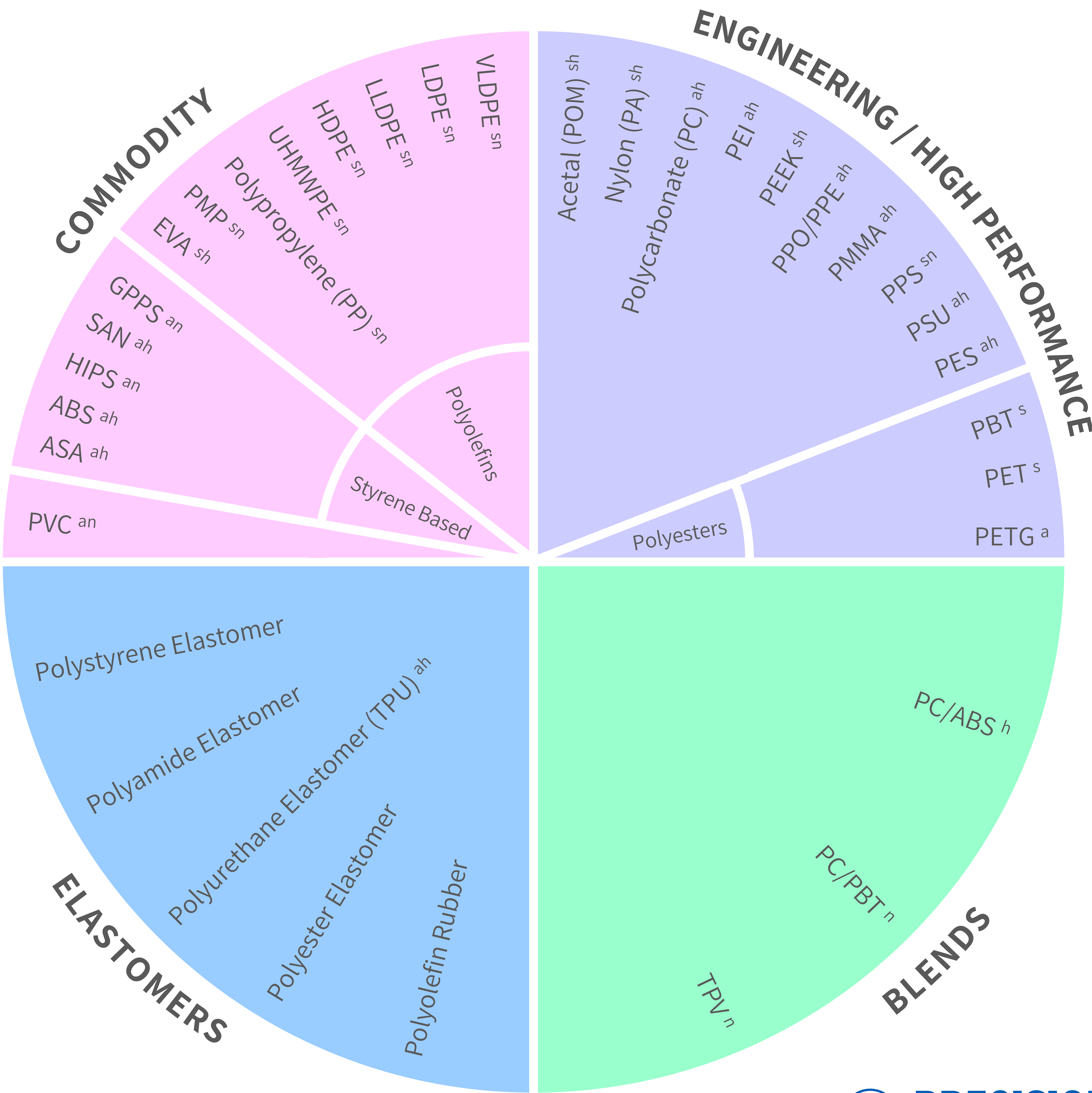


WHEEL OF THERMOPLASTICS™



NOTES

- 1) There are two types of plastics: thermoplastics and thermosets.
- 2) Thermoplastics can be melted and reshaped repeatedly, whereas thermosets are irreversibly hardened by curing from a soft solid or viscous liquid.
- 3) Thermoplastics can be divided into four groups: commodity plastics, engineering or high-performance plastics, elastomers, and blends.
- 4) Thermoplastic elastomers have both plastic and rubber-like qualities and can be injection molded.
- 5) Thermoplastics can be either amorphous or semi-crystalline.
- 6) Semi-crystalline materials contain areas with ordered arrangements of particles, are difficult to bond, and usually are opaque.
- 7) Amorphous materials are made up of irregularly shaped particles, have a low impact strength, and generally are transparent or translucent.
- 8) Thermoplastics can be either hygroscopic or non-hygroscopic.
- 9) Hygroscopic plastics absorb water from the surrounding environment (ambient moisture or humid air) into their molecular structure.
- 10) In non-hygroscopic plastics, liquid water only collects on the surface of the material.
- 11) Thermoplastics can be either homopolymers or copolymers.
- 12) A homopolymer is a polymer (chemical compound with repeating units) with only one type of repeat unit, whereas copolymers have two units polymerized together.
- 13) The Wheel of Thermoplastics™ contains the most common types of thermoplastics used for plastic injection molding and is not an exhaustive list of materials.



KEY

- ^a Amorphous
- ^s Semi-crystalline
- ^h Hygroscopic
- ⁿ Non-hygroscopic

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