



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 ⁻ form
Total exchange capacity, min.	eq/l	1.0
	kgr/ft ³ as CaCO ₃	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 ⁻ form
Total swelling (Cl ⁻ → OH ⁻)	%	15
Particle density	g/ml	1.06
Shipping weight	g/l	670
	lbs/ft ³	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 ²)
	Service/condensate polishing	40-150 m/h (16-60 gpm/ft ²)
	Backwash	See Figure 1
	Regeneration/displacement rinse	1-10 m/h (0.4-4 gpm /ft ²)
	• 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).

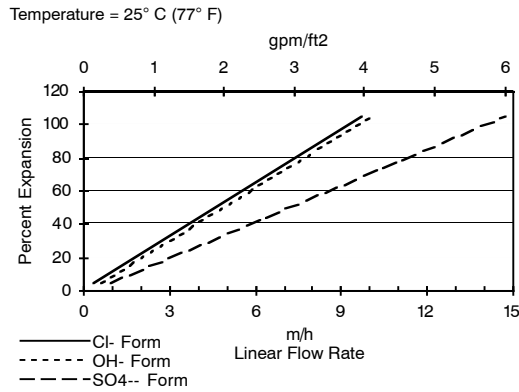
Typical properties and applications

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

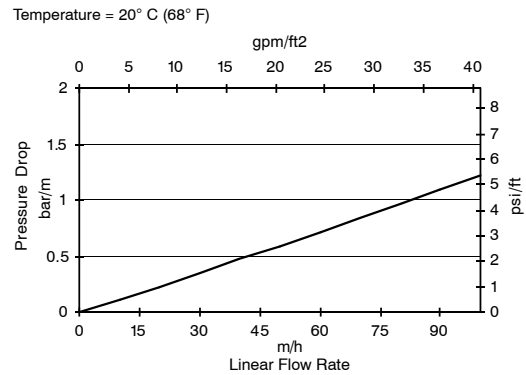


For other temperatures use:

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

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

Figure 2. Pressure Drop Data



For other temperatures use:

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

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

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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