



DOWEX MONOSPHERE 700A (OH)

A Uniform Particle Size Strong Base Anion Exchange Resin for Mixed Bed Demineralization and Condensate Polishing Applications

Product	Type	Matrix	Functional group	
DOWEX* MONOSPHERE* 700A (OH)	Type 1 strong base anion	Styrene-DVB gel	Quaternary amine	
Guaranteed Sales Specifications			OH⁻ form	
Total exchange capacity, min.		eq/l kgr/ft ³ as CaCO ₃	1.1 24.0	
Water content		%	55 – 65	
Bead size distribution†				
Mean particle size		μm	700 ± 50	
Uniformity coefficient, max.			1.1	
>850μ, max.		%	5	
<300μ, max.		%	0.5	
Whole uncracked beads, min.		%	95	
Crush strength				
Average, min.		g/bead	350	
> 200 g/bead, min.		%	95	
Ionic conversion	OH ⁻ 93% min.	Cl ⁻ 0.5% max.	CO ₃ ⁻ 7% max.	
Trace metals, ppm dry resin, max.				
Na	Fe	Cu	Al	Heavy metals (as Pb)
50	80	40	40	20

Typical Physical and Chemical Properties

Total swelling (Cl ⁻ → OH ⁻)	%	25
Particle density	g/ml	1.08
Shipping weight	g/l lbs/ft ³	640 40

Recommended Operating Conditions

- Maximum operating temperature:
 - OH⁻ form 60°C (140°F)
 - Cl⁻ form 100°C (212°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/ft²)
 - Service/condensate polishing 40-190 m/h (16-80 gpm/ft²)
 - Backwash See figure 1
 - Co-current regeneration/displacement rinse 1-10 m/h (0.4-4 gpm /ft²)
- Total rinse requirement 2-5 Bed volumes
- Regenerant:
 - Type 4-8% NaOH
 - Temperature Ambient or up to 60°C (140°F) for silica removal

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

Typical properties and applications

DOWEX MONOSPHERE 700A (OH) anion exchange resin is a condensate polishing grade resin with high total exchange capacity, uniform particle size, exceptional bead integrity and a distinguishable light color. It is ideally suited to the high flow rate demands of condensate polishing applications.

The combination of uniform particle size and a 700-micron average bead diameter makes this resin an excellent choice for use with the DOWEX MONOSPHERE 750C (H) cation resin. The uniform particle size will enable excellent separation to reduce contaminant ion leakage, while the larger bead diameters will minimize pressure drop across the mixed resin bed. This is especially important in high velocity condensate polishing conditions or Tripol-designed systems.

The DOWEX MONOSPHERE 700A (OH) anion resin can also be used in combination with the DOWEX MONOSPHERE 575C cation resin as a less-separable mixed resin. A mixed resin with reduced separability is a desired characteristic by some BWR (Boiling Water Reactor) nuclear power stations since their condensate polishing resin does not require separation and regeneration, and less-separable resin mixtures can help reduce the contaminant sulfate level in the BWR system.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

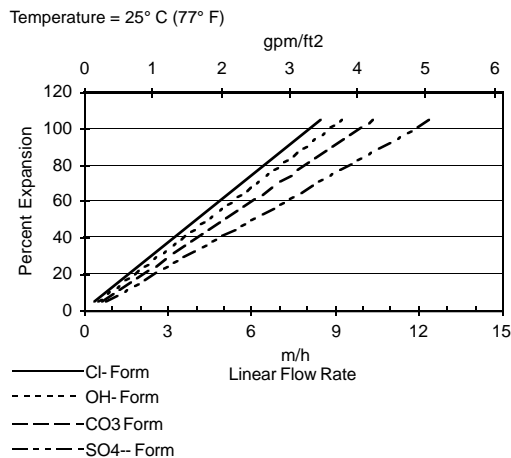
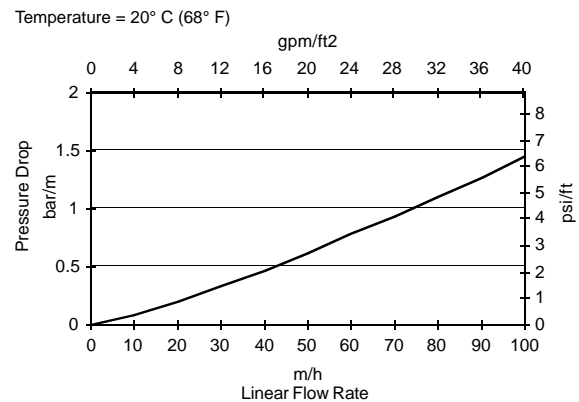


Figure 2. Pressure Drop Data



For other temperatures use:

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

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

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:

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 Europe: (+32) 3-450-2240
 Japan: (+81) 3-5460-2100
 Australia: (+61) 3-9226-3545
<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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