



# Compounding Lines

Your Global Compounder of Custom Engineered Thermoplastics

Vol. 27, No.2, November 2014



## Hard Easy to Handle

Unique product made from innovative compound keeps workers safer

Dale Gregg has been developing creative solutions to challenging business and industry problems for decades. When a friend explained how his son had crushed his hand while moving sections of heavy hose in the oil fields of Canada, Gregg grabbed a napkin and made a quick sketch of a device that could potentially help avoid this type of injury in the future.

*"In many industries, like fracking, for example, there might be dozens of guys dragging pipe and hose around the fields all day long," he explained. "The hoses are usually too wide to get your hands around. They may be under high pressure, or even filled with hazardous gas or chemicals. The only way to move them is to bend down, hug them to your body and walk while dragging them—often over muddy, wet, slippery or icy terrain. It's very awkward and unwieldy. You hear about a lot of hand injuries, back injuries, falls, hoses decoupling and hitting people, and other accidents."*

Gregg's solution was an independent, removable handle that could be locked on to any hose or pipe, enabling the worker to move the hose while standing in a more natural position, almost as easily as carrying a suitcase. After hearing of yet another friend's son injuring himself in a similar manner, he launched his CAD software program, fired up his 3D printer, and started making a prototype.

According to Gregg, the first prototype promptly failed. But six months and seven prototypes later, aided by user feedback, he thought that he had developed something very useful. After filing for a patent, he took it to an international oil and gas show to see what potential customers thought.

*"There was enormous interest," he said. "No one had ever seen anything like it before."*

The next step for Gregg was moving from prototype to manufacturing. He knew that the actual product had to be lightweight, yet a lot more durable than the unreinforced plastic that came out of his 3D printer. He also knew that a metal like aluminum would not be suitable due to the threat of sparks, as well as potential uncomfortable handling in extreme hot and cold temperatures. Fortunately, after investigating potential partners in China and India, he found a materials and molding expert right in his own backyard... Tom Vermeeren of **Gemma Plastic Products** in Edmonton, Canada.

cont.



cont.

"Tom told me, 'You need to use long glass fiber reinforced nylon from **RTP Company**. You will never regret it,' and he was right," said Gregg. "I still can't believe how well this material fits my vision. It's extremely strong, has great electrical insulation characteristics and is practically impervious to heat and cold. The finished product is so strong it was tested to lift over 1100 pounds, and the durability is just extraordinary."

As to the latter point, Gregg relates the story of a customer who told him about accidentally running over the handle with his pumper truck, and then putting

the tool right back to work. "I really couldn't believe it, so I tried it myself," said Gregg. "I ran one over. Not a scratch."

Gregg and his company, **Handle-Tech Ltd.**, are now receiving a flood of orders and are signing on new partners for worldwide distribution. They are also investigating applications in other industries. Meanwhile, customers are demanding new sizes of handles, and he is expanding the line, with a range of products all made from the same compound: RTP 200 Series Nylon 66 with Very Long Glass Fiber from

**RTP Company**. "I was surprised that customers were asking for handles with relatively small outer diameters, even ones to fit hoses that are easier to move by hand," he explained. "But as one customer told me, the handles make it so much easier and so much safer, he never wants to see his people move any hoses or pipes by hand ever again."

**Handle-Tech Ltd.®  
Pipe Grip**

**Market:** Industrial  
**Compound:** RTP 200 Series  
Nylon 6/6 with Very Long  
Glass Fiber.



# Running out of PEI?

**RTP Company has alternatives!**

Visit us online at:  
[www.rtpcompany.com](http://www.rtpcompany.com)

Click on the "Education" tab  
& "Webinars" to learn more.



# Power PLA!



New biobased plastic parts are strong like conventional engineering plastics, and colorable too

**NOVUS GLASS INCORPORATED** began more than four decades ago, when Dr. Frank Werner grew frustrated with having to replace his windshield every time he found a small crack. He knew that there had to be a better way, and his work led to a windshield repair system now used by thousands of technicians in dozens of countries around the world.

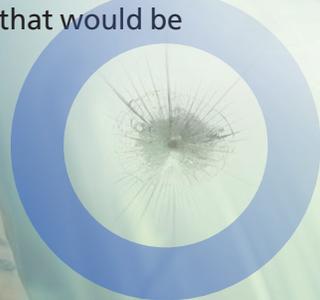
*"He recognized early on that replacing a windshield is not only expensive and inconvenient, it also has significant environmental impact,"* explained David Osland, Vice President of Marketing & Product Development.

*"Used windshields are extremely difficult to recycle and last forever in a landfill, and manufacturing new ones leaves a large carbon footprint."*

Osland notes that this sustainability ethic is a core component of the **NOVUS** corporate culture. For example, **NOVUS** has long worked to reclaim, regrind and recycle the disposable plastic nozzles its technicians use to inject repair resin. However, recently CEO Allan Skidmore sought to raise the bar even higher. He wanted to investigate the possibility of making these injector nozzles out of a biobased plastic that would be

more eco-friendly than the current petroleum based resin.

