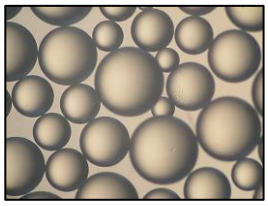
Product Data Sheet

AMBERLITE™ IRA402 Cl Ion Exchange Resin

Gaussian, Gel, Strong Base Anion Exchange Resin for Industrial Demineralization Applications

Description

AMBERLITE™ IRA402 Cl Ion Exchange Resin is a general-purpose demineralization resin with a long-established track record of reliable performance in the industry. This industry-staple resin is designed to provide excellent balance of properties for capacity, strength, silica selectivity, and a long lifetime for co-flow regenerated systems in variety of industrial water treatment applications.



Applications

- Demineralization
  - Ideally when treating water with:
    - High percentage of silica
  - When the treatment goal is:
    - Removal of strong and weak acids
    - Lowest silica leakage

System Designs

- Co-current

Typical Physical and Chemical Properties**

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong base anion, Type I
Functional Group	Trimethylammonium
Physical Form	Amber, translucent, spherical beads
Chemical Properties	
Ionic Form as Shipped	Cl^-
Total Exchange Capacity	≥ 1.20 eq/L (Cl^- form)
Water Retention Capacity	49.0 – 59.0% (Cl^- form)
Particle Size	
Particle Diameter §	600 – 750 µm
Uniformity Coefficient	≤ 1.80
< 300 µm	≤ 1.0%
> 1180 µm	≤ 5.0%
Stability	
Whole Uncracked Beads	≥ 90%
Swelling	$Cl^- \rightarrow OH^-$ ≤ 20%
Density	
Particle Density	1.07 g/mL
Shipping Weight	670 g/L

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

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Suggested Operating Conditions**

Temperature Range	
OH^- form ‡	5 – 60°C (41 – 140°F)
Cl^- form	5 – 100°C (41 – 212°F)
pH Range	
Service Cycle	1 – 14
Stable	0 – 14

‡ Operating at elevated temperatures, for example above 60 – 70°C (140 – 158°F), may impact resin life. Contact our technical representative for details.

For additional information regarding recommended minimum bed depth, operating conditions, and regeneration conditions for separate beds (Form No. 177-03729) in water treatment, please refer to our Tech Fact.

Hydraulic Characteristics

Estimated bed expansion of AMBERLITE™ IRA402 Cl Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLITE IRA402 Cl as a function of service flowrate and temperature is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean water and a well-classified bed.

Figure 1: Backwash Expansion

Temperature = 10 – 60°C (50 – 140°F)

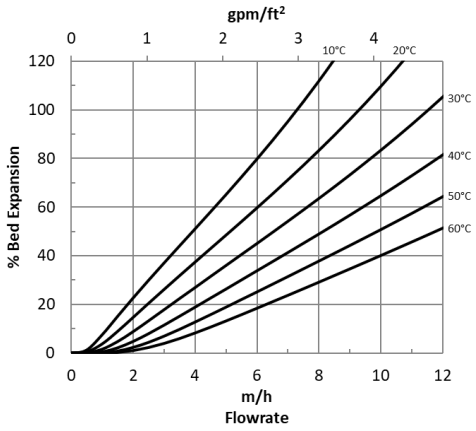
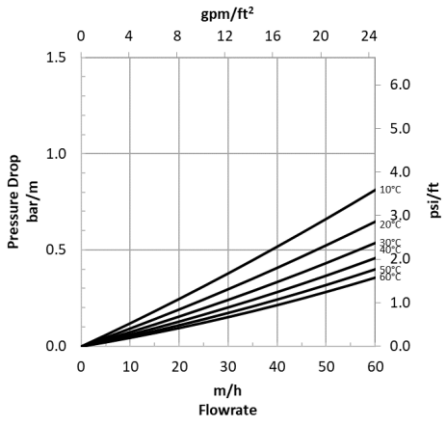


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



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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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