



## DOWEX MSA-1 C

A Macroporous Strong Base Anion Exchange Resin for Mixed Bed Demineralization Applications

| Product        | Type                     | Matrix                   | Functional group |
|----------------|--------------------------|--------------------------|------------------|
| DOWEX* MSA-1 C | Type 1 strong base anion | Styrene-DVB, macroporous | Quaternary amine |

| Guaranteed Sales Specifications |                                          | Cl <sup>-</sup> form |
|---------------------------------|------------------------------------------|----------------------|
| Total exchange capacity, min.   | eq/l                                     | 1.0                  |
|                                 | kgr/ft <sup>3</sup> as CaCO <sub>3</sub> | 21.9                 |
| Water content                   | %                                        | 56 - 64              |
| Bead size distribution†         |                                          |                      |
| >1.4 mm, max. (14 mesh)         | %                                        | 0                    |
| >1.2 mm, max. (16 mesh)         | %                                        | 2                    |
| <0.42 mm, max. (40 mesh)        | %                                        | 2                    |
| Whole beads, min.               | %                                        | 95                   |

| Typical Physical and Chemical Properties            |                     | Cl <sup>-</sup> form |
|-----------------------------------------------------|---------------------|----------------------|
| Total swelling (Cl <sup>-</sup> → OH <sup>-</sup> ) | %                   | 15                   |
| Particle density                                    | g/ml                | 1.06                 |
| Shipping weight                                     | g/l                 | 670                  |
|                                                     | lbs/ft <sup>3</sup> | 42                   |

### Recommended Operating Conditions

- Maximum operating temperature 100°C (212°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
  - Regeneration/displacement rinse 1-10 m/h (0.4-4 gpm /ft<sup>2</sup>)
- Total rinse requirement 3-6 Bed volumes
- Regenerant:
  - Type 4-8% NaOH
  - Temperature Ambient or up to 50°C (122°F) for silica removal

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

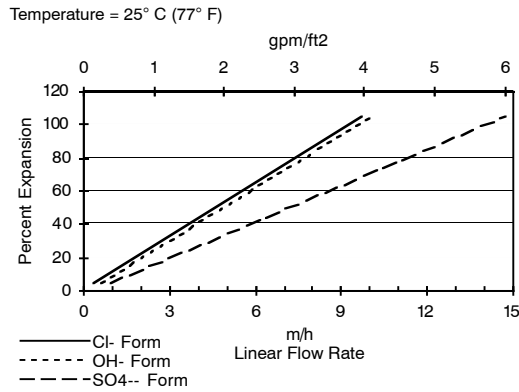
Typical properties and applications

DOWEX MSA-1 C strong base anion exchange resin is a condensate grade macroporous resin with exceptional physical stability and resistance to osmotic shock.

Packaging

25 liter bags or 5 cubic feet fiber drums

Figure 1. Backwash Expansion Data

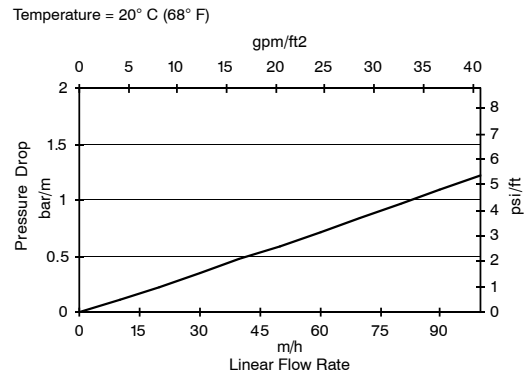


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



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) 11-5188-9222  
 Europe: (+32) 3-450-2240  
 Pacific (ex. China): +800-7776-7776  
 China: +10-800-600-0015  
<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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