

CaseHistory

Semiconductor Processing



RL Industries use Vipel® F010 Vipel F010 bisphenol A epoxy vinyl ester resin to manufacturer dual laminate tanks for the semi-conductor industry

Market Segment:	Chemical Processing
Composite Applications:	Two PVDF-lined Tanks Five PP-Lined Tanks
Resin:	Vipel® F010 Bisphenol A epoxy vinyl ester
Heights:	5 to 13.25 feet (0.9 to 4 meters)
Diameters:	4 to 9 feet
Capacities:	650 to 6,500 gallons (2,460 to 24,605 liters)
Installed:	2004

The composite manufacturing specialists of RL Industries use Vipel® corrosion-resistant resin technology and service from AOC to support the growing worldwide demand for personal computers.

RL Industries' connection to the computer industry includes their expertise in special dual-laminate tank construction. For a recent expansion, a major U.S. semiconductor manufacturer needed seven dual-laminate tanks. Two tanks are for storing high purity sulfuric acid, which is used in a variety of semiconductor manufacturing processes. These tanks are fabricated with a 3 millimeter liner of fabric-backed polyvinylidene fluoride (PVDF), a thermoplastic fluoropolymer engineered to resist highly acidic environments. The five other tanks are used to process a semiconductor industry waste stream containing concentrated heavy metals and hydrofluoric acid. These vessels are lined with polypropylene.

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For all vessels, the structural laminate that supports the liner is made of E-glass fibers in a resin matrix of Vipel F010 bisphenol A epoxy vinyl ester.

RL Industries' craftsmen use spray-up to produce the tank shell and hand lay-up to produce the tank top and bottom and nozzle flanges.

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"In addition to providing the required physical properties, the Vipel resin processes well in both the spray-up and hand lay-up processes," comments Brian Linnemann, Engineering Manager, RL Industries. "The resin has good wetting characteristics for all the laminate reinforcements as well as a carbon veil that backs the thermoplastic to meet requirements for high voltage spark testing." The E-glass reinforcements for the application are 1.5 and 0.75-ounce (458 and 229 gram) chopped strand mat, woven roving and gun roving.

Linnemann points out that there was more to the AOC resin purchase than material performance and processability. "AOC delivered on time through their designated distribution channels," he says. "AOC technical personnel were very responsive in providing base line resin chemistry and cure information to incorporate Vipel F010 into the fabrication processes".

About RL Industries

RL Industries, Inc., Fairfield, Ohio, USA, has been manufacturing high quality corrosion-resistant composite equipment and systems for more than 40 years. The company is accredited by the American Society of Mechanical Engineers to certify that the composite vessels that RL Industries builds meet the ASME RTP-1 standard and Section X of the ASME National Boiler and Pressure Vessel Code. For more information, phone (513) 874-2800 or e-mail sales@rl-industries.com.

About AOC

AOC is a leading global supplier of resins, gel coats, colorants, additives and synergistic material systems for composites and cast polymers. AOC knows technology, lives quality and delivers service better than any other composites resin supplier. For more information, e-mail corrosionresins@aoc-resins.com, phone (901) 854-2800 or go to CorrosionResins.com.

