



DOWEX MONOSPHERE 650C (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* 650C (H)	Strong acid cation	Styrene-DVB, gel	Sulfonic acid

Guaranteed Sales Specifications				H ⁺ form
Total exchange capacity, min.		eq/l		2.0
		kgr/ft ³ as CaCO ₃		43.7
Water content		%		46 - 51
Bead size distribution [†]				
Mean particle size		μm		650 ± 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	Heavy Metals (as Pb)
100	50	50	50	20

Typical Physical and Chemical Properties			
Total swelling (Na ⁺ → H ⁺)		%	7
Particle density		g/ml	1.22
Shipping weight		g/l lbs/ft ³	785 49

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
Regeneration/displacement rinse	1-10 m/h (0.4-4gpm/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 the Particle Size Distribution Cross Reference Chart (Form No. 177-01775/CH 171-476-E).

*Trademark of The Dow Chemical Company

DOWEX Ion Exchange Resins

For more information about DOWEX resins, call Dow Liquid Separations business:

North America 1-800-447-4369
 Latin America (+55) 11-5188-9277
 Europe (+32) 3-450-2240
 Japan (+81) 3-5460-2100
 Australia (+61) 2-9776-3226
<http://www.dowex.com>

Typical properties and applications:

DOWEX* MONOSPHERE* 650C (H) cation exchange resin is a premium quality 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 bead size uniformity is tailored to complement

the smaller, less dense DOWEX MONOSPHERE 550A (OH) anion resin. Together, these resins offer near perfect separation in mixed beds.

The color distinction between the two resins allows easy visual confirmation

of separation following backwash. DOWEX MONOSPHERE 650C 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

Temperature = 25° C (77° F)

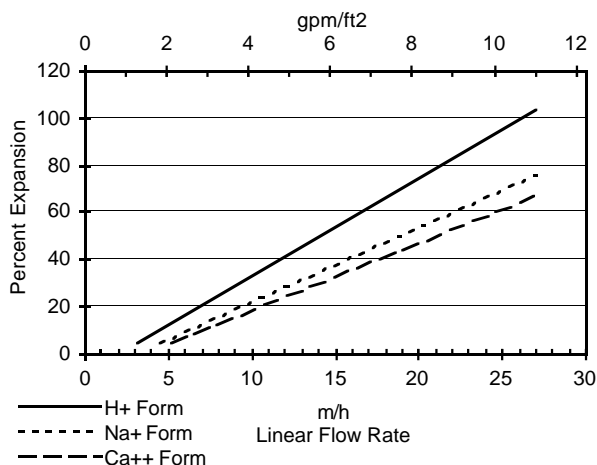
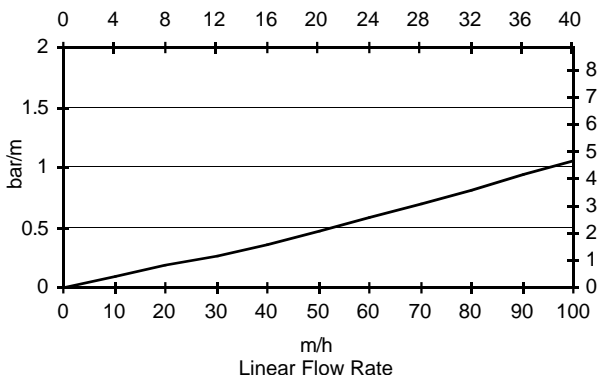


Figure 2. Pressure Drop Data

Temperature = 20° C (68° F)



For other temperatures use:

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

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

For other temperatures use:

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

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

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 any patent owned by Seller 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 governmental enactments. Seller assumes no obligation or liability for the information in this document. **NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**

Published October 2001.

