



## 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 <sup>+</sup> form	
Total exchange capacity, min.		eq/l kgr/ft <sup>3</sup> as CaCO <sub>3</sub>	1.6 35.0	
Water content		%	50 – 54	
Bead size distribution†				
Mean particle size		μm	500 ± 50	
Uniformity coefficient, max.			1.1	
<300μ, 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 <sup>+</sup> → H <sup>+</sup> )		%	4
Particle density		g/ml	1.18
Shipping weight		g/l lbs/ft <sup>3</sup>	760 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<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 3 – 6 Bed volumes
- Regenerant 1-10% H<sub>2</sub>SO<sub>4</sub>, 4-8% HCl

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

## Typical properties and applications

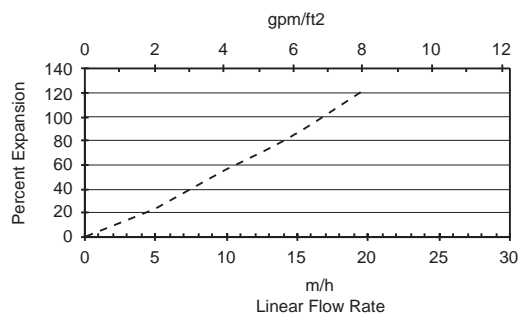
DOWEX MONOSPHERE MP-525C (H) strong acid cation exchange resin is a condensate grade macroporous resin with uniform particle size, exceptional physical stability and resistance to osmotic shock. This resin is specially sized to give excellent separation after backwash when used in conjunction with DOWEX 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)

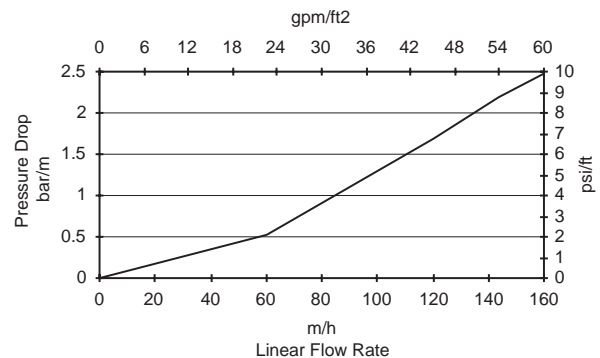
#### For other temperatures use:

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

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

### 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:

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

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

## DOWEX Ion Exchange Resins

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

North America: 1-800-447-4369  
 Latin America: (+55) 11-5188-9277  
 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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