

Ryton®



SOLVAY

asking more from chemistry®

Ryton® PPS
Polyphenylene Sulfide

**SPECIALTY
POLYMERS**

Ryton® PPS

Ryton® polyphenylene sulfide (PPS) is a semi-crystalline, high-heat polymer that offers exceptional dimensional stability for precision-molded components needing to withstand prolonged, high-temperature service. It is inherently flame retardant and offers chemical resistance comparable to PEEK and fluoropolymers.

For more than 40 years, Ryton® PPS has delivered reliable performance for components used in automotive, appliances, E/E and industrial applications.

Key features

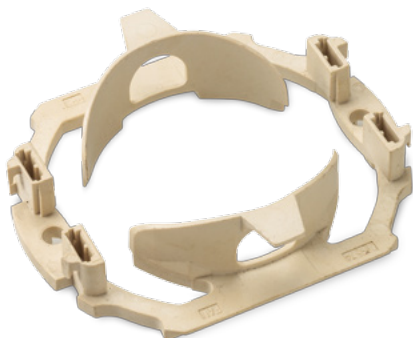
- High heat resistance
- Dimensional stability
- Chemical resistance

Cost-Effective Metal Replacement

Now more than ever, OEMs and their suppliers are replacing metal with Ryton® PPS to reduce weight and lower manufacturing costs through parts consolidation and the elimination of secondary operations. Ease of processing and shorter cycle times also contribute to improved economics.

Global Materials Technology Leader

Solvay is a world leader in specialty polymers, and we work closely with our customers to develop innovative material solutions that help them stay competitive in today's marketplace. We routinely introduce new technologies, such as low-permeability Ryton® PPS grades for extrusion and blow molding applications like automotive tubing and air ducts, as well as chemical pipes and flexible pipes for offshore oil and gas recovery.



Precision Performance

Automotive

Ryton® PPS is widely used in components required to withstand high temperatures, mechanical stress and corrosive automotive fluids, such as those used in under-the-hood applications, brake systems, and E/E devices.

By replacing metal, Ryton® PPS eliminates corrosion due to salts and automotive fluids, reduces fuel consumption, lowers costs and improves system integration.

Other benefits include:

- Precision mold to tight tolerances
- Insert molding capabilities
- Eliminates corrosion
- Reduces fuel consumption
- Parts consolidation
- Improved system integration

Electrical/Electronic

Ryton® PPS helps design engineers meet precise performance requirements for connectors, sockets, relays and switches, bobbins and coils, electronic packaging, and encapsulated devices. Key features include:

- Excellent flow for thin-walled parts
- Precision mold to tight tolerances
- Inherent UL 94 V-0
- High stiffness
- Ease of processing
- Compatible with IR soldering

Appliances

Ryton® PPS is used to replace metals, thermosets, and lower performing plastics in motors and controls, pumps, fans and blowers, and E/E components used in HVAC and other demanding applications. In addition to thermal and dimensional stability, these materials offer:

- Improved reliability
- Resistance to dilute acids
- Recyclable scrap for improved economics vs. thermosets
- Parts consolidation
- Streamlined manufacturing

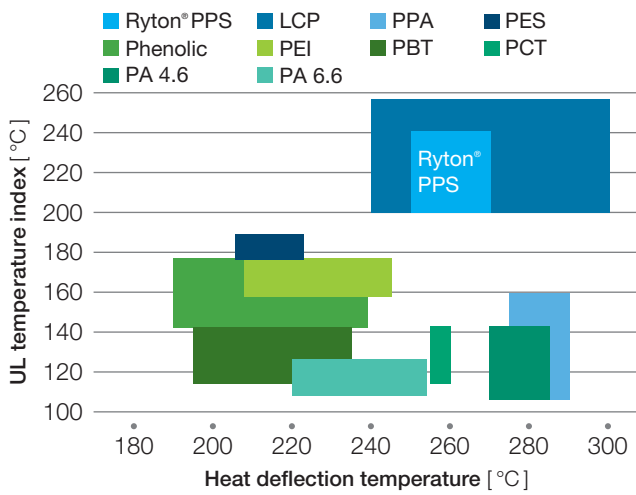
Distinctive Properties

High Heat Resistance

Ryton® PPS compounds provide excellent long-term thermal performance, retaining their high mechanical properties at elevated temperatures over time. This makes Ryton® PPS an excellent candidate for metal replacement in applications needing to withstand prolonged exposure to high end-use temperatures. As shown in Figure 1, UL thermal indices for Ryton® PPS go up to 240 °C (464 °F).

Ryton® PPS has a Heat Deflection Temperature (HDT) of 260 °C (500 °F), which allows it to withstand high-temperature thermal cycling as well as the high heat generated during IR soldering and other methods of integrated circuit assembly.

Figure 1: Thermal properties comparison



Precision Molding & Dimensional Stability

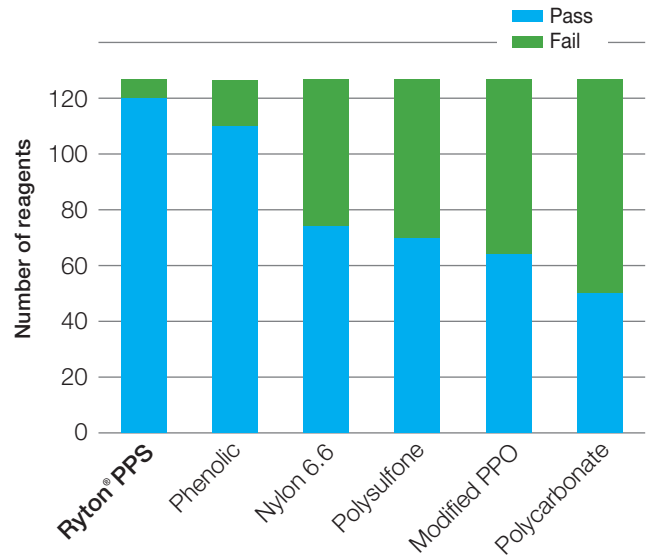
Ryton® PPS can be precision molded to tight tolerances and retain exacting dimensions when exposed to high temperatures and harsh end-use environments. For example, a 25-mm diameter hole can be molded into a part with a ±0.01 mm/mm tolerance.

Ryton® PPS also exhibits high tensile strength and high flexural modulus. Compared to most other engineering plastics, it has a significantly lower tendency to warp and creep.

Chemical Resistance

Ryton® PPS offers excellent resistance to a broad spectrum of chemicals and has no known organic solvent under 200 °C (392 °F). This allows the material to thrive in highly corrosive environments, including all automotive and electronic processing fluids.

Figure 2: Chemical resistance comparison



Pass: 24 hours at 93°C
>75% retention of tensile strength





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