

water

RESINDION RESINS FOR WATER TREATMENTS

TDS 05039

RELITE MAC 5 - Chelating resin for alkaline earths and heavy metals removal

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RELITE MAC 5

RELITE MAC 5 is a chelating resin based on a highly porous copolymer of styrene and divinylbenzene with specific iminodiacetic functional groups conferring very high selectivity in front of alkaline earths and heavy metals.

This particular resin is specifically applied for the removal of Ca/Sr/Mg during the brine purification treatments, allowing at the same time a complete elution of heavy metals during regeneration steps.

RELITE MAC 5 is highly resistant to osmotic shocks; in side-by-side laboratory tests over 50 cycles, RELITE MAC 5 has been shown to be vastly superior, in this respect, to phosphonic and thiolic type chelating resins specifically used for the above mentioned applications. In fact, as an example, when converting a mercury cell chloralkali plant to the ion exchange membrane system, the very high affinity of RELITE MAC 5 for mercury is used for decontaminating the mercury-containing brine.

RELITE MAC 5 is also suggested for the removal of heavy metals (catalysts) present in organic and aqueous/organic solutions.

The resin is supplied in a calibrated particle size to allow its application in highly concentrated solutions.

TYPICAL CHARACTERISTICS

Matrix	:	Porous copolymer styrene-DVB		
Functional group	:	Iminodiacetate		
Colour and physical form	:	White yellowish opaque beads		
Particle size range	:	0.425 ÷ 1.18	m m	
Effective size	:	0.4 min	m m	
Uniformity Coefficient	:	1.5	max	
Ionic form at the delivery	:	Na ⁺		
Volume change	:	- 30 %	max	Na ⁺ --> H ⁺ form
Cu ⁺⁺ capacity	:	1.0 min	eq/l	
Water retention	:	55 ÷ 65	%	
Chemical stability	:	Stable in the whole pH range		
Thermal stability	:	120 °C max	(Na ⁺ form);	80 °C max (H ⁺ form)
Shipping density	:	730	g/l approx.	
Standard packaging	:	25 or 1000	liter bags	

RECOMMENDED OPERATING CONDITIONS

Operating pH range	:	4 ÷ 10		
Operating temperature range	:	5 ÷ 80	°C	
Minimum bed depth	:	1500	m m	
Linear operating flowrate	:	2 ÷ 25	m/h	
Backwash expansion	:	50 ÷ 80	%	
Regenerants	:	HCl	NaOH	
Regenerant level range	:	130 ÷ 150	70 ÷ 100	g/l
Concentration range	:	5 ÷ 10	2 ÷ 4	%
Slow rinse volume	:	1.5 ÷ 2	1.5 ÷ 2	BV
Fast rinse volume	:	5 ÷ 7	variable (*)	BV

(*) According to the needs of each specific process.

Resindion S.r.l.

A Subsidiary of  MITSUBISHI CHEMICAL

OPERATING CAPACITY

Operating capacity depends on various parameters, such as inlet composition, endpoint, kinetic load and regenerant level.

In case of need, please contact our TECHNICAL DEPARTMENT.

Fig. 1 BED EXPANSION IN WATER

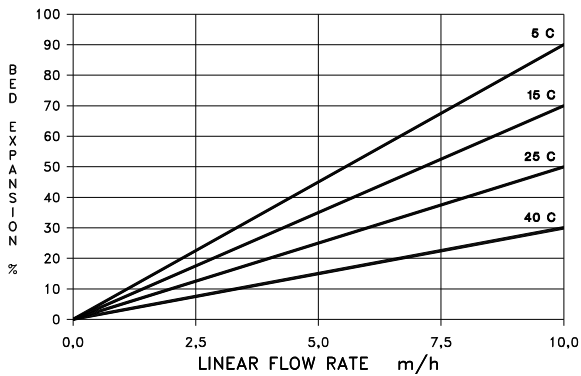
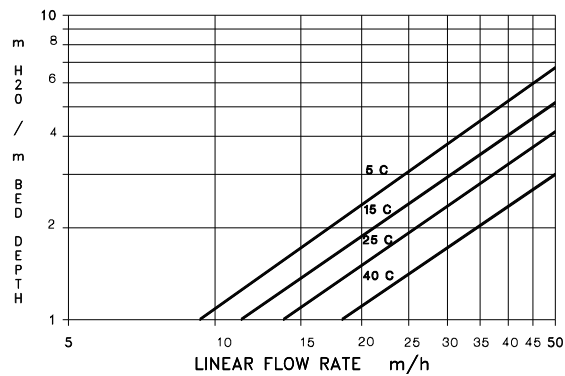


Fig. 2 PRESSURE DROP IN WATER



RECOMMENDED HCl QUALITY FOR REGENERATION (*)	
Suspended solids	0 ppm
Chlorine	10 ppm
Iron	20 ppm
Heavy metals	10 ppm
Sulphates	5000 ppm

(*) Values referred to HCl 100%.

RECOMMENDED NaOH QUALITY FOR REGENERATION (*)	
Silica	10 ppm
Iron	10 ppm
Mercury	2 ppm
Heavy metals	5 ppm
Chlorates	10 ppm as O ₂
Sodium carbonate	0.5 %
Sodium chloride	0.5 %
Sodium sulphate	0.2 %
Hardness	0 %
Suspended solids	0 %

(*) Values referred to NaOH 100%.

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