

Aluminum Manufacturer Saves US\$377,000/Year With PolyFloc* AP and Recycling of Process By-product into Wastewater Treatment

Challenge

An aluminum manufacturer etches aluminum with hydrochloric acid, which produces aluminum chloride. This process by-product was being hauled away, despite the fact that chloride is valuable in wastewater treatment for coagulation of suspended solids, oil, grease, etc.

The process by-product of aluminum chloride was being hauled away at a cost of more than US\$310,000/yr. In addition, this aluminum manufacturer was buying “new” aluminum chloride for its wastewater plant at a cost of US\$68,500/yr.

Solution

GE Water & Process Technologies jar tested the wastewater system using aluminum chloride from the manufacturing process. These studies showed that 50% of this chemical could be recycled in wastewater treatment. To make up the difference, GE fed a PolyFloc AP series product, an anionic flocculant, to aid in the settling process. (The remaining aluminum chloride was used by another wastewater plant with similar system needs.)

Results

The aluminum manufacturer entirely eliminated the cost of hauling the aluminum chloride process by-product, saving more than US\$310,000/yr. In addition, chemical costs decreased 70%. Eliminated handling of 182 drums per year also saved this manufacturer US\$18,200/yr.

Continuous Cost Reduction Summary	
Item	Savings (US\$ per year)
Byproduct removal Avoided hauling aluminum chloride	\$310,250
Chemicals Cost of previously-used chemicals (US\$68,500) minus reduced quantity of new chemical (US\$20,000)	\$48,500
Manpower Elimination of drum handling costs	\$18,200
Continuous Cost Reduction	US\$376,950



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