AMBERLITE IRA405 Cl resin is a type 1 strong base gel anion exchange resin based on a crosslinked polystyrene polymer matrix. Its main application is water demineralization, especially in plants which are known to have organic fouling problems with conventional anion resins. The unique open gel structure of AMBERLITE IRA405 Cl resin allows excellent removal of organic species during the service cycle, protecting the boiler from acidic decomposition products. The open gel structure also allows the release of the loaded organics from the resin during the normal regeneration cycle, which helps prevent AMBERLITE IRA405 Cl resin from fouling. This combination provides superior rinse performance and silica removal over a longer lifetime than traditional anion exchange resins in organic fouling situations. AMBERLITE IRA405 Cl resin has unusually high capacity for a product of this type, and can be used with hot caustic regeneration whenever required. When used in a primary anion unit or in a mixed bed, AMBERLITE IRA405 Cl resin delivers the same silica leakage and operating capacity characteristics as conventional styrenic strong base resins, while at the same time providing the latest solution to the organic fouling issue.

**PROPERTIES**

- **Yellow translucent spherical beads**
- **Polystyrene divinylbenzene copolymer**
- **Quaternary Ammonium**
- **Chloride**

**Total exchange capacity**

\[ \geq 1.30 \text{ eq/L (Cl}^-\text{ form)} \]

**Moisture holding capacity**

\[ \leq 54 \text{ to } 58 \% \ (\text{Cl}^-\text{ form)} \]

**Shipping weight**

690 g/L

**Particle size**

- Uniformity coefficient \[ \leq 1.4 \]
- Harmonic mean size \[ 0.550 \text{ to } 0.650 \text{ mm} \]

**Reversible swelling**

\[ \text{Cl}^- \rightarrow \text{OH}^- \leq 25 \% \]

**SUGGESTED OPERATING CONDITIONS**

- **Maximum operating temperature** 60 °C
- **Minimum bed depth** 800 mm
- **Service flow rate** 5 to 40 BV*/h
- **Regeneration**
  - **Regenerant** NaOH
  - **Level (as 100 % NaOH)** 40 to 100 g/L
  - **Concentration** 2 to 4 %
  - **Minimum contact time** 30 minutes
  - **Slow rinse (caustic displacement)** 1.5 to 3 BV at regeneration flow rate
  - **Fast rinse** 3 to 6 BV at service flow rate

\[ *1 \text{ BV (Bed Volume) } = 1 \text{ m}^3 \text{ solution per m}^3 \text{ resin} \]
**LIMITS OF USE**

AMBERLITE IRA405 Cl resin is suitable for industrial uses. For other specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Rohm and Haas in order to determine the best resin choice and optimum operating conditions.

**HYDRAULIC CHARACTERISTICS**

Figure 1 shows the bed expansion of AMBERLITE IRA405 Cl resin, as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for AMBERLITE IRA405 Cl resin, as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with clear water and a correctly classified bed.