



DOWEX MONOSPHERE 575C (H)

A Uniform Particle Size Strong Acid Cation Exchange Resin for Mixed Bed Demineralization and Condensate Polishing Applications

Product	Type	Matrix	Functional group
DOWEX* MONOSPHERE* 575C (H)	Strong acid cation	Styrene-DVB gel	Sulfonic acid

Guaranteed Sales Specifications			H ⁺ form			
Total exchange capacity, min.		eq/l kgr/ft ³ as CaCO ₃	2.3 50.3			
Water content		%	41 – 46			
Bead size distribution [†]						
Mean particle size		μm	550 ± 50			
Uniformity coefficient, max.			1.1			
>850μ, max.		%	5			
<300μ, max.		%	0.5			
Whole uncracked beads, min.		%	95			
Crush strength						
Average, min.		g/bead	500			
> 200 g/bead, min.		%	95			
Ionic conversion, min.		%	99.7			
Trace metals, ppm dry resin, max.						
Na	Fe	Cu	Al	Co	Pb	Heavy metals (as Pb)
100	50	50	50	30	10	10

Typical Physical and Chemical Properties

Total swelling (Na ⁺ → H ⁺)	%	7
Particle density	g/ml	1.25
Shipping weight	g/l lbs/ft ³	800 50

Recommended Operating Conditions	• Maximum operating temperature	130°C (265°F)
	• pH range	0-14
	• Bed depth, min.	450 mm (1.5 ft)
	• Flow rates:	
	Service/fast rinse	5-60 m/h (2-24 gpm/ft ²)
	Service/condensate polishing	40-150 m/h (16-60 gpm/ft ²)
	Backwash	See figure 1
Co-current regeneration/displacement rinse	1-10 m/h (0.4-4 gpm /ft ²)	
• Total rinse requirement		3 – 6 Bed volumes
• Regenerant		1-10% H ₂ SO ₄ or 4-8% HCl

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

Typical properties and applications

DOWEX MONOSPHERE 575C (H) cation exchange resin is a condensate polishing grade high-capacity gel resin with uniform particle size designed specifically for use in mixed beds. It is ideally suited to the high flow rate demands of condensate polishing applications. The increase in total exchange capacity enables a greater volume of anion resin in mixed beds that are designed with a 1:1 equivalent ratio. This is especially important for reducing reactor water sulfate in BWR (Boiling Water Reactor) power stations.

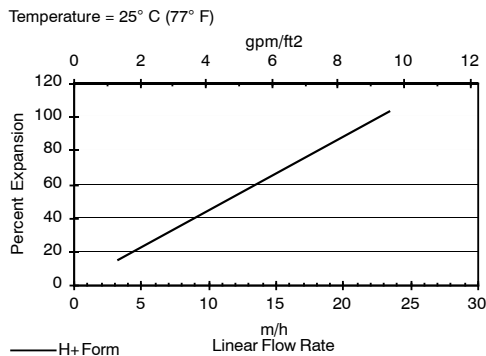
The smaller bead size of the DOWEX MONOSPHERE 575C (H) resin is intended to improve the mass transfer surface kinetics and increase the capability for particulate iron (crud) removal compared to larger uniform size cation resins. This can bring a performance advantage to condensate polishing systems in either BWR or PWR (Pressurized Water Reactor) power stations.

Although DOWEX MONOSPHERE 575C (H) resin is designed with a 550 micron bead size, separation from the less dense anions such as DOWEX MONOSPHERE 550A (OH) resin is easily accomplished. DOWEX MONOSPHERE 575C (H) resin has outstanding mechanical strength and very good stability to oxidation.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

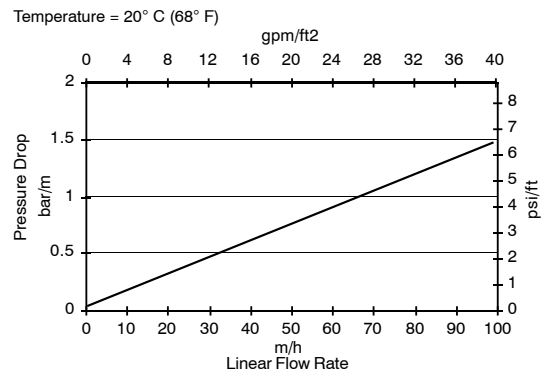


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

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

DOWEX Ion Exchange Resins
For more information about DOWEX resins, call the Dow Liquid Separations business:

North America: 1-800-447-4369
Latin America: (+55) 11-5188-9222
Europe: (+32) 3-450-2240
Pacific (ex. China): +800-7776-7776
China: +10-800-600-0015
<http://www.dowex.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.

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