Meeting this challenge fell to Director of Manufacturing and Engineering Jon Thomas, whose first concern was to find a biobased material that met the company's stringent demands for strength and durability. *"This needed to be a structural part, and PLAs are not usually known for that type of functionality,"* he noted.



Fortunately, Thomas soon discovered that **RTP Company**, a long term **NOVUS** partner and the supplier of the glass fiber reinforced polypropylene currently used in the part, had recently developed and introduced a family of polylactic acid (PLA) bioplastic compounds with properties comparable to traditional engineering plastics. **NOVUS** and **RTP Company** analyzed the application, and soon settled on a new PLA compound incorporating glass fiber reinforcement with a nucleating agent that significantly bolsters its thermal performance.

In addition to being biobased from renewable feedstock, this PLA compound consumes less energy and produces less than half the carbon dioxide during manufacturing than does the polypropylene that it replaced.

Furthermore, the PLA material can biodegrade in an industrial composting facility at the end of its useful life.

*"We don't know of anyone else who's doing what they are doing with plastics," said Thomas. "RTP Company is definitely on the cutting edge."*

With the new biobased parts working comparably to the traditional plastic ones, the **NOVUS** team decided to market the change by using color.

*"Having worked with RTP Company many years, we knew that they were coloring experts," said Thomas. "We wanted to see if they could color this new material green to underscore the fact that the new injector was a 'greener' version."*

Within a couple of days, **RTP Company** delivered on this challenge, as well. *"The color engineers at RTP Company came out with a real nice green that represented at a glance what we're trying to say," said Thomas. "We were very pleased with the results. We've always looked at RTP Company as the people who really know compounding and plastics and color. They are very good at what they do."*

#### **NOVUS® Re-Usable Nozzle**

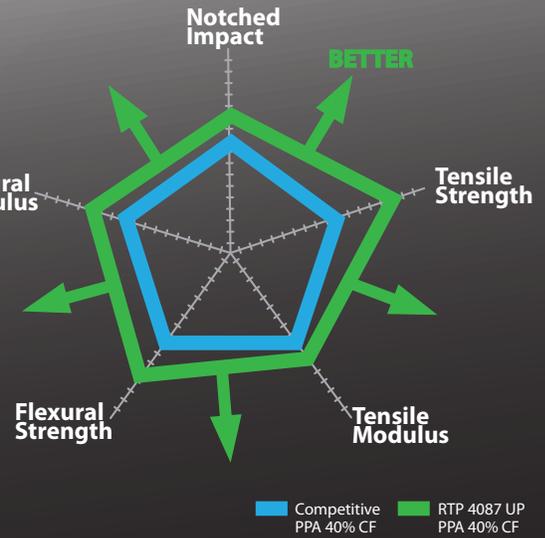
**Market:** Industrial  
**Compound:** PLA biobased compound with color.

*"We've always looked at RTP Company as the people who really know compounding and plastics and color. They are very good at what they do."*



# Closing the GAP!

Ultra Performance Structural Compounds Close the Gap between Plastics and Metals



RTP Company has introduced Ultra Performance structural compounds, a complete line of fiber reinforced high temperature thermoplastics that offer elevated mechanical & thermal performance combined with excellent chemical resistance, making them ideal for applications in demanding environments. These products are stronger and stiffer than historical thermoplastics without sacrificing impact strength. Targeted at

metal and thermoset replacement, Ultra Performance products can reduce costs through weight reduction, parts consolidation, and the process benefits of injection molding net shapes, thereby eliminating costly machining processes while improving overall part performance.

Ultra Performance structural compounds are available in PEEK, PPA, PPS and PEI high temperature resins. They employ short carbon fiber, short glass fiber, or very long

glass fiber in a broad range of loadings for superior strength and stiffness properties. These compounds can also include wear resistance and/or color properties, and are customizable to meet specific application requirements in a single, ready-to-process injection moldable material.

*"Ultra Performance structural compounds have a low specific gravity. Because they are injection moldable, they provide a lower cost, lightweight alternative to metals such as aluminum, steel, titanium, zinc and magnesium metals,"* explains Matt Torosian, Product Manager, High Temperature Materials – Structural Products. *"They are especially effective in demanding end use environments including applications in the energy, industrial, aerospace, automotive and healthcare markets."*

RTP Company continues to innovate and expand its portfolio of high temperature, fiber-reinforced thermoplastic compounds. For more information about Ultra Performance structural compounds, visit our website at

[www.rtpcompany.com](http://www.rtpcompany.com)



Illustration by Freepik.com