Standard Materials (Injection Molding)

The performance of your system depends on using the right material. We offer our injection molded parts in standard, high-performance plastics to ensure chemical compatibility and physical durability.

Polypropylene (PP#/PR#)

Polypropylene is a versatile thermoplastic polymer prized for its exceptional chemical resistance, light weight, and durability. This grade of polypropylene homopolymer is specifically formulated for purity and meets numerous international health and safety standards, making it a trusted choice for a wide array of applications, from industrial manufacturing to regulated food and medical sectors.

Key Advantages & Characteristics:

- **High-Purity Formulation:** This material is not intentionally formulated with a long list of substances, including animal-derived materials, bisphenol A (BPA), phthalates, latex, PFAS, or heavy metals like lead, mercury, and cadmium.
- **Broad Regulatory Compliance:** Meets many requirements for food contact, medical use, and environmental safety, providing confidence for critical applications.
- **Durability & Stability:** The material is stable under normal conditions of use, storage, and transport. Ideally stored in dry conditions under 50°C (122°F) and away from UV light.

Compliance and Certification Highlights:

- **Biocompatibility (USP Class VI):** Meets USP Plastic Class VI requirements. It has passed USP biological reactivity tests, including systemic toxicity, intracutaneous toxicity, and muscle implantation studies, with extracts showing no significant reaction compared to controls.
- **FDA Food Contact (USA):** Meets the FDA requirements outlined in 21 CFR 177.1520. It is suitable for food contact, including cooking applications, under conditions of use A through H.
- **Food Contact (EU):** Conforms to Regulation (EC) 1935/2004 for materials intended for food contact. The monomers and additives used are listed in EU Regulation 10/2011.
- **Drug Master File (DMF):** This product is listed in DMF #9988, with Letters of Authorization available to support medical device submissions.
- **RoHS Compliant:** Conforms to the RoHS Directive (2011/65/EU), restricting the use of hazardous heavy metals, PBBs, PBDEs, and phthalates.
- **Automotive Substance List (GADSL):** The resin does not intentionally contain any declarable substances above the threshold values on the Global Automotive Declarable Substance List.
- **TSCA Compliant:** This material is not intentionally formulated with any TSCA chemicals.
- **Proposition 65:** Does not contain any components or chemicals currently known to the State of California to cause cancer, birth defects, or reproductive harm at levels which would be subject to Proposition 65.

- **Allergen Free:** Not intentionally formulated with common allergens as defined by the FDA, such as milk, eggs, fish, wheat, or nuts.

Common Industries and Applications:

With its robust safety and compliance profile, this polypropylene is suitable for:

- Medical devices and labware (*Note: This material is not intended for use in the manufacture of any form of implanted medical or surgical device*)
- Food and beverage packaging and processing
- Pharmaceutical applications
- General industrial manufacturing
- Great chemical resistance and a good all-around option

Nylon (NY#/NR#)

Nylon, and specifically this Polyamide 66 (PA66) resin, is a premier engineering thermoplastic known for its exceptional strength, toughness, and thermal stability. It is a durable material choice for components that need to withstand demanding mechanical and thermal conditions, making it highly suitable for a variety of industrial and automotive applications.

Key Advantages & Characteristics:

- **High Thermal Resistance:** This material has a high melting point of over 200°C (392°F) and a decomposition temperature exceeding 340°C (644°F), ensuring stability in high-temperature environments.
- **Purity of Formulation:** This Nylon grade is not intentionally formulated with a wide range of regulated substances. This includes:
    - Per- and polyfluoroalkyl substances (PFAS), including PFOA and PFOS.
    - Persistent, Bioaccumulative, and Toxic (PBT) chemicals listed under TSCA Section 6(h).
    - Substances of Very High Concern (SVHC) on the REACH Candidate List.
    - Various flame retardants, including polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).
    - Halogenated compounds.
    - Conflict minerals originating from the DRC or adjoining countries.
    - Ozone-Depleting Substances (ODS).
- **Durability & Stability:** This material is highly stable under normal environmental conditions. Ideal storage is in a cool, dry place.

Compliance and Certification Highlights:

This material complies with key international regulations, making it a reliable choice for components used in the automotive and electrical/electronic industries.

- **RoHS Compliant:** Complies with the requirements of the RoHS 3 Directive (EU) 2015/863, as well as RoHS standards.
- **Automotive Standards:**
    - **ELV:** Complies with the heavy metal requirements of the European End-of-Life Vehicle (ELV) Directive 2000/53/EC.
    - **GADSL:** No substances listed on the Global Automotive Declarable Substance List (GADSL) are intentionally added above declaration limits.
- **Electrical/Electronic Standards (WEEE):** Complies with the substance requirements of the European WEEE Directive 2012/19/EC.
- **TSCA Compliant:** The product is in compliance with the TSCA Inventory requirements for commercial purposes.
- **California Prop. 65:** Contains no chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.
- **CONEG Compliant:** The levels of cadmium, hexavalent chromium, lead, and mercury are below the 1994 CONEG guidelines of 100 ppm total.

Use & Application Disclaimers:

It is critical to note the intended and non-supported uses for this specific grade of material.

- **General Use:** This product is intended for manufacturing and research use only.
- **Food & Water Contact:** This material is **not** supported or listed for food contact applications in the USA, Europe, or China, nor is it listed for use in contact with drinking water.
- **Medical Applications:** This material must **not** be used in medical applications involving implantation in the human body or contact with internal body fluids or tissues.

Polycarbonate (YC#)

Polycarbonate is a durable thermoplastic resin known for its strength, stiffness, and optical clarity. This particular grade is intended for use as a raw material in industrial conversion for the manufacturing of various articles and goods.

Key Advantages & Characteristics:

- **Purity of Formulation:** This polycarbonate grade is not intentionally manufactured or formulated with many regulated substances.
- **Stability & Durability:** The material is chemically stable and robust under typical conditions.
    - **Thermal Stability:** It is recommended to avoid temperatures above 425°C (797°F), as exposure to elevated temperatures can cause the product to decompose.
    - **Toxicology:** The material has a very low toxicity if swallowed and no adverse effects are anticipated from skin absorption.

- **Environmental Impact:** This water-insoluble polymeric solid is expected to be inert in the environment. It is not expected to biodegrade but may undergo surface photodegradation with exposure to sunlight. Due to its high molecular weight, it is not expected to bioconcentrate.
- **Raw Material Note:** This product contains a raw material synthesized from animal extracts, specifically tallow from bovine (beef) sources in the EU region. The tallow is classified as EU Category 3 and is processed under conditions compliant with EU Regulation 142/2011/EC.

Compliance and Certification Highlights:

This material meets a variety of key regulatory standards, making it suitable for a wide range of applications.

- **RoHS Compliant:** The product is in compliance with the requirements of the EU RoHS Directive (2011/65/EU and its amendments), confirming it is not intentionally formulated with restricted substances like lead, mercury, cadmium, hexavalent chromium, PBBs, PBDEs, and specified phthalates.
- **REACH SVHC:** The product does not contain any Substances of Very High Concern (SVHC) from the candidate list above the 0.1% wt reportable limit.
- **California Proposition 65:** This product contains a chemical that is at or below the "safe harbor level" as determined by a risk assessment and is therefore not required to be listed on the SDS or label under Prop 65.
- **TSCA Compliant:** All components of this product are on the TSCA Inventory or are exempt from its requirements.
- **OSHA Status:** This material is not considered hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200[cite: 62].
- **PFAS:** Trinseo has tested its chemical base and finds 0% of Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).