



Ion Exchange Resins

Hydrochloric acid cleaning of mixed bed resins

Introduction	Acid treatment of a mixed bed is used to remove inorganic contaminants, principally metals. It can be applied to both cation and anion exchange resins <i>in situ</i> .
Procedure	<p>The acid is injected in two concentration steps to avoid excessive osmotic stress on the resins.</p> <ol style="list-style-type: none">1. Exhaust the mixed bed. A dilute solution of sodium chloride can be used.2. Pass upflow 1 bed volume 5 percent HCl solution, contact time 30 minutes.3. Pass upflow 1 bed volume 10 percent HCl solution, contact time 30 minutes.4. Leave to soak overnight with occasional air injection to facilitate contacting of the acid with the resins.5. Displace the acid downflow with 5 bed volumes demineralized water.6. Backwash the resins for separation and then perform a double regeneration (normal concentration, double injection time and total quantity).
Warning	<p>Adequate protection for all parts of the body should be provided whenever using hydrochloric acid and the manufacturer's guidelines for handling this chemical should be carefully followed.</p> <p>Not all plants are compatible with hydrochloric acid. When the usual regenerant of the cation resin is sulfuric acid, compatibility of the equipment with HCl should be confirmed.</p>

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For more information about
DOW Water and Process Solutions:

<http://www.dowwaterandprocess.com>

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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