

**DOWEX™ MONOSPHERE™ MP-525C (H)**

A Uniform Particle Size Macroporous Strong Acid Cation Exchange Resin for Mixed Bed
Demineralization and Condensate Polishing Applications

Product	Type	Matrix	Functional group
DOWEX™ MONOSPHERE™ MP-525C (H)	Strong acid cation	Styrene-DVB macroporous	Sulfonic acid

Guaranteed Sales Specifications		H ⁺ form		
Total exchange capacity, min.	eq/L	1.6		
	kgr/ft ³ as CaCO ₃	35.0		
Water content	%	50 – 54		
Bead size distribution†				
Mean particle size	µm	500 ± 50		
Uniformity coefficient, max.		1.1		
< 300 µm, max.	%	1		
Whole beads, min.	%	95		
Crush strength				
Average, min.	g/bead	350		
> 200 g/bead, min.	%	95		
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 ⁺)		%	4
Particle density		g/mL	1.18
Shipping weight**		g/L	760
		lbs/ft ³	47

Recommended Operating Conditions	• Maximum operating temperature	150°C (300°F)
	• pH range	0 - 14
	• Bed depth, min.	450 mm (1.5 ft)
	• Flow rates:	
	Service/fast rinse	5 - 50 m/h (2 - 20 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	3 - 6 Bed volumes
	• Regenerant	1 - 10% H ₂ SO ₄ , 4 - 8% HCl

† 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.

Typical properties and applications

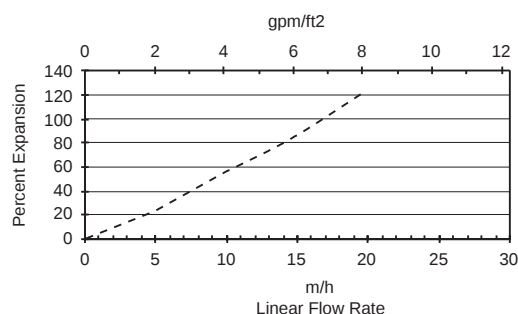
DOWEX™ MONOSPHERE™ MP-525C (H) strong acid cation exchange resin is a condensate grade macroporous resin with uniform particle size, exceptional physical stability and resistance to osmotic shock. This resin is specially sized to give excellent separation after backwash when used in conjunction with DOWEX MONOSPHERE MP-725A (OH) anion exchange resin in mixed beds. In addition, the smaller bead size of DOWEX MONOSPHERE MP-525C (H) is intended to improve insoluble iron removal and reduce the regeneration and rinse water requirements compared to larger conventional type macroporous resins.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

Temperature = 25° C (77° F)



--- 2:1 volume ratio of
DOWEX MONOSPHERE MP-525C
and DOWEX MONOSPHERE MP-725A (OH)

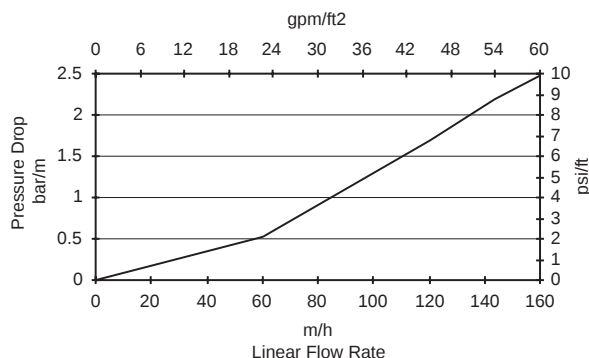
For other temperatures use:

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

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

Figure 2. Pressure Drop Data

Temperature = 100° F (37.8° C)



— 2:1 volume ratio of
DOWEX MONOSPHERE MP-525C
and DOWEX MONOSPHERE MP-725A (OH)

For other temperatures use:

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

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

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.

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