

This case study highlights an application done using Advanced Polymer Coatings' ChemLINE® polymer coating inside a stainless steel tank at a major pharmaceutical-grade chemical company in the U.S.

### Background

An FDA Registered, US-based major manufacturer of pharmaceutical-grade chemical ingredients had issues with a stainless steel mixing tank housing 50% Sodium Hydroxide. The commodity held inside the tank was actively mixed by a gravity mixer underneath the tank floor, constantly agitating the chemical during storage. The stainless steel tank became compromised after being heated to an excessive temperature, turning the interior stainless steel walls blue and causing micro-fissures to form. Soon after, Iron began to leech into the product and compromise purity - the main concern here for the customer.

The location of the tank was such that removing the tank wouldn't be a viable option. Instead, the customer sought to re-purpose the mixing tank to a storage tank by applying a lining. They contacted Arbonite, in Doylestown, PA, and contracted them to internally line the 4,000 gallon 316L stainless steel above ground storage tank. The commodity held is 50% Sodium Hydroxide at ambient temperatures. ChemLINE® 784/32 was the recommended lining to ensure both product purity and corrosion protection.

### Tank Preparation & Application

Due to the location of the tank, and the sensitive surrounding environment of the facility, nothing less than 100% containment needed to be met. Arbonite, a leading corrosion protection company, had a structure erected surrounding the 4,000-gallon tank and a floating scaffolding was suspended from the top of the surrounding structure where a protective wrapping was then hung from the structure, ensuring 100% containment was met.



*(Far Left)* 100% containment achieved. *(Near Left)* A look inside the tank, post-blast, with suspended scaffolding. *(Below)* The exterior of the tank and entryway.



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(Above Left) The heat curing equipment is set up to cure the ChemLINE® coating to spec. (Above Middle) The vent is set up to move the fumes out of the manufacturing facility. (Above Right) Heat cure equipment with an insulated vent extended from the heat curing equipment into the tank. (Bottom Right) Fully cured topcoat layer inside the storage tank.

An exhaust system (pictured above middle) was then set in place to vent the fumes safely out of the facility. After the base coat and top coat of ChemLINE® were sprayed and heat cured, Arbonite performed a spark test, ensuring no holidays were present in the coating. The complete application process of the coating was performed without any incidents or hangups. The coating was applied and cured well and the containment structure and scaffolding were removed.

## The Results

The customer is very satisfied with the performance of the ChemLINE® lining and the services provided by Arbonite. 100% containment was achieved and no delay in normal business operations was present during the entire duration of the application. The customer can rest assured knowing both product purity and chemical corrosion protection are in place within this re-purposed stainless steel tank lined with ChemLINE®.

For more information on how ChemLINE® Coatings can solve your corrosion problems, contact your ChemLINE® Representative and visit the Advanced Polymer Coatings website.

