Elastomer and Thermoplastic Components and Assemblies For Motorized Vehicles
Committed To Innovation While Providing Solutions

Providing Industry Solutions

At Minnesota Rubber and Plastics our goal is to provide solutions (SRS) that are not out of the ordinary to any contact we cannot resolve the everyday. Our core business is to provide solutions to the transportation industries. We fully understand that this means our materials provide the necessary components to solve the many unique challenges you face in your manufacturing and production processes.

Materials R&D

We have always sought ways to develop unique enhancements that are not always available in the market. We understand that our expertise provides sealing solutions in unique applications to help our customers solve critical issues so you can avoid production delays and increased costs.

Our technical design and engineering services provide timely answers to unique problems and secondary press operations are second to none. Finally, prior to committing to production, our development and production facilities operate under corporate wide quality and innovation. Our experienced design engineers, materials chemists and technicians provide the resources to design, formulate, develop and manufacture quality products cost-effectively.

Through our focus on quality and innovation, we are here to make your application a reality. By working directly with you and exploring new design and material technologies, you can be certain our recommendations and solutions will meet your expectations.

Committed To Quality

At Minnesota Rubber and Plastics, design, development and research and development services are provided by our broad range of thermoset and thermoset-plastic compounds and molding processes.

Components And Assemblies

For years, major transportation OEM's have relied on Minnesota Rubber and Plastics for custom components and assemblies that require the ultimate in design and durability. Our commitment to your product requirements will meet your expectations.

For more information about our custom components and assemblies, visit our website or contact us today. We are here to serve your needs.
I

for products that function without failure in demanding
also requires component design and materials knowledge
experience with end market applications. It
industries require a deep knowledge and
We know the demands of the transportation
assemblies supplying the sealing
thermoplastic components and
broad range of high performance
Minnesota Rubber and Plastics
is one of the most experienced
Aurum® , Torlon®  or Ultem®  are
elastomers, fluoroelastomers
You solve critical issues so you can
materials groups can help
operating environments.
sealed against wear,
engineered to meet demanding
Manufacturers R&D
We have a value chain where many applications
necessities of the transportation
costs of the transportation
new markets as they look to control costs.
Fifty years ago we started offering custom molded components and assemblies that improve the reliability and
warranty performance of their products.
For Demanding Applications
For the future, engine manufacturers are looking for effective and efficient solutions
that can lower fuel consumption, reduce engine noise, and improve overall performance
while being more environmentally friendly. This is where Aurora’s fluid dynamics and
powertrain application expertise come into play. Our unique design and manufacturing
flexibility allows us to provide a broad spectrum of components and assemblies
Based in Austin, Minnesota, Aurora Fluid Power is internationally recognized as a leader in fluid systems
and filtration.


durability is critical wear application
we developed a PEEK test cell, to
transmissions. However, until
to replace metal components in many
This semi-crystalline polymer is used

technologies with high performance plastics.

tune our CAD/CAM and FEA systems
design engineering services provide timely answers to
doing business in manufacturing environments.


Technology Based
Minnesota Rubber and Plastics’ broad range of high performance
products is made possible through a technology based development process.
Inherent “Innovate” in our imagination, creativity, manufacturing processes, and
understanding of the industry. That is the foundation of our success.

Our Vision is to be the world’s leading manufacturer of precision
components and assemblies that improve the reliability of our customers’
end products and processes. We leverage our experience, resources, and
global manufacturing capabilities to provide the highest performance
products at the most cost effective price. Our goal is to exceed our customers’
expectations.

Components And Assemblies
For Demanding Applications
For years, major manufacturers of diesel engines rely on Minnesota Rubber and Plastics
for custom in-cab components and assemblies that improve the durability and
efficiency of diesel engines. Minnesota Rubber and Plastics is uniquely positioned
in the market to provide the highest quality products at the lowest possible cost.

For your most demanding military applications, Aurora Fluid Power is the
industry’s leader in hydraulic systems. From the design of custom
components to the assembly of complete systems, we offer a level of
deliveries on time and within budget.

\[\text{提供更多内容...}\]
With periods.

For agriculture and construction equipment, Minnesota Rubber and Plastics offers a broad range of high performance plastic solutions. With passenger cars our high performance plastic capabilities are one of the most experienced. We also leverage our experience in static and dynamic applications, increased safety, and assemblies supplying the sealing and insulation qualities for which Minnesota Rubber and Plastics is known. For both OEM’s, tier one and tier two customer’s with the problem solving expertise provides sealing solutions directly with you and exploring new design and materials technologies, you can rely on Minnesota Rubber and Plastics to meet your expectations.

Components And Assemblies

For Demanding Applications

For years, major transportation OEM’s have relied on Minnesota Rubber and Plastics for custom molded components and assemblies that improve the reliability and efficiency of their products. From prototyping to final production, our state-of-the-art facilities are designed for streamlined production, thereby reducing development time and costs. We leverage our experience in rubber, elastomer, thermoplastic and metal substrates to offer customers an array of cost-saving solutions and quality and innovation. Our experienced design engineers, materials chemists and quality control professionals work directly with you and exploring new design and materials technologies, you can rely on Minnesota Rubber and Plastics to meet your expectations.
Our Materials, Designs And Processes Options Help Make The World Go ‘Round

Minnesota Rubber and Plastics is one of the most experienced manufacturers of elastomer and thermoplastic components and assemblies supplying quality rubber and plastic products to many of the largest companies around the world. Established in 1945, we are one of the most experienced manufacturers of elastomer and thermoplastic components and assemblies for both static and dynamic applications. We are recognized in the global transportation industries since 1945. For both transit and heavy vehicles, our expertise provides sealing solutions for reduced weight, noise and operating temperatures. Our facilities also operate under a corporate wide commitment to quality by our global warehousing and logistics operations.

Today, most companies utilize global sourcing as a key component of their strategic business plan to develop new product lines at a reduced cost. To ensure your requirements are met across our North America, Europe and Asia production facilities operate under corporate wide quality groups help to meet your expectations.

Technology Based
Minnesota Rubber and Plastics brings a broad range of high performance elastomer and thermoplastic products to the transportation design environment. High performance "sales tools" in the design phase are now being used to provide new product development and assistance efficiencies by all companies. From providing guidance in cloud computing to our core set of on-site design engineering services, we are able to deliver effective design solutions. Our CAD/CAM and FEA systems allow us to work with elastomers and thermoplastics to develop and secondary press operations are second to none. Finally, prior to committing to production, our prototyping services provide production quality sample parts for final testing.

Materials & R&D
For years, major transportation OEM’s have relied on Minnesota Rubber and Plastics to provide them with the problem solving solutions they need from their suppliers. Our research and development teams provide the resources to design, formulate, develop and manufacture quality samples parts for final testing.

Components And Assemblies For Demanding Applications
For years, major transportation OEM’s have relied on Minnesota Rubber and Plastics to provide them with the problem solving solutions they need from their suppliers. Our research and development teams provide the resources to design, formulate, develop and manufacture quality samples parts for final testing.

Endurance and Reliability
Our experts are known for solving the most difficult sealing and assembly problems with a broad range of elastomeric and thermoplastic compounds and computerized processes.

Providing Industry Solutions
At Minnesota Rubber and Plastics our goal is to provide OEM’s, Tier 1’s and Tier 2’s with the problem solving solutions they need from their suppliers. Our research and development teams provide the resources to design, formulate, develop and manufacture quality samples parts for final testing. Where your demand and through-puts design challenge us to not only exceed your expectations. By working directly with you and exploring new design and material technologies, you can be certain our recommendations and prototypes will meet your expectations.
Solving Design Problems With Materials Expertise
High Performance Plastics

End Use Applications Include:
- Aerospace
- Automobiles
- Medical Devices
- Seals
- Valves
- Pumps
- Gears
- Transmissions
- Bushings
- Thrust Plates
- Rotory Seal Rings
- Poppets
- Fuel Systems
- Transmissions
- Steering Systems
- Suspension Systems
- Valves
- Pumps
- Gears
- Thrust Plates
- Rotory Seal Rings
- Poppets

Application Environments Include:
- Oxygen
- Water
- Steam
- Chemical
- Corrosive
- Magnetic
- Mechanical
- Electrical
- Wear
- Vibration

Superior Performance:
In order to perform in today’s demanding requirements, a high performance polymer could be required to meet or exceed normal design solutions for:
- Thermal resistance
- Electrical properties
- Dimensional stability
- Moisture resistance
- Superior moduli
- High impact strength
- High bending strength
- High creep resistance
- High chemical resistance
- High gas diffusion resistance

From these materials to other thermoplastic resins, high performance polymers plus design opportunities, and their applications, with reliable designs and end-use systems.

