Customized innovation for flexible solutions

With the acquisition of API Applicazioni Plastiche Industriali S.p.A. in Mussoleone, Italy, Trinseo expanded the products portfolio by innovative soft-touch polymers. In addition to our high-quality rigid plastics, we now manufacture and provide also a broad range of customized TPE and TPU products as well as EVA-based compounds.

This soft-touch plastics portfolio is complementary to Trinseo’s rigid polymers and synthetic rubber, creating synergy benefits for our customers. It creates a customer-centered synergy that is based on customized innovation. You can benefit from the successful long-term experience in powering applications with soft-touch polymer materials and deep technological expertise.

We invite you to learn more about our flexible solutions for a broad range of high-quality automotive components used in areas such as interior, exterior, under the hood, and chassis.
Our TPE compounds are designed to comply with the high standards imposed by global premium car manufacturers for specific applications.

Low emissions, odor, fogging, and high UV and scratch resistance are crucial properties of MEGOL™ TPS-SEBS Compounds for interior applications. In addition, MEGOL™ TPS-SEBS and TIVILON™ TPV grades offer excellent weathering and scratch resistance for exterior applications. Heat and oil resistance are key features of our TIVILON™ TPV and APIOLON™ S2 TPU grades for under the hood parts.

Most of our MEGOL™ TPS SEBS and APIOLON™ S2 TPU grades can be used in combination with hard substrates, such as PP to ABS, ASA, PC, PA, POM, and most other conventional hard components.

Innovative TPE Solutions in Automotive

With its focus on the automotive sector, API is committed to providing innovative solutions in response to the increasing need for lightweight, energy-saving cost-effective products.
Advantages and Properties of our Thermoplastic Elastomers

Durability
→ Good resistance in the range -40°C to +125°C
→ Excellent aging resistance: heat UV, ozone, weather
→ Long term dimensional stability due to good compression set and tensile strength

Weight reduction
→ Low specific gravity
→ Lower weight than thermoset rubber

Design flexibility
→ Suitable for co-injection and co-extrusion with other substrates for multicomponent parts

Shorter cycle time
→ Shorter processing time compared to rubber

Optimized appearance
→ Colorability in all color shades, wide gloss range, and suitability for different graining

Recyclability
→ Scrap can be recycled

Bio-based
→ Alternative grades based on renewable resources are available for specific applications

Automotive Construction Areas

Interior

Exterior

Under the hood

Chassis

MEGOL™
TPS-SEBS Compounds

TIVILON™
TPV Compounds

APIGO™
TPO Compounds

APIZERO™
EVA-based Compounds

APILON™ 52
TPU Polymers and Compounds

APIFLEX™
PVC-based Compounds

NEOGOL™
OBC Compounds
Vehicle Interior

Low emissions, low odor, UV resistance, scratch resistance, vibration damping.

MEGOL™
TPS-SEBS Compounds

TIVILON™
TPV Compounds

APIGO™
TPO Compounds

APIZERO™
EVA-based Compounds

APILON™ 52
TPU Polymers and Compounds

Door sills

Floor mats

Pedals

Hand brakes

Seat components

Airbag covers

Gear knobs

Thumb wheels
Vehicle Interior

Dark and light colors, easy dyeing, low emissions, low odor, high UV resistance, high scratch resistance, and vibration-damping for applications in automotive interior parts, which can be processed by conventional thermoplastic equipment for injection and extrusion. Soft/hard combinations allow lower-weight solutions while keeping optimized haptic and stiffness. Special grades are available for sensitive applications in safety systems.

Below belt line

<table>
<thead>
<tr>
<th>Application</th>
<th>Hardness</th>
<th>Tensile</th>
<th>Elongation</th>
<th>Odor VDA 270-40°C and 80°C</th>
<th>UV resistance PV1303</th>
<th>MFI</th>
<th>Peeling VBO20/19</th>
<th>Abrasion</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEGOL™ Safety bellows</td>
<td>7 Sh/A</td>
<td>9 Mpa</td>
<td>650%</td>
<td>2.5</td>
<td>4 cycles</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEGOL™ Loudspeakers</td>
<td>10 Sh/A</td>
<td>9 Mpa</td>
<td>650%</td>
<td>2.5</td>
<td>4 cycles</td>
<td>220g/10’ 3B</td>
<td>3B</td>
<td></td>
</tr>
<tr>
<td>APLON S2™ Gear knobs</td>
<td>45 Sh/A</td>
<td>33 Mpa</td>
<td>530%</td>
<td>2.5</td>
<td>4 cycles</td>
<td>C/D</td>
<td>28</td>
<td></td>
</tr>
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</table>

