DOWEX™ MONOSPHERE™ 550A (OH)

Uniform Particle Size Strong Base Anion Exchange Resin
for Mixed Bed Demineralization and Condensate Polishing Applications
For the Power Industry

Description

DOWEX™ MONOSPHERE™ 550A (OH) is a premium quality gel anion 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 MONOSPHERE 650C (H) Cation Resin.

Typical Physical and Chemical Properties

Physical form		White to cream translucent spherical beads
Matrix		Styrene-DVB gel
Functional group		Quaternary amine
Total volume capacity, min. [2]	eq/L kgr/ft^3 as $CaCO_3$	1.1 24.0
Moisture Retention Capacity	%	55–65
Particle size		
Harmonic mean diameter	μm	590 ± 50
Uniformity coefficient, max.		1.1
> 850 μm, max.	%	5
< 300 μm, max.	%	0.5
Whole uncracked beads, min.	%	95
Friability Average, min. > 200 g/bead, min.	 g/bead %	 350 95
Ionic conversion OH^- Cl^- CO_3^-	 % % %	 94 min. 0.5 max 6 max
Trace metals, dry resin, max.	ppm	Na (50); Fe (80); Cu (40); Al (40); Heavy metals [as Pb] (20)
Total swelling ($Cl^- \rightarrow OH^-$)	%	25
Particle density	g/mL	1.08
Shipping density**	g/L lbs/ft^3	657 41

† 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^- 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/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	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^3 solution per m^3 resin or 7.5 gals per ft^3 resin

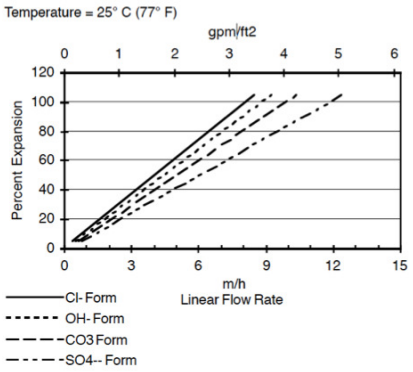
Packaging

25 liter bags or 5 cubic feet fiber drums

Hydraulic Characteristics

Figure 1 shows the bed expansion of DOWEX™ MONOSPHERE 550A (OH) as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for DOWEX MONOSPHERE 550A (OH) 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.

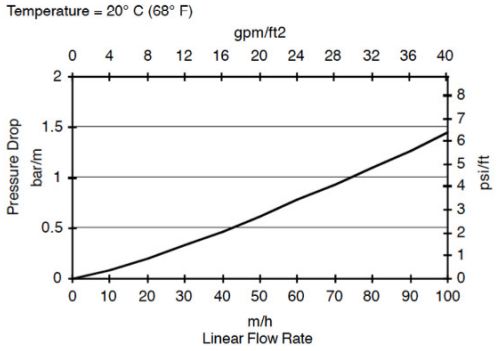
Figure 1. Backwash Expansion Data



For other temperatures use:

$F_T = F_{77°F}$ [1+ 0.008 ($T_{°F}$ -77)], where F = gpm/ft^2
$F_T = F_{25°C}$ [1+ 0.008 (1.8$T_{°C}$ - 45)], where F = m/h

Figure 2. Pressure Drop Data



For other temperatures use:

$P_T = P_{20°C} / (0.026\ T_{°C} + 0.48)$, where P = bar/m
$P_T = P_{68°F} / (0.014\ T_{°F} + 0.05)$, where P = psi/ft

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.

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.