



# Woodland

## PLASTICS CORPORATION

Your First Choice Thermoset Molder

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### Thermoset Plastic Q&A

<b><i>What is a Thermoset plastic?</i></b>	Thermoset, or Thermosetting plastics, are synthetic materials that strengthen when heated, but cannot successfully be remolded or reheated. After initial heat-forming, Thermoset plastics become heat resistant.
<b><i>What are common characteristics of Thermoset materials?</i></b>	Common characteristics of Thermoset materials include thermal performance and stability, dimensional stability, resistance to heat, creep, and corrosion, along with superior hardness, compressive strength, and excellent moldability.
<b><i>What industries use Thermoset plastic materials?</i></b>	Due to excellent thermal stability, performance, and chemical resistance, Thermoset materials are used in the Automotive, Appliance, Electrical, Lighting, Energy, and Oil/Gas markets.
<b><i>What are common applications or products of Thermoset materials?</i></b>	Common products and applications that use Thermoset plastics include electrical housings and components, insulators, heat shields, circuit breakers, switchgear, motor components, thrust washers, brush holders, ash cups, valve covers, disc brake pistons, knobs and handles, and other parts and component that may be exposed to excess heat or electricity. Additional applications include frac balls, load rings, HVAC condensation pans, pumps, headlamps, and wiper plugs.
<b><i>What is the difference between a Thermoset and Thermoplastic material?</i></b>	The main difference between a Thermoset and Thermoplastic material is that after Thermosets are heated, they are “set” in their chemical and physical properties, and are no longer remoldable or reheatable. Thermoplastics, on the other hand, may be reheated post-mold to form into a different shape or size, or be melted for recycling purposes.
<b><i>What types of materials are considered Thermoset?</i></b>	Common Thermoset materials include Bulk Molding Compounds (BMCs), Phenolic resins, Diallyl Phthalate (DAPs), Epoxy, and Sheet Molding Compounds (SMCs). Base resins are typically unsaturated polyester or vinyl ester based compounds.
<b><i>What are traditional benefits of using a Thermoset over a Thermoplastic material?</i></b>	Applications may require a Thermoset material instead of a Thermoplastic if the application requires high stiffness and exceptional strength-to-weight ratios post-mold. Thermosets are prime for applications that may be exposed to excess heat and/or corrosion. Additionally, Thermoset plastics have excellent thermal properties, thermal insulation, and dimensional stability to keep its chemical and physical properties consistent after heat-forming.
<b><i>Are there any cost advantages to using Thermoset materials?</i></b>	Parts fabricated from Thermoset materials are generally more cost-effective than traditional Thermoplastics and metal materials.
<b><i>How are Thermoset materials processed?</i></b>	Thermosets may be processed in a variety of ways depending on the material, applications, and specification requirements for the part. Common molding processes include Injection, Compression, Injection-Compression, Insert, and Transfer molding.