

## Aluminum Removal From HCl

The following values are expected capacities of ResinTech CG8 cation resin for removing aluminum cations from dilute HCl solutions:

EQUIVALENT PERCENT HCl	HARD WATER DEIONIZED WATER	HARD WATER SOFTENED WATER	WITH pH ABOVE 6.5	LEAKAGE
1.15	0.2	6.0 at 15%	8.3	--
0.59	0.7	3.0 reclaimed* plus 6.0 # at 25%	5.6	--
0.425	0.8	9.0 at 25%	2.7	7%
0.425	0.6	9.0 at 15%	2.7	7%
0.224	0.7	6.0 at 15%	1.0	--

\*Tail end of acid from previous run, diluted at 12.5%

The recommended HCl concentrations are below 1.0%. The capacity at 1.15% HCl could be raised by regenerating at 9 pounds per cubic foot of sulfuric acid; using 3 pounds per cubic foot of reclaimed acid followed by 6 pounds per cubic foot of fresh acid at 25%. The capacity might be increased to 3 pounds per cubic foot.

Hydrochloric acid can be used as a regenerant. One pound of sulfuric acid is equivalent to 0.725 pounds of HCl; this will probably yield higher capacities. HCl is completely ionized whereas sulfuric acid yields only a fraction of its second hydrogen ion. Therefore, HCl is more efficient on an equivalent basis as a regenerant.

