



# You inspire ... we materialize

## Quadrant history:

The first plastic materials for machining.

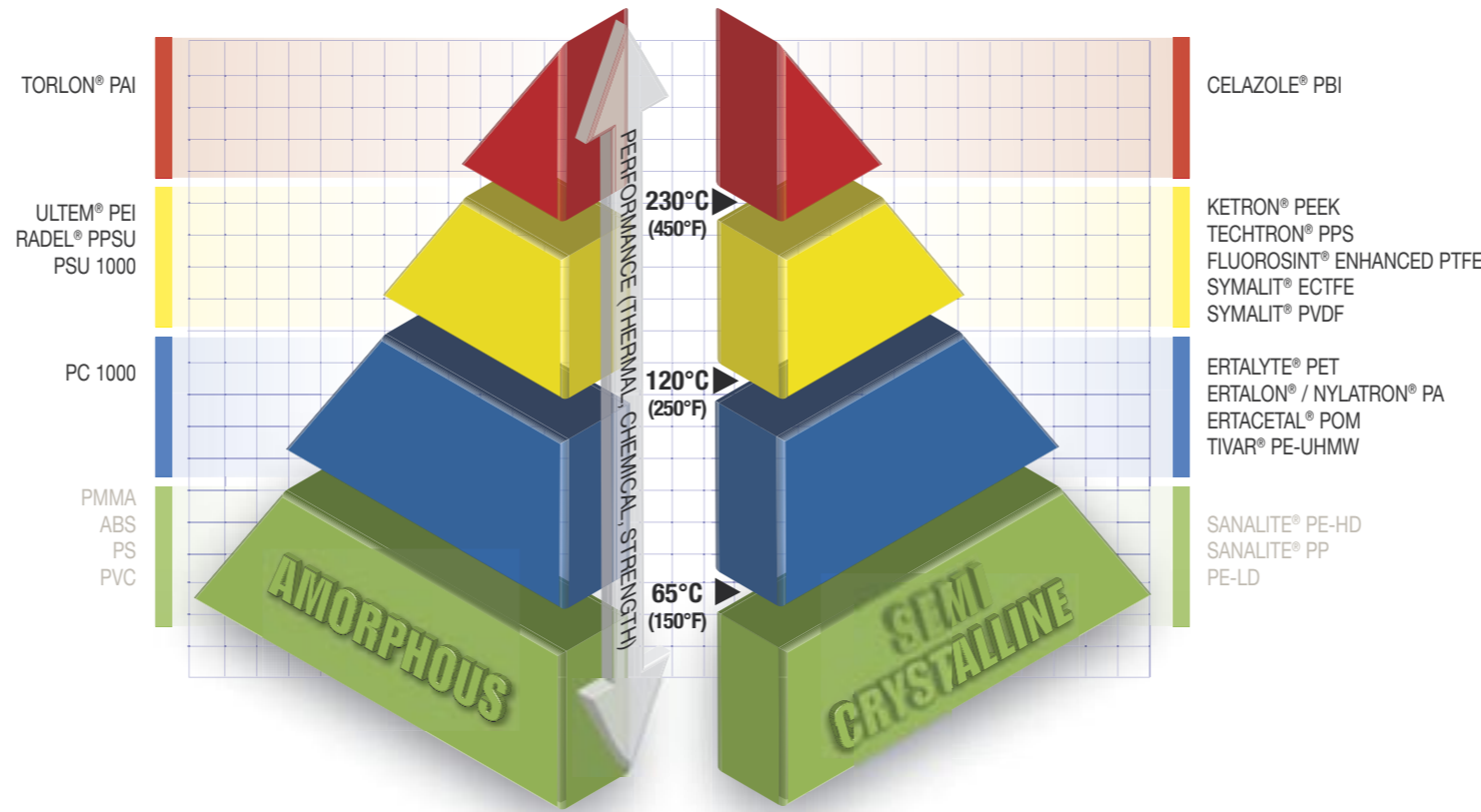
## Quadrant today:

Now the broadest range of materials for the most cost effective choices.

## Quadrant tomorrow:

New products for new needs, from the industry's only global product and application development team.

