

**DOWEX™ FPC16UPS H Ion Exchange Resin**

Uniform Particle Size, High Capacity Strong Acid Cation Exchange Resin

Description

DOWEX™ FPC16UPS H Strong Acid Cation Exchange Resin is a uniform particle size resin that offers outstanding performance in specialty food applications, such as the production of amino acids or demineralization in dairy processing. The small uniform beads exhibit faster kinetics than conventionally sized resins. The improved kinetics can result in improved regeneration efficiency, higher operating capacity, reduced regenerant usage and less wastewater.

Applications

- Amino acid production
- Dairy demineralization

Typical Physical and Chemical Properties

Matrix	Styrene-divinylbenzene, gel
Type	Strong acid cation
Functional Groups	Sulfonic acid
Physical Form	Amber, translucent, spherical beads
Ionic Form as Shipped	H ⁺
Total Exchange Capacity ^a	≥ 1.8 eq/L
Water Retention Capacity ^a	50 – 56%
Particle Size	
Particle Diameter ^b	600 ± 50 µm
Uniformity Coefficient ^a	≤ 1.1
Whole Uncracked Beads	≥ 95%
Swelling	Na ⁺ → H ⁺ : 8%
Particle Density	1.20 g/mL
Bulk Density, as Shipped ^c	800 g/L (50 lb/ft ³)

^a Contractual value.^b For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 177-01775).^c As per the backwashed and settled density of the resin, determined by ASTM D-2187.

Suggested Operating Conditions

Maximum Operating Temperature	93°C (200°F)
pH Range	0 – 14
Bed Depth, min.	1000 mm (3.3 ft)
Flowrates	
Service	2 – 8 BV*/h
Backwash	See Figure 1
Fast Rinse	2 – 8 BV/h
Contact Time	
Regeneration	30 – 45 minutes
Displacement Rinse	30 – 45 minutes
Total Rinse Requirement	2 – 5 BV
Regenerant	
Concentration	7%
Level	80 – 96 kg/m ³ (5 – 6 lb/ft ³)
Temperature, max.	93°C (200°F)

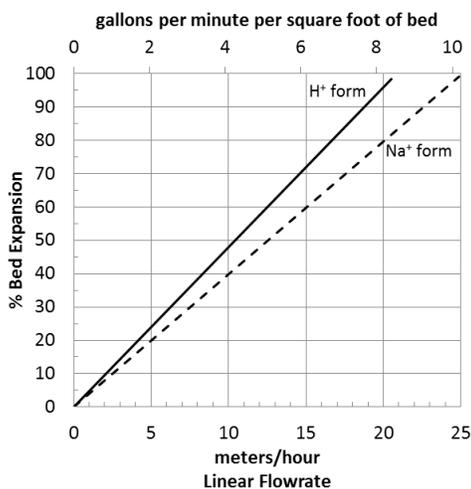
* 1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gal solution per ft³ resin

Hydraulic Characteristics

Bed expansion of DOWEX™ FPC16UPS H Ion Exchange Resin as a function of backwash flowrate 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.

Figure 1: Backwash Expansion

Temperature = 25°C (77°F)



For other temperatures use:

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

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

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.

Customer Notice

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

For more information, contact our Customer Information Group:

Asia Pacific	+86 21 3851 4988
Europe, Middle East, Africa	+31 115 672626
Latin America	+55 11 5184 8722
North America	1-800-447-4369

www.dowwaterandprocess.com

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.

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

All information set forth herein is for informational purposes only. This information is general information and may differ from that based on actual conditions. Please note that physical properties may vary depending on certain conditions and while operating conditions stated in this document are intended to lengthen product lifespan and/or improve product performance, it will ultimately depend on actual circumstances and is in no event a guarantee of achieving any specific results. Nothing in this document should be treated as a warranty by Dow.

