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# CASE HISTORY

## Hydrochloric Acid Tanks Perform Under Pressure

<b>Market Segment:</b>	Oil and Gas / Chemical Processing
<b>Composite Applications:</b>	Chemical Storage Tanks and Scrubber
<b>Resin:</b>	Vipal F010 bisphenol A epoxy VE Vipal F085 epoxy novolac VE
<b>Manufacturing Process:</b>	Filament Winding
<b>Tank Diameter:</b>	13.5 feet
<b>Tank Height:</b>	26 feet
<b>Installed:</b>	2013
<b>Location:</b>	Fort Saskatchewan Alberta, Canada



*Construction on an HCL transload facility in Alberta, Canada, included these four surge capacity tanks and scrubber (left), all of which feature Vipal® corrosion-resistant resins.*

In June 2014, Panther Industries Inc. will open a new 10-acre facility in the Sturgeon County Industrial Park in Fort Saskatchewan, approximately 20 miles northeast of Alberta's capital city of Edmonton. Panther Industries, a major distributor for the oil and gas industry in North America and overseas, has built the transload facility to move shipments of hydrochloric acid (HCL) from trains to trucks for transport to oil fields.

A critical part of the facility are four fiberglass surge capacity tanks. "This is a high-volume facility," says Jamie Dewar, Fort Saskatchewan project manager for Panther Industries. "At our maximum capacity during a 10-hour shift, we will be able to offload eight railcars and load 24 trucks. The bulk tanks will ensure that we always have enough product on hand so we don't get halfway through loading a truck and run out of hydrochloric acid."

Chemposite©, based in Delta, British Columbia, Canada, designed and manufactured the HCL tanks and liners,

## Hydrochloric Acid Tanks Perform Under Pressure, continued

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which feature AOC's Vipel F010 and F085 corrosion-resistant resins. "Hydrochloric acid is a corrosive liquid and there are a lot of safety concerns," says Dewar. "We had to ensure the tank was designed to handle both vacuum and pressure. And the choice of resin had to be compatible with the product as well."

The surge capacity tanks control pressure variations caused by the flow of HCL. "There are safety valves in the tank - weighted plates sitting on top of flanges - so if the pressure exceeds the weight of the plate during the unloading process, it lifts, which relieves the pressure and protects the tank," says Marvin Hlynka, P.Eng., the engineering manager with Chemposite who designed the tanks.

The four tanks also were designed to handle seismic loads, winds and frigid temperatures in Alberta. The filament wound fiberglass reinforced plastic (FRP) tanks are approximately 0.75 inches thick with a 0.22-inch double corrosion liner. The liner includes a repeated lamination sequence of one ply of C-glass veil (a thin layer of fiberglass tissue), followed by two plies of 1.5-ounce per square foot chopped strand mat. The tanks incorporate a dual resin system: Vipel® F010, used in the structural layer, is a premium epoxy vinyl ester, bisphenol-A which offers a good balance of corrosion resistance and processability. The liner utilizes Vipel® F085, which is an epoxy novolac vinyl ester resin that has exceptional organic solvent resistance with improved high-temperature properties.

Chemposite also built a scrubber for Panther Industries' new facility that is 6 feet in diameter and 27 feet tall. The processing section of the air pollution control device is 42 inches in diameter. The FRP scrubber includes Vipel® F010 resin.

AOC was a perfect partner for this project, says Hlynka. "AOC offers a good working relationship, great technical support with user-friendly resin systems and they were very competitive in pricing and delivery."

### About Chemposite®

Chemposite is an industry leader in the design, engineering, manufacturing and supply of corrosion-resistant

fiberglass reinforced plastic (FRP) and advanced composite products for a wide range of industrial applications. Its products include pipe and fittings, ducting and stacks, tanks and vessels, pressure vessels, scrubbers and internals, carbon absorbers, hoods and covers, dampers, pump basins and stations, pultruded structural shapes and custom fabrication.

### About AOC

AOC is a leading global supplier of resins, gel coats, colorants, additives and synergistic material systems for composites and cast polymers. For more information on AOC technology, quality and service, e-mail [corrosionresins@aoc-resins.com](mailto:corrosionresins@aoc-resins.com), phone (866) 319-8827, or go to [AOC-RESINS.com](http://AOC-RESINS.com).



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