 1
April 2021

Product Stewardship

DuPont 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 DuPont products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

DuPont strongly encourages its customers to review both their manufacturing processes and their applications of DuPont products from the standpoint of human health and environmental quality to ensure that DuPont products are not used in ways for which they are not intended or tested. DuPont personnel are available to answer your questions and to provide reasonable technical support. DuPont product literature, including safety data sheets, should be consulted prior to use of DuPont products. Current safety data sheets are available from DuPont.

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

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