EUROPLEX®

EUROPLEX® PPSU Sheets

Reliable Performance for Medical & Industrial Applications

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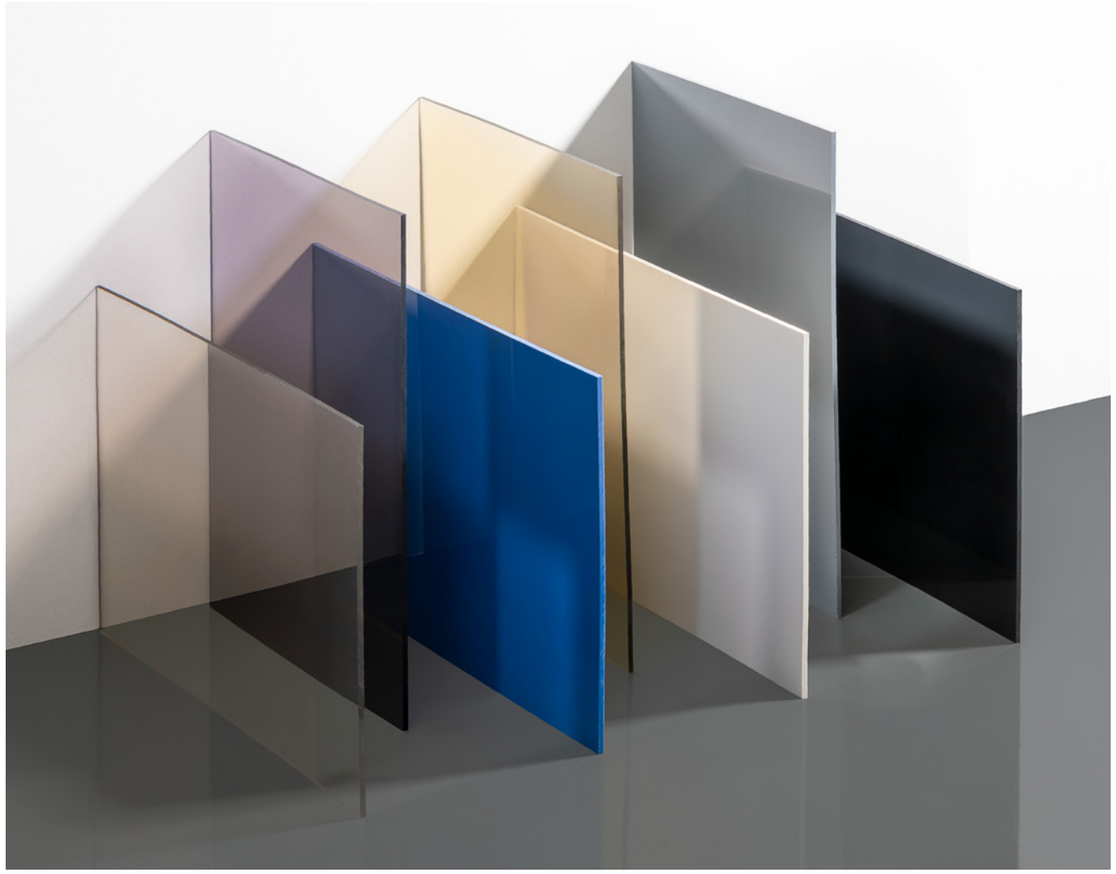

EUROPLEX® PPSU
Overview

EUROPLEX® PPSU sheet is based on polymer polyphenylsulphone (PPSU). It combines high-temperature resistance, superior mechanical performance, inherent flame retardancy, and outstanding chemical resistance. These make EUROPLEX® PPSU sheet the preferred choice wherever demanding conditions must be met reliably.

EUROPLEX® PPSU sheet is in both opaque and transparent variants available. It can be formed and fabricated into complex geometries faster and more economically than injection-molded parts, particularly for small-to-medium production volumes.

Performance of EUROPLEX® PPSU Sheet

- High heat distortion temperature up to 190 °C for continuous service, with a Vicat softening point of 222 °C.
- Excellent mechanical performance across the full temperature range, including at sub-zero conditions.
- Exceptional chemical resistance for an amorphous thermoplastic.
- Inherently flame-retardant and self-extinguishing without added flame retardant additives; UL94 V-0 rated at 0.8 mm thickness.

Technical Data

Product Properties	EUROPLEX® PPSU	Unit	Standard
Density	129	g/cm³	ISO 1183
Vicat softening temperature	222	°C	ISO 306/B50
Max. permanent service temperature	190	°C	
Modulus of elasticity	2350	MPa	ISO 527
Tensile strength	70 – 80	MPa	ISO 527
Izod notched impact strength (2.0 mm)	50 – 60	kJ/m²	ISO 180/1A

Note: Impact strength values for protective gear applications (firefighter visors) are 60–70 kJ/m² (ISO 180/1A).

Color range & available thicknesses

Sheet grade	Color code	Color	Trans-mission	Color card	L*a*b* [1]	Thickness (mm)
Opac colors						
EUROPLEX® PPSU	99071	Beige	OP		85.3 / 0.83 / 9.79	2.0 / 3.0 / 4.0 / 5.0 / 6.0
EUROPLEX® PPSU	99072	Grey	OP		58.72 / -1.66 / -3.59	3.0 / 4.0 / 5.0 / 6.0
EUROPLEX® PPSU	99053	Blue	OP		45.33 / -3.41 / -27.04	2.0 / 3.0 / 4.0
EUROPLEX® PPSU	99059 / 99159	Black	OP OP		31.04 / -0.2 / -1.77	3.0 / 4.0 / 3.0 / 4.0
Transparent colors						
EUROPLEX® PPSU	99050	Grey	TP		58.22 / -0.5 / 9.22	2.5 / 3.0
EUROPLEX® PPSU	99055	Natural	TP		NA	0.8 / 1.0 / 2.0 / 3.0 / 6.0
EUROPLEX® PPSU	99155	Natural	TP		NA	3.0

[1] Approximate value; small deviations can be possible TP=transparent OP=opaque

EUROPLEX® PPSU
for Medical Applications

Instrument & Implant Management

EUROPLEX® PPSU is the material of choice for sterile containers, surgical trays, and handling systems throughout the hospital environment. Its unique property profile directly addresses the demands of instrument reprocessing, operating theatre logistics, and implant protection.

Key Benefits for Medical Use

- Sterilization compatibility withstands all conventional methods, including superheated steam (autoclave) at 134 °C for 1000 or more cycles, as well as sterilization in combination with morpholine.
- Exceptional impact resistance features practically unbreakable components that survive the rigors of everyday hospital handling and transport.
- Aggressive disinfectant resistance – superior resistance to the wide range of disinfectants routinely used in clinical settings.
- Transparent grades enable visual identification of container contents without opening, reducing handling time and contamination risk.
- Low weight presents a significant advantage over conventional stainless-steel containers, reducing fatigue and transport costs.
- Raw material meets FDA and ISO 10993 requirements for biocompatibility in medical applications.
- Sheet-based thermoforming flexibly allows rapid, cost-effective prototyping and shorter lead times compared with injection molding, ideal for customized tray systems.

Typical Medical Applications

- