TECHNICAL DATA SHEET

Centaur PP Medical
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Centaur PP Medical – Medical Graded Polypropylene Pellets for LFAM

Centaur PP Medical is a high-performance medical graded polypropylene (PP) granulate specifically engineered for Large-Format Additive Manufacturing (LFAM). Our Centaur PP Medical pellets comply with the following ISO tests and U.S. Pharmacopeia (USP) guidelines for plastics:

- ISO 10993-4: test of hemocompatibility;
- ISO 10993-5 tests for in vitro cytotoxicity;
- ISO 10993-10 tests for irritation and skin sensitization;
- ISO 10993-11 tests for systemic toxicity;
- USP 661.1 guidelines for making pharmaceutical packaging systems;
- UPS Class VI classification for the biological reactivity of plastics and materials.

Next to complying to the abovementioned medical standard, Centaur PP Medical delivers exceptional layer adhesion, resulting in Z-strength values that rival injection-molded polypropylene. With an elongation at break of nearly 650%, Centaur PP Medical offers a unique combination of flexibility, toughness, and long-term durability.

As a slightly soft and flexible polypropylene, Centaur PP Medical delivers superior impact resistance and reliable performance. Its heat resistance above 100 °C makes it a highly versatile material for demanding medical applications.

Centaur PP Medical is the ideal choice for manufacturers seeking lightweight, impact-resistant and durable components in their medical applications.

Key Features of Centaur PP Medical Pellets for LFAM

- **Medical Graded Polypropylene (PP)** – compliant to ISO 10993-4, ISO 10993-5, ISO 10993-10, ISO 10993-11, USP 661.1, and UPS Class VI.
- **Optimized for LFAM** – Easy-to-print medical graded polypropylene granulate designed for reliable performance in large-format 3D printing.
- **Food-Contact Compliant** – Safe for direct use in food-related applications and regulated environments.
- **Lightweight Density (0.9 g/cc)** – Ideal for weight-sensitive designs and portable components.
- **Watertight Printing** – Delivers leak-proof results, even with single-wall prints.
- **Enhanced Wear & Fatigue Resistance** – Durable under mechanical stress and repetitive use.
- **Long-Term Reliability** – Proven performance across diverse environmental conditions.

Suitable Applications for Centaur PP Medical Pellets for LFAM

- **Prosthetics and orthotics** – Lightweight, strong, and skin-contact safe.
- **Orthopedics** – durable and impact-resistant for medical applications.
- **Medical containers** – Heat- and wear-resistant components for frequent usage.
- **Food contact applications** – Compliant, dishwasher safe, and microwave resistant.
- **Lightweight & durable parts** – Ideal for medical applications where strength-to-weight ratio matters.

Material properties	**Typical value**	**Test Method**
MFR (230°C, 2.16kg)	7.8 g/10min	ISO 1183
Density	0,9 g/cm^3	DSC
Mechanical properties		
Tensile strength at yield	15,8 MPa	ASTM D638
Tensile strength at break	26,2 MPa	ASTM D638
Flexural modulus	402 MPa	ASTM D790
Elongation at yield	27%	DSC
Elongation at break	642%	ASTM D638
Impact strength (Izod Notched 23°C)	30 KJ/m^2	ISO 179-1eA
Shore Hardness	50D	DSC

Thermal properties

Vicat Softening Temperature	103 °C	DSC
Melting Point	170 °C	-

Processing Recommendations for Centaur PP Medical Pellets for LFAM

Pre-Drying: Not required

Centaur PP Medical is a non-hygroscopic polymer and does not absorb moisture into its internal structure.

Zone 1: 200°C ±20 °C **Zone 2:** 210°C ±20 °C **Zone 3:** 220°C ±20 °C
Max temp: 240 °C **Die temp:** 240°C ±10 °C

Typical extrusion settings may require optimization based on hardware used.

Storage and Handling Guidelines for Centaur PP Medical Pellets for LFAM

Centaur PP Medical is considered an inert and safe material under standard storage conditions, presenting no significant hazards. To ensure maximum quality, stability, and long-term performance, proper storage practices are recommended.

For best results:
- Store in a tightly sealed container to protect against moisture absorption.
- Keep in a dry, cool, and well-ventilated environment.
- Avoid direct exposure to sunlight or intense artificial light to preserve material integrity.

By following these guidelines, Centaur PP Medical will maintain its reliability and print performance over time.

Product export information

HS code:	39021000
Description:	Polypropylene (PP) resin in primary form
Origin:	European Union

Disclaimer

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