High Temperature Resistant Thermoplastics

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Polymer</th>
<th>Use Temp (°F)</th>
<th>Use Temp (°F)</th>
<th>Transition</th>
<th>Glass</th>
<th>K Factor (°F)</th>
<th>K Factor (°F)</th>
<th>Density (g/cc)</th>
<th>Density (g/cc)</th>
<th>mol wt</th>
<th>mol wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>Polycarbonate</td>
<td>660-690</td>
<td>660-690</td>
<td>450-525</td>
<td>500-575</td>
<td>1.02</td>
<td>1.02</td>
<td>70.0</td>
<td>70.0</td>
<td>30,000</td>
<td>30,000</td>
</tr>
<tr>
<td>PBT</td>
<td>Polybutylene Terephthalate</td>
<td>550-650</td>
<td>570-650</td>
<td>400-480</td>
<td>470-530</td>
<td>1.24</td>
<td>1.24</td>
<td>75.0</td>
<td>75.0</td>
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</tr>
<tr>
<td>PAR</td>
<td>Polyarylate</td>
<td>475-575</td>
<td>490-575</td>
<td>325-400</td>
<td>380-480</td>
<td>1.12</td>
<td>1.12</td>
<td>70.0</td>
<td>70.0</td>
<td>15,000</td>
<td>15,000</td>
</tr>
<tr>
<td>PA-4,6</td>
<td>Polyamide-4,6</td>
<td>400-425</td>
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<td>95.0</td>
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<td>20,000</td>
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</tr>
<tr>
<td>PEI</td>
<td>Polyetherimide</td>
<td>400-425</td>
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<td>20,000</td>
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<tr>
<td>PTFE</td>
<td>Polyvinylidene Fluoride</td>
<td>400-425</td>
<td>400-425</td>
<td>300-340</td>
<td>300-340</td>
<td>1.00</td>
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<td>20,000</td>
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</tr>
<tr>
<td>ABS</td>
<td>Acrylonitrile Butadiene Styrene</td>
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</table>

Solving Design Problems With Materials Expertise
High Performance Plastics

The performance range of both amorphous and semi-crystalline polymers varies in relationship to their cost.
**End Use Applications Include:**
- polycarbonate (PC)
- PBT
- polyarylate (PAR)
- polyamide imide (Torlon®)
- polyamide-6/6,6 (PA-6/6,6)
- polyamide-4,6 (PA-4,6)
- LDPE
- liquid crystal polymers
- HDPE
- fluoropolymers
- ABS
- PPC
- PPA polyphthalamide (Amodel)
- polypropylene (PP)
- polyoxymethylene (also polyacetal) (POM)
- PEEK
- ultrahigh molecular weight polyethylene (PE-UHMW)
- Acronym Polymer
- polymethyl methacrylate (PMMA)
- polyimide (Aurum)
- PET
- polyethylene terephthalate (PET)
- polyethersulfone (PES)
- PVDF
- Polyetherimide (PEI)
- Polyether sulfone (PSF)
- Polyetherketone (PEK)
- Polyetheretherketone (PEEK)
- PAI polyamide imide
- PC
- PVC
- LDPE
- PPO
- POM
- PPA
- PVDF
- paraffin wax
- Teflon

**Superior Performance:**
- In order to provide you with a material and design solution for your applications, with valuable design engineers, and their performance polymers provide their thermal properties, high performance polymers provide you with a material and design solution for any design environment.

**Application Environments Include:**
- Valves
- Pumps
- Compressors
- Fuel Systems
- Transmissions
- Steering Systems
- Suspension Systems
- Compressors
- Power Transmission Systems
- Engineered Parts

**Superior Capabilities:**
- We will take your design and material capabilities by providing access to our extensive library of materials and temperature performance. Our capabilities range from their mechanical to chemical resistance, dimensional, and assembly and packaging. We have the materials expertise to provide the materials and assembly of close tolerances, temperature, chemical resistance, mechanical and thermal properties, and assembly and packaging.

**High Temperature Resistant Thermoplastics**

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<th>Material</th>
<th>Transition Temp (°F)</th>
<th>Glass Temp (°F)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>316L/316</td>
<td>1574</td>
<td>1799</td>
<td>1574</td>
<td>1799</td>
</tr>
<tr>
<td>316/317</td>
<td>1678</td>
<td>1901</td>
<td>1678</td>
<td>1901</td>
</tr>
<tr>
<td>304/304</td>
<td>1574</td>
<td>1799</td>
<td>1574</td>
<td>1799</td>
</tr>
<tr>
<td>446/446</td>
<td>1734</td>
<td>2001</td>
<td>1734</td>
<td>2001</td>
</tr>
<tr>
<td>420/420</td>
<td>1459</td>
<td>1701</td>
<td>1459</td>
<td>1701</td>
</tr>
<tr>
<td>410/410</td>
<td>1399</td>
<td>1681</td>
<td>1399</td>
<td>1681</td>
</tr>
<tr>
<td>441/441</td>
<td>1750</td>
<td>2040</td>
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For more information or to request a quote, please contact us at:

**U.S.:** 952-927-1400

**Asia:** +86-512 6273 2700

**Europe:** +33 (0) 2 32 22 24 26

**Singapore:** 658065

**China:** +86-512 6273 2700

**Japan:** 011-65-6725

**France:** 01 30 70 06 97

**India:** 011-65-6725

**U.K.:** 011-65-6725

**Japan:** 011-65-6725

**Canada:** 514-273-0444

**Minnesota Rubber and Plastics**

1100 Xenium Lane North

Minneapolis, MN 55441-7000

www.mnrubber.com

**Elastomer and Thermoplastic Components and Assemblies For Motorized Vehicles**

Engineered to improve performance.