Near to glass

<table>
<thead>
<tr>
<th>Application</th>
<th>Hardness</th>
<th>Tensile</th>
<th>Elongation</th>
<th>Odor VDA 270 80°C</th>
<th>C-set 70°C</th>
<th>UV test PV1303</th>
<th>Izod -40°C</th>
<th>Scratch cockmeter PV5906</th>
</tr>
</thead>
<tbody>
<tr>
<td>APIGO™ Airbag covers</td>
<td>45 Sh/A</td>
<td>12 Mpa</td>
<td>500%</td>
<td>2.5</td>
<td>5 cycles</td>
<td>NB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEGOL™ Dashboard and upper door panel</td>
<td>85 Sh/A</td>
<td>13 Mpa</td>
<td>750%</td>
<td>2.5</td>
<td>5 cycles</td>
<td>1 (no change)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEGOL™ Gaskets and profiles</td>
<td>75 Sh/A</td>
<td>8 Mpa</td>
<td>600%</td>
<td>2.5</td>
<td>42</td>
<td>5 cycles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Interior Applications

Below belt line

- Entry panels: MEGOL™
- Floor mats: MEGOL™
- Central consoles: APIGO™ / MEGOL™
- Armcovers: MEGOL™
- Seat components: MEGOL™
- Hinges: MEGOL™
- Hand brakes: MEGOL™

Near to glass

- Airbag covers: APIGO™
- Thumb wheels: MEGOL™
- Steering wheel column covers: MEGOL™
- Dashboard and upper door panels: MEGOL™
- Luggage cover systems: MEGOL™
- Sun protection systems: MEGOL™
- Gaskets and profiles: TIVILON™ / MEGOL™

Ceiling

- Glasses compartments: APIGO™ / MEGOL™
- Sun roof profiles: MEGOL™ / TIVILON™
- Headliners: APZERO™
- Handles: MEGOL™
Vehicle Exterior

Performance at temperature, durability, abrasion and scratch resistance, weathering resistance, high impact resistance.

MEGOL™
TPS-SEBS Compounds

TIVILON™
TPV Compounds
Vehicle Exterior

Weathering resistant grades with high impact and scratch resistance, which are widely applied in the automotive exterior, for roof and glass sealing applications as well as for applications below the belt line like mud flaps, wheel arches, side bars. They are suitable both for injection and for extrusion processing.

Row

<table>
<thead>
<tr>
<th>Application</th>
<th>Hardness</th>
<th>Tensile</th>
<th>Elongation</th>
<th>C-set 70°C</th>
<th>Weathering resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEGOL™ TIVILON™ Roof trims</td>
<td>85 Sh/A</td>
<td>10 Mpa</td>
<td>550%</td>
<td>53</td>
<td>4500 MJ/m² de &lt; 1.1</td>
</tr>
</tbody>
</table>

Glazing and sealing

<table>
<thead>
<tr>
<th>Application</th>
<th>Hardness</th>
<th>Tensile</th>
<th>Elongation</th>
<th>MFI</th>
<th>Peeling VDE0290</th>
<th>Weathering resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEGOL™ Windshield lower panels</td>
<td>90 Sh/A</td>
<td>7.5 Mpa</td>
<td>450%</td>
<td>150</td>
<td>0</td>
<td>4500 MJ/m² de &lt; 1.1</td>
</tr>
<tr>
<td>MEGOL™ Glazing</td>
<td>70 Sh/A</td>
<td>15 Mpa</td>
<td>700%</td>
<td>40</td>
<td>C/D</td>
<td>2500 MJ/m² de &lt; 3.0</td>
</tr>
</tbody>
</table>

Below belt line

<table>
<thead>
<tr>
<th>Application</th>
<th>Hardness</th>
<th>Tensile</th>
<th>Elongation</th>
<th>Izod -20°C</th>
<th>Scratch FIHM 80 162-1</th>
<th>Weathering resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEGOL™ Wheel arches</td>
<td>90 Sh/A</td>
<td>13 Mpa</td>
<td>700%</td>
<td>NB</td>
<td>1 (7%)</td>
<td>3000 MJ/m² de &lt; 1.0</td>
</tr>
<tr>
<td>APIGO™ MEGOL™ Mud flaps</td>
<td>93 Sh/A</td>
<td>9 Mpa</td>
<td>500%</td>
<td>NB</td>
<td>1 (7%)</td>
<td>3000 MJ/m² de &lt; 1.0</td>
</tr>
</tbody>
</table>

Exterior Applications

Row

- Roof trims MEGOL™
- Roof trims TIVILON™ MEGOL™
- Roof trims MEGOL™
- Spoilers MEGOL™

Glazing and sealing

- Pillar sealings MEGOL™
- Windshield lower panels MEGOL™
- Windshield side gaskets MEGOL™ TIVILON™
- Glazing seals MEGOL™
- Wipers MEGOL™
- Quarter glass sealing MEGOL™

Below belt line

- Lighting soft components MEGOL™
- Wheel arches MEGOL™
- Mud flaps MEGOL™ APIGO™
- Side bars APIGO™
- Spoilers MEGOL™
- Door handles MEGOL™
Under the Hood

Heat and oil resistance, excellent compression set and high elasticity.

- Ventilation valves
- Bellows
- Air baffles
- Fasteners
- Inner battery
- Batteries
- Cooling system
- Cable sheathings

MEGOL™
TPS-SEBS Compounds

TIVILON™
TPV Compounds
Heat and oil resistant grades with excellent compression set and elasticity are used under the hood for seals, dampers, boots, air ducts, air baffles, tubes and hoses, fasteners, and others. They are suitable for injection and blow molding, and for extrusion processing.

