



## DOWEX™ MARATHON™ 550A (OH)

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

Product	Type	Matrix	Functional group
DOWEX™ MARATHON™ 550A (OH)	Type I strong base anion	Styrene-DVB, gel	Quaternary amine

### Guaranteed Sales Specifications

	OH form
Total exchange capacity, min.	1.1 eq/L 24.0 kg/ft <sup>3</sup> as CaCO <sub>3</sub>
Water content	55 - 65 %
Bead size distribution†	
Mean particle size	590 ± 50 µm
Uniformity coefficient, max.	1.1
Ion conversion, minimum OH form	93 %

### Typical Physical and Chemical Properties

Total swelling (Cl <sup>-</sup> → OH <sup>-</sup> )	25 %
Particle density	1.08 g/mL
Whole uncracked beads, min.	95 %
Shipping weight	640 g/L 41 lbs/ft <sup>3</sup>
Crush strength	350 g/beat
Average, min.	95 %
> 200 g/beat, min.	

### Recommended Operating Conditions

- Maximum operating temperature:
  - OH<sup>-</sup> form 60°C (140°F)
  - Cl<sup>-</sup> 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/ft<sup>2</sup>)
  - Service/condensate polishing 40 - 150 m/h (16 - 60 gpm/ft<sup>2</sup>)
  - Backwash See Figure 1
  - Co-current regeneration/displacement rinse 1 - 10 m/h (0.4 - 4 gpm /ft<sup>2</sup>)
- 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™ MARATHON™ 550A (OH) anion resin is a premium quality resin with high total exchange capacity, exceptional bead integrity and a distinguishable light color. It is ideally suited to the high flow rate demands commonly encountered in power plant condensate polishing systems. The bead size uniformity of this anion resin and its smaller average particle size results in rapid exchange kinetics and helps provide excellent separability when used with DOWEX MARATHON 650C (H) cation resin.

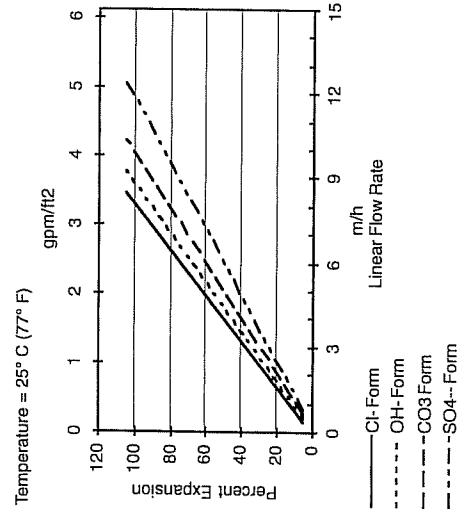
The color distinction between the two resins allows easy visual confirmation of separation following backwash. DOWEX MARATHON 550A resin has outstanding mechanical strength.

For mixed bed applications with internal regeneration distributors, DOWEX MONOSPHERE™ 600BB inert resin is recommended to maintain a wider separation zone, allowing the regenerant off-take distributor to maintain its location between the cation and anion resin, even with the swelling that occurs during regeneration.

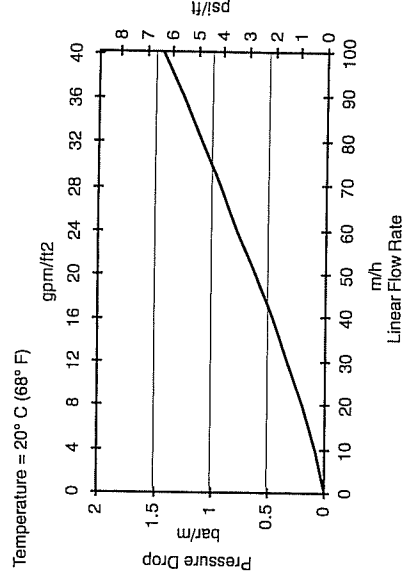
## Packaging

25 liter bags or 5 cubic feet fiber drums

**Figure 1. Backwash Expansion Data**



**Figure 2. Pressure Drop Data**



### For other temperatures use:

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

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

### For other temperatures use:

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

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

### DOWEX Ion Exchange Resins

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

North America: 1-800-447-4369  
 (+55) 11-5188-9222  
 Latin America: (+32) 3-450-2240  
 Europe: +60 3 7958 3392  
 Pacific: +813 5460 2100  
 Japan: +86 21 2301 9000  
 China: <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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