For over 60 years, the companies that formed Quadrant have been developing new materials to meet changing demands of our customers around the world. The innovative, collaborative spirit between our people and our customers has shaped our success and led to the industry's broadest range of engineering plastics for machining. Our investment in innovation will only increase in the years ahead, to support your requirements for higher levels of performance, productivity and value.



Technical support from concept through production.

**Application and production support when and where you need it.** Quadrant's technical support team works with engineers and machinists from material selection through machining, for optimum performance, productivity and cost.

Quadrant locations around the world offer an experienced technical team and the most comprehensive testing laboratories in the industry. You can count on reliable support at every phase of your project:

- Evaluation of performance needs and application environment
- Material selection – including selection software
- Material certifications
- Regulatory agency compliance
- Set-up and production recommendations from experienced machinists
- A wide range of material selection, design and fabrication guides and tools – all available on the Quadrant Engineering Plastic Products website, [www.quadrantplastics.com](http://www.quadrantplastics.com)

## Quality systems that ensure consistency.

**From full lot traceability to ISO certifications, Quadrant meets your requirements for consistent quality, performance and machinability.** As the first to line mark shapes materials, Quadrant set the standard for traceability on our products right back to the resin lot and production shift. We have also kept pace with industry standards and quality systems to comply with the needs of the industries that your company also serves. It is the inspiration behind our drive to provide the best levels of support for our materials in your applications. Count on Quadrant.

## Quadrant Engineering Plastic Products - Global Scope



## Applications in Major Industries



### Construction & Heavy Equipment

**Challenge:** Improve time between replacement of wear surfaces, reduce or eliminate costly lubrication systems. Wear pads used in heavy machinery must bear significant loads and minimal chatter with as little costly maintenance and lubrication as possible. Basic nylon materials provided quieter, lighter, more trouble-free service but needed regular replacement.

**Solution:** Solid lubricant filled NYLATRON® 703XL offers "stick-slip" free performance and significant improvement in wear life.

**New Technology:** Quadrant's unique RIM casting technology provides a cost effective and innovative option for the addition of new features like "cast in" wear indicators and inserts. Innovative materials delivered using innovative new processes.



### Industrial & Process Equipment

**Challenge:** Reduce maintenance, eliminate lubrication systems and improve toughness in industrial equipment. Trailers that deliver new automobiles to dealerships carry significant loads, endure hostile environments and still need to deliver their cargo without a scratch. This drive mechanism that raises/lowers the expensive cargo needed costly and frequent lubrication and regular repair.

**Solution:** Easily machined parts made from tough, internally lubricated NYLATRON® NSM.

**New Technology:** NYLATRON® 703XL excels in critical applications with the added benefit of "stick-slip" free performance, eliminating chatter and the subsequent loss of precise control.



### Food Processing & Packaging Equipment

**Challenge:** Eliminate costly maintenance downtime caused by wear prone mixing paddles. Metal paddles used to stir the abrasive ingredients in commercial candy production required frequent replacement. The aggressive cleaning agents also contributed to galling, corrosion and premature failure.

**Solution:** TIVAR® 1000 eliminated the abrasion problem and easily withstands the harsh chemicals used for cleaning.

**New Technology:** New TIVAR® H.O.T. can outlast virgin PE-UHMWV by up to 10 times in elevated temperature applications. Its unique combination of abrasion and chemical resistance and improved wear life at higher temperatures makes it ideal for many food equipment applications.



### Chemical Processing & Fluid Handling Equipment

**Challenge:** Higher output, minimized damage and downtime in compressors. In turbo-compressor equipment, a small increase in efficiency can deliver a major competitive advantage in output. Also during equipment upsets, internal metal parts can cause serious component damage that requires very costly repairs and downtime.

**Solution:** Replace aluminum in labyrinth seals with TORLON® PAI. This dimensionally stable, temperature resistant material yields major improvements in efficiency and output. And unlike metal, its ductility also prevents significant damage to other internal components should equipment upsets occur.

**New Technology:** A higher heat resistant TORLON® PAI extends temperature limits; new FLUOROSINT® HPV allows use in chlorine service.



