



***For a Total Solution to all of your
Materials Testing Needs***

Triosyn Tests Substrate Elongation before Manufacturing to Ensure Consistent Quality

Triosyn Corp. a subsidiary of Safe Life™ Corp., makes specialty products using its patented Triosyn® resin, which is a unique iodine preparation with significant antimicrobial properties. It controls the delivery and dosage of molecular iodine directly to microorganisms. The Triosyn® resin is applied to a polymer substrate that is used for disposable respirators and other personal protection devices. The manufacturing process generally involves fusing three substrate surfaces. Triosyn engineers were finding that the differences in tensile strengths of the substrate materials caused puckers to form between the materials. They decided to tensile test the polymers before manufacturing so that they could appropriately tension the rollers.

Scott Teuscher, Engineer, researched available tensile testers and selected an ADMET eXpert 5601 Universal Testing Machine equipped with an eP Digital Controller and a WinCOM Plus data management program, based on cost, availability and capabilities.

Triosyn Corp., a subsidiary of Safe Life Corp., manufactures antimicrobial membranes that devitalize viruses, bacteria and fungi. Its patented resin, Triosyn®, not only captures but renders the microbes harmless. Many of its products are certified by the National Institute for Occupational Safety and Health (NIOSH).

The company manufactures antimicrobial disposable respirators, wound dressings and other personal protection devices. The technology has many other applications including uses in bio shelters and for medical and industrial filtration applications, such as for specialized HEPA (High Efficiency Particulate Air) filters.

Triosyn conducts a number of bio, filtration and mechanical characterization tests on its products at its facility in Williston, Vermont and at its sister organization, Triosyn Research & Development in Mirabel, Quebec.

Precise tensioning required

The decision was made to test the material lots to ASTM D5035-06 specifications as they were received to determine the tensile strength of the material. This would enable the proper tensioning each of the rollers in order to prevent elongation. Explained Scott Teuscher, Engineer, "Now, we test the substrate because knowing the yield strength of each of the different layers allows us to set the correct tension so we don't get the binding when we unroll [the material] during the manufacturing process."

The company had been using an outside lab to test elongation of the straps on its face masks but decided to bring the process in-house for the substrate testing.

SOLUTION OVERVIEW

Industry: Plastics

ADMET Product: eXpert 5601 with an eP Digital Controller and WinCOM Plus

Customer: Triosyn Corp.

Application: Tensile test specialty plastic substrates to improve manufacturing quality

ADMET delivers value – quickly

Teuscher set out to find an affordable, capable Universal Testing Machine (UTM). He was looking for a new machine but was put off by the \$20,000 price tag. He thought he would have to go to a refurbished machine, but then he found ADMET.

“Compared to all the others – and I have a whole list of them – ADMET was the least expensive by a factor of three from the closest competitor for a product that was capable of doing what we needed without buying a refurbished machine,” said Teuscher.

Teuscher had a pretty good idea of what he needed, so he worked with an ADMET sales engineer to specify the proper test system. He ordered an ADMET eXpert 5601 single column tabletop testing machine with an eP Digital Controller and a WinCOM Plus serial communications, data management and plotting program.

The entire package, including specialized grips, came to under \$8,000 and was delivered within a few weeks.

Pre-production tests deliver results

Now, all of the polymer rolls are sampled when they are received and the tensions are adjusted accordingly. Explained Teuscher, “The manufacturing process is adjusted based on the lowest yield strength, so all of the winding tensions on the

slitter/rewind machine are set for the lowest yield material.”

Teuscher is happy with the results. He found that the eXpert system is easy to work with, although he did call for support. He commented, “I had a little trouble understanding WinCOM – understanding the process – the order of operations really. ADMET was very helpful.”



Teuscher records test results on a laptop computer in the lab using the WinCOM Plus serial communications and data management program. He can save data to an Excel spreadsheet and plot stress/strain curves for single or multiple samples.

Teuscher has written a standard operations manual and programmed two routines for regular and HEPA materials tests for the three operators who work with the machine.

He likes the machine's flexibility. “The beauty of it is that you can turn it into a horizontal tester based on the way the machine works. It really is a unique design for tensile testing machines

because the actuator is one separate unit.”

Although he was not aware of ADMET before he started his research, he's glad he found them. ADMET was quick and cost effective, and perfectly met his requirements.

For more information:

For more information about ADMET products or services, please call us at 800-667-3220 or 781-769-0850, email sales@admet.com or visit our Web site at <http://www.admet.com>.

For additional information on Triosyn, Corp., call 802-865-5084, email info@safelife.com, or visit <http://www.triosyn.com>.

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