### Under the Hood

**Application**

<table>
<thead>
<tr>
<th>Application</th>
<th>Hardness</th>
<th>Tensile</th>
<th>Elongation</th>
<th>C-set 100°C</th>
<th>MFI</th>
<th>Max service T°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEGOL™ Ventilation valves</td>
<td>30 Sh/A</td>
<td>3 Mpa</td>
<td>450%</td>
<td>35%</td>
<td>10</td>
<td>130</td>
</tr>
<tr>
<td>TIVILON™</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEGOL™ Air baffles</td>
<td>70 Sh/A</td>
<td>8 Mpa</td>
<td>800%</td>
<td>48%</td>
<td>70</td>
<td>130</td>
</tr>
<tr>
<td>TIVILON™</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MEGOL™ Bellows</td>
<td>50 Sh/A</td>
<td>10 Mpa</td>
<td>650%</td>
<td>38%</td>
<td>5</td>
<td>130</td>
</tr>
<tr>
<td>TIVILON™</td>
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</tr>
<tr>
<td>APLILON™ Cable sheathing</td>
<td>85 Sh/A</td>
<td>45 Mpa</td>
<td>940%</td>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEGOL™ Grommets</td>
<td>60 Sh/A</td>
<td>7.5 Mpa</td>
<td>600%</td>
<td>41%</td>
<td>8</td>
<td>130</td>
</tr>
<tr>
<td>TIVILON™</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Engine Compartment Applications**

- **Ventilation valves**
  - MEGOL™
  - TIVILON™

- **Air baffles**
  - MEGOL™

- **Cooling systems**
  - TIVILON™

- **Bellows**
  - MEGOL™
  - TIVILON™

- **Fasteners**
  - MEGOL™
Vehicle Chassis

Sealing behavior, aging resistance, paint indifference, waterproof qualities, hydrolysis resistance.
Excellent sealing behavior, paint indifference and aging resistance for both foamed and compact solutions in car body plugs and assembly pins. Waterproof qualities and long term hydrolysis resistance are the features of the grades used in water channeling and cable protection applications. They are suitable for injection, extrusion, and specific processing technologies.

### Chassis Applications

<table>
<thead>
<tr>
<th>Application</th>
<th>Body plugs</th>
<th>Tubes and hoses</th>
<th>Water channeling</th>
<th>Assembling pins</th>
<th>Pressure release valves</th>
</tr>
</thead>
<tbody>
<tr>
<td>APIZERO™ Foamed sealing plugs</td>
<td>APIZERO™</td>
<td>MEGOL™</td>
<td>TIVILON™</td>
<td>MEGOL™</td>
<td>TIVILON™</td>
</tr>
<tr>
<td>Adhesion on metal and paint-ted substrates, expandable and crosslinked, paint indifference sealing properties, wide temperature service range</td>
<td>200</td>
<td>125</td>
<td>125</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>Window water drainage</td>
<td>40 Sh/D</td>
<td>14 Mpa</td>
<td>600%</td>
<td>16</td>
<td>125</td>
</tr>
<tr>
<td>High flowability, thermal resistant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEGOL™ Assembling pins</td>
<td>35 Sh/A</td>
<td>4 Mpa</td>
<td>750%</td>
<td>8/Y/D</td>
<td>125</td>
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<tr>
<td>Adhesion on PA, good compression set, sealing properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door hinges</td>
<td>85 Sh/A</td>
<td>45 Mpa</td>
<td>550%</td>
<td>C/D</td>
<td>120</td>
</tr>
<tr>
<td>Impact resistance, scratch and abrasion resistance, oil and grease resistance, high tensile strength, adhesion on PA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel arch cover seals</td>
<td>60 Sh/A</td>
<td>7,5 Mpa</td>
<td>750%</td>
<td>0</td>
<td>120</td>
</tr>
<tr>
<td>Very good sealing behavior, aging resistance, waterproof properties, adhesion on PP</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
About Trinseo

Trinseo (NYSE: TSE) is a global materials solutions provider and manufacturer of plastics, latex binders, and synthetic rubber.

We are focused on delivering innovative and sustainable solutions to help our customers create products that touch lives every day — products that are intrinsic to how we live our lives — across a wide range of end-markets, including automotive, appliances, consumer electronics, medical devices, electrical, building and construction, textile, paper and board, footwear and tires.

As a leading global partner for the automotive industry, Trinseo is your one-stop partner for both rigid and soft-touch polymers to support the development and manufacturing of future-oriented automotive applications. Customers can benefit from our expertise in customizing our products focused on specific needs.

2,200
EMPLOYEES

4.4 B
REVENUE IN 2017

16
MANUFACTURING SITES

11
R&D FACILITIES
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Product Stewardship
Trinseo and its affiliated companies have a fundamental concern for all who make, distribute, and use their products and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the safety, health, and environmental information on our products so that appropriate steps may be taken to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Trinseo products – from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

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For more information on products, innovations, expertise, and other services available from Trinseo, visit www.trinseo.com, or contact us as indicated below.

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