### Medical, Life Science & Diagnostic Equipment

**Challenge:** Provide high strength, high temperature seals that can withstand repeated sterilization—and meet tough compliance standards. PTFE seals in an industry-leading piece of medical diagnostic equipment were unable to endure high shear forces, remain dimensionally stable and provide a tight seal. Repeated sterilization of the microfluidizer unit and the broad range of temperatures observed during its operation made choosing the ideal material a challenge.

**Solution:** The PTFE seals were replaced by more stable TIVAR® H.O.T. seals. This innovative manufacturer asked us to push the limits and has already jumped to the next challenge.

**New Technology:** More stable than TIVAR H.O.T., FLUOROSINT® 207 can better withstand elevated temperatures and has added strength to handle the high shear forces needed in the application.



### Semiconductor & Electronics Manufacturing Equipment

**Challenge:** Improve productivity; minimize downtime costs in wafer production. Semiconductor equipment builders continually push the materials technology envelope in highly aggressive chemical and temperature environments to improve silicon wafer output and reduce production costs.

**Solution:** TECHTRON® PPS retainer rings for silicon wafer polishing. Quadrant developed a unique material that has become today's standard. Techtron PPS outperforms traditional materials with its longer wear life for higher productivity and less downtime in the production of wafers.

**New Technology:** New SEMITRON® CMP LL5 and XL20 extend the life of retaining rings from 5 to 20 times over current materials.





## YOU INSPIRE:

Our best successes come from close working relationships with our customers – but not just on solving application problems with our materials' properties. The more we understand about what's important to your company, what it takes to compete, what determines your success and value with your customers, the better we can apply the right services and product technology for machined components for your equipment.

**Let's work together on your ideas and success factors, like these, where our materials can help you better compete in your industry.**

EFFICIENCY LOW SYSTEM COST PRODUCT LIFE RELIABILITY YIELD  
CONSISTENCY OUTPUT COMPONENT COST COMPETITIVENESS  
GLOBAL SOURCING PRODUCTIVITY MARKETING ADVANTAGE  
LOW MAINTENANCE LESS DOWNTIME REGULATORY COMPLIANCE

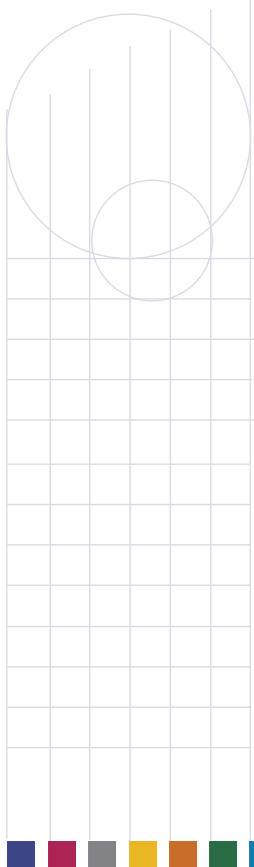


## WE MATERIALIZE:

Challenge us with your application requirements. Tell us also what it takes for you to compete and deliver value in your industry. That gives us the opportunity to work with your engineers to provide the best combination of technical support, material and finished part performance for your equipment – within your overall cost targets.

**Consider how these benefits of Quadrant materials can improve your application reliability, equipment efficiency and bottom line.**

LONG WEAR LIFE LOW INTERNAL STRESSES  
PREDICTABLE DIMENSIONS STATIC MANAGEMENT  
IONIC PURITY STAIN RESISTANCE LIGHTER WEIGHT  
SELF-LUBRICATING STRENGTH AT HIGH TEMPERATURE  
AGENCY CERTIFICATIONS SEALING INTEGRITY  
CHEMICAL AND HYDROLYSIS RESISTANCE



Learn more online at  
[www.quadrantplastics.com](http://www.quadrantplastics.com)

Quadrant has extensive product and machining resources available online. Our website is a portal to a wealth of technical data and the easiest way to engage our application specialists. Our team stands ready to help offer solutions to your toughest problems.

Distributed by:



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## Global business profile



**Global leader in engineering plastics for machining.**



QUADRANT

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