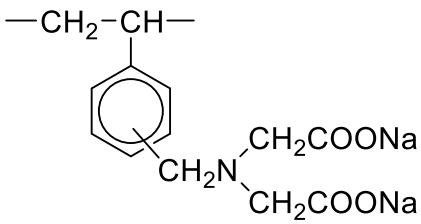
Product Data Sheet

DIAION™ CR11

DIAION™ CR11 is an iminodiacetate type chelating resin. It has a high selectivity for multivalent metal ions, especially transition metal elements like Fe(III) and Cu(II), than monovalents. It also provides rapid kinetics, high operating capacity, low swelling and shrinking ratio, and excellent mechanical stability. It is recommended for chemical process separations, and metals removal and recovery from waste water.

The selectivity of DIAION™ CR11 toward metal ions :
$Cr^{3+} > In^{3+} > Fe^{3+} > Ce^{3+} > Al^{3+} > La^{3+} > Hg^{2+} > UO^{2+} > Cu^{2+} > VO^{2+} > Pb^{2+} > Ni^{2+} > Cd^{2+} > Zn^{2+} > Co^{2+} > Fe^{2+} > Mn^{2+} > Be^{2+} > Ca^{2+} > Mg^{2+} > Sr^{2+}$

Product

Grade Name	DIAION™ CR11
Type	Chelating Resin
Matrix	Styrene-DVB, Highly Porous
Chemical Structure	
Functional Group	Iminodiacetate
Ionic Form	Na^+

Specification

Whole Bead Count	-	95 min.
Cu Adsorption Capacity	mmol/mL	0.5 min.
Water Content	%	60 - 66
Particle Size Distribution on 1180 µm	%	5 max.
Particle Size Distribution thr. 355 µm	%	2 max.
Effective Size	mm	0.40 min.
Uniformity Coefficient	-	1.6 max.
Calcium Breakthrough Capacity	meq/mL	0.35 min.

Typical Properties

Shipping Density	g/L	730
Mean Particle Size	µm	560
Particle Density	g/mL	1.12
Total Swelling (H^+ to Na^+)	%	28

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Recommended Operating Conditions

Maximum Operating Temperature	°C	120 (Na^+)
		80 (H^+)
Effective pH Range		4* - 10**
Minimum Bed Depth	mm	800
Service Flow Rate	m/h	10 - 30
Regenerant		HCl
Regenerant Concentration	%	HCl 4 - 10
Regenerant Level	g/L	100 - 200
Regenerant Flow Rate	m/h	2 - 10
Total Rinse Requirement	BV	10 - 20

*Some metal ions can be slightly adsorbed at a pH lower than 4.

**In an alkaline solutions, ions may be precipitated as hydroxides.

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Hydraulic Characteristics

The approximate pressure drop at various temperatures and flow rates for each meter of bed depth of DIAION™ CR11 resin in normal down flow operation is shown in the graphs below.

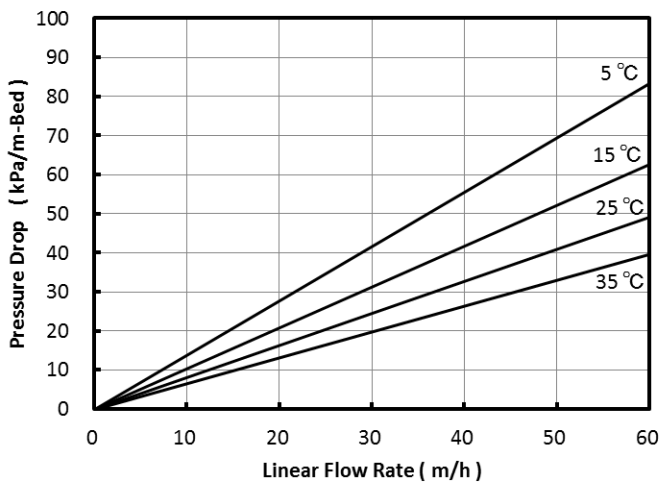

Fig. 1 Pressure Drop of CR11

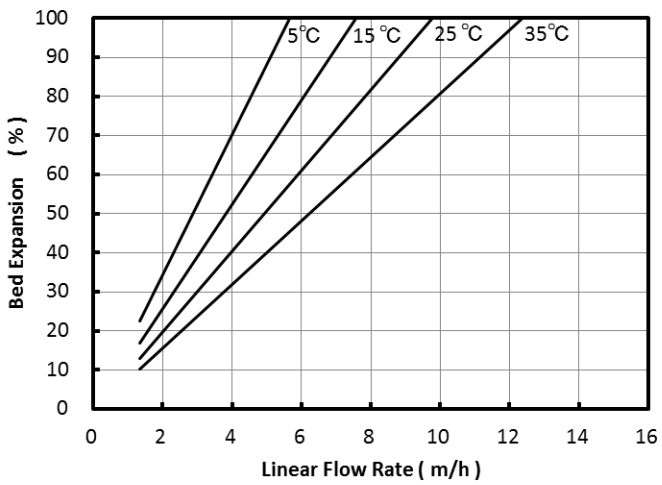

Fig. 2 Bed Expansion of CR11

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