

High Performance Polymers for resilient Supply Chains

In today's geopolitical and economic environment, resilient supply chains have become a critical factor for manufacturers working with high-performance polymers. Companies relying on a single source expose themselves to significant risks in times of political uncertainty, logistics disruptions or raw material shortages.

Developing a robust second-source strategy is therefore essential to ensure long-term supply security and operational stability. With trusted supplier networks across Europe, India, Korea, the USA and Japan, the BIEGLO Group supports customers worldwide with alternative sourcing concepts. Reliable materials are designed to strengthen supply chain resilience – especially for defence programs affected by ITAR regulations and sourcing restrictions.



BIEGLO Group: Enabling High-Performance Engineering

The BIEGLO Group offers a specialized portfolio of high-performance polymers tailored to the demanding requirements of the defence sector. Whether the focus is weight reduction, thermal stability, chemical resistance or superior mechanical properties, our materials deliver reliable performance under extreme conditions. From aerospace and defence electronics to lightweight structural components and tribological applications, BIEGLO supports advanced engineering projects with high-performance polymer solutions.

High-Performance Polymer Recycling: Performance with Lower Cost

Recycled high-performance thermoplastics such as R-PEEK and R-PEI are suitable for a wide range of defence applications where proven material performance, durability and cost efficiency are required. By replacing virgin material where technically appropriate, recycled HPPs can significantly reduce material costs while conserving valuable resources.

BIEGLO also offers take-back solutions for production scrap, offcuts and residual material. Returning these high-value polymers into the recycling loop helps reduce waste, recover material value and generate additional cost savings for customers.

BIEGLO HPPs are PFAS-Free by Nature

In their unmodified form, BIEGLO's core HPPs are PFAS-free – offering high performance without fluorinated additives or the need for PFAS-containing processing aids.



Granules & Powder



Granules and powders made from high-performance polymers are designed for injection moulding, extrusion and coating applications. BIEGLO materials combine excellent thermal stability, chemical resistance and mechanical performance with reliable processability for advanced manufacturing and technically demanding environments. All products can be offered as compounds with fibres or other additives.

PEEK (polyether ether ketone)

PEEK is the world's leading high-performance polymer, combining outstanding mechanical strength with excellent thermal, chemical and wear resistance. Virgin and recycled grades are available.



Gimide® PEI

PEI combines excellent flame retardancy and dimensional stability. GIMIDE® is perfect for resilient second-source strategies, as there is no PEI-polymerisation in Europe. Virgin and recycled grades are available.



Celazole® PBI-PAEK Compounds

Celazole® PBI T-Series offers extreme heat resistance, outstanding compressive strength and exceptionally low creep. Applications with continuous temperatures up to 300°C are possible. Tribological properties are unmatched.



AURUM

AURUM™ thermoplastic polyimide combines outstanding heat resistance with excellent dimensional stability, wear performance and electrical properties. Its melt processability enables efficient production of high-temperature components.



ATSP

ATSP materials combine exceptional thermal stability with low friction and outstanding wear resistance. Their advanced polymer chemistry also enables self-healing and reprocessing capabilities.



Semi-finished & finished Parts

Semi-finished Parts: Shape your Visions

Rods, tubes, sheets and films made from high-performance polymers such as PEEK, PEI, PAI and Polyimide. BIEGLO keeps a stock of semi-finished products in Europe. These products enable CNC machining, this enables producers to manufacture small series without special tooling. Sales in small and large volumes.



Finished Parts: Ready for Action

BIEGLO finished parts made from high-performance polymers offer low weight, excellent wear resistance, low-noise operation, corrosion-free performance and long-term dimensional stability. Precision-machined components with short lead times and large-volume injection-moulded parts can be delivered.

Meldin® 7000-Series Thermosetting Polyimide

Meldin® 7000-Series thermosetting polyimides deliver exceptional thermal stability, low wear and excellent mechanical performance. Polyimides can function in environments from $< -250^{\circ}\text{C}$ to $> 400^{\circ}\text{C}$.



340°C
PBI

300°C
Polyimide

270°C
PAI

260°C
PEKK

240°C
PEEK

170°C
PEI

Polycast® acrylic sheets

Acrylic sheets combine low weight, excellent thermoformability and durable surface performance. Polycast® acrylic is used for advanced military aircraft glazing, including the cockpit canopy of the F-35.



▲ Maximum continuous service temperature

Properties and processing

Special applications demand materials that perform reliably under extreme thermal, mechanical and environmental conditions. BIEGLO high-performance polymers support advanced engineering with lightweight solutions, dimensional stability, wear resistance and long-term reliability across highly demanding industries. By compounding, polymer properties can be enhanced.



CTE (Coefficient of Thermal Expansion): Low CTE materials reduce thermal expansion under extreme temperature changes, ensuring dimensional stability with expansion behaviour similar to aluminium.



Low Outgassing: Our low outgassing materials minimize the release of volatile substances, making them ideal for sensitive precision-electronics as in optical sensors.



Tribology: Our advanced tribological materials reduce friction, wear and noise while ensuring reliable long-term performance for bearings, gears and other moving components.



FR (Flame Retardancy): Our flame-retardant materials reduce ignition risk and flame spread under extreme conditions, improving fire safety and protecting critical components.



Ablative Materials: Our ablative materials protect components from extreme heat by controlled surface erosion, reducing heat transfer and helping maintain structural integrity in critical applications.



Lightweight: Our lightweight materials reduce component weight without compromising mechanical performance, enabling higher efficiency, improved mobility and greater design freedom.



Corrosion Resistance: Our corrosion-resistant materials withstand aggressive chemicals, moisture and harsh environments, helping maintain long-term performance and reliability of critical components.



Thermal & Electrical Insulation: Our insulating materials reduce heat transfer and electrical conductivity, helping protect sensitive components and ensure reliable performance under demanding conditions.



Thermal & Electrical Conductivity / ESD: Modified HPP grades can provide thermal or electrical conductivity and ESD protection, helping manage heat and protect sensitive electronic components.



Fibre Compounds: Fibre-reinforced compounds deliver enhanced stiffness and dimensional stability for low-cost, high-volume injection-moulding applications.



Composites: High-performance polymer composites combine low weight with exceptional mechanical strength and thermal resistance for lightweight clips and structural components.



3D-Print: High-performance polymers are suitable for 3D printing. These thermoplastics enable lightweight, complex and durable components such as housing parts.

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