

Product Data Sheet

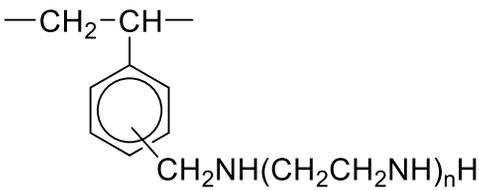
DIAION™ CR20

DIAION™ CR20 is a polyamine type chelating resin. It has a high selectivity for divalent metal ions, especially transition metal elements, than monovalents. It is recommended for chemical process separations, and metals removal and recovery from waste water.

The Selectivity of DIAION™ CR20 toward metal ions :

$\text{Hg}^{2+} > \text{Fe}^{3+} > \text{Cu}^{2+} > \text{Zn}^{2+} > \text{Cd}^{2+} > \text{Ni}^{2+} > \text{Co}^{2+} > \text{Ag}^{+} > \text{Mn}^{2+}$

Product

| | | |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Grade Name | DIAION™ CR20 | |
| Type | Chelating Resin | |
| Matrix | Styrene-DVB, Highly Porous | |
| Chemical Structure |  <p>The structure shows a polymer backbone consisting of a methylene group (-CH₂-) and a methine group (-CH-) connected to a benzene ring. The benzene ring has a polyamine chain (-CH₂NH(CH₂CH₂NH)_nH) attached to its para position.</p> | |
| Functional Group | Polyamine | |
| Ionic Form | Free Base | |

Specification

| | | |
|----------------------------------------|---------|-----------|
| Whole Bead Count | - | 95 min. |
| Cu Adsorption Capacity | mmol/mL | 0.4 min. |
| Water Content | % | 50 - 60 |
| Particle Size Distribution on 1180 μm | % | 5 max. |
| Particle Size Distribution thr. 300 μm | % | 1 max. |
| Effective Size | mm | 0.40 min. |
| Uniformity Coefficient | - | 1.6 max. |

Typical Properties

| | | |
|-----------------------------------------|------|------|
| Shipping Density | g/L | 640 |
| Mean Particle Size | μm | 570 |
| Particle Density | g/mL | 1.05 |
| Total Swelling (FB to Cl ⁻) | % | 10 |



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Chromatography & Purification Solutions

Recommended Operating Conditions

| | | |
|-------------------------------|-----|------------|
| Maximum Operating Temperature | °C | 100 |
| 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.



Hydraulic Characteristics

The approximate pressure drop at various temperatures and flow rates for each meter of bed depth of DIAION™ CR20 resin in normal down flow operation is shown in the graphs below.

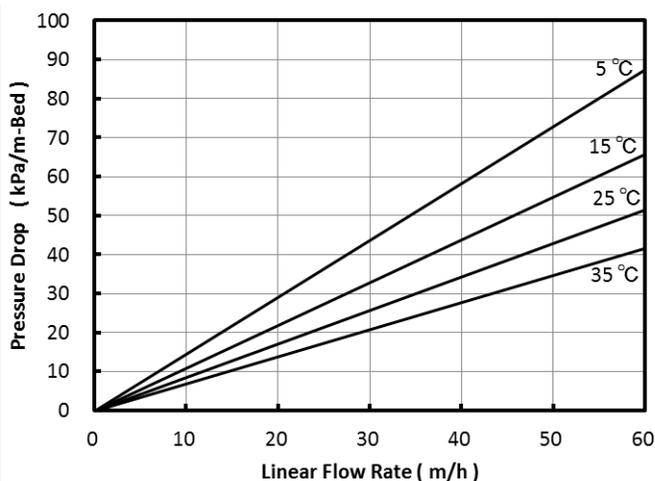


Fig. 1 Pressure Drop of CR20

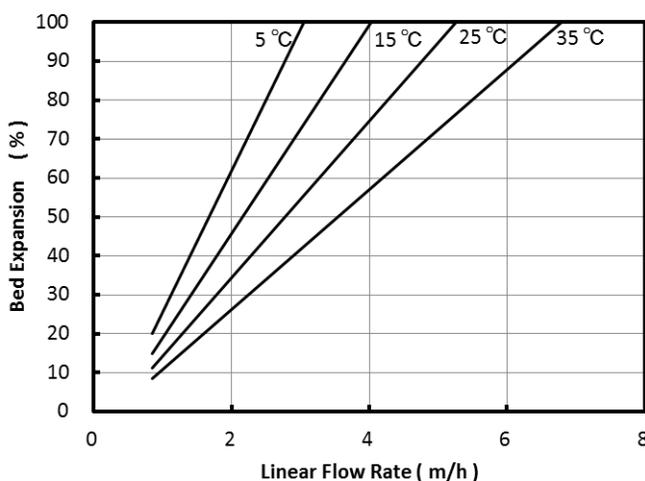


Fig. 2 Bed Expansion of CR20

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