



## DOWEX™ MONOSPHERE™ 550A Resin Strong Base Anion Exchange Resin

For the Power Industry

### Description

DOWEX™ MONOSPHERE™ 550A Resin is an advanced uniform particle size gel, strong base anion exchange resin recommended for use in industrial applications. It has high total exchange capacity, exceptional bead integrity and a distinguishable light color and 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 MONOSPHERE 650C (H) cation resin.

### Typical Physical and Chemical Properties

Physical Form		White to amber translucent spherical beads
Matrix		Styrene-DVB, gel
Functional group		Quaternary amine
Ionic form as shipped		<b>Cl<sup>-</sup> form</b>
Total volume capacity, min	eq/L kgr/ft <sup>3</sup> as CaCO <sub>3</sub>	1.25 27.3
Moisture retention capacity	%	42–48
Particle size†		
Uniformity coefficient, max.		1.1
Harmonic mean diameter	µm	550 ± 50
Whole uncracked beads, min.	%	95
Friability		
Average, min.	g/bead	350
> 200 g/bead, min.	%	95
Total swelling (Cl <sup>-</sup> → OH <sup>-</sup> )	%	15
Particle density	g/mL	1.10
Shipping density **	g/L lbs/ft <sup>3</sup>	680 43

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

\*\*As per the backwashed and settled density of the resin, determined by ASTM D-2187

## Suggested 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 BV*
Regenerant:	
Type	4–8% NaOH
Temperature	Ambient or up to 60°C (140°F) for silica removal

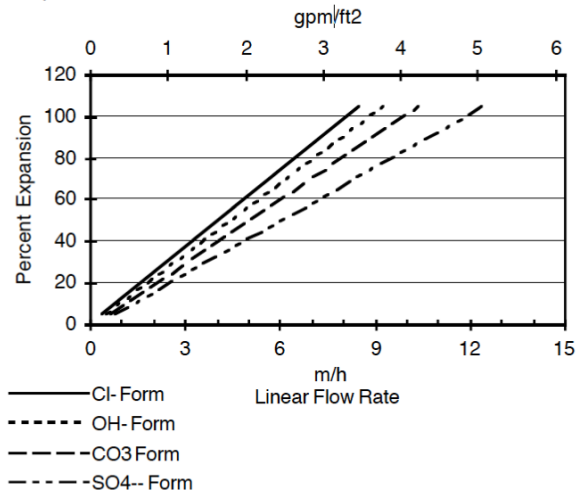
\*1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin or 7.5 gals per ft<sup>3</sup> resin

## Hydraulic Characteristics

Figure 1 shows the bed expansion of DOWEX MONOSPHERE 550A resin as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for DOWEX MONOSPHERE 550A as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with clear water and a correctly classified bed.

**Figure 1. Backwash Expansion Data**

Temperature = 25° C (77° F)



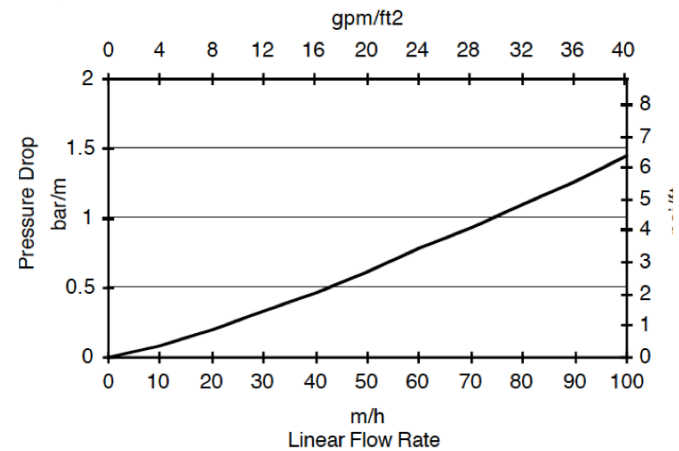
**For other temperatures use:**

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

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

**Figure 2. Pressure Drop Data**

Temperature = 20° C (68° F)



**For other temperatures use:**

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

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

## Packaging

25 liter bags or 1 cubic foot bags

## **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.

### **DOW™ Ion Exchange Resins** For more information about DOW™ resins, call the Dow Water & Process Solutions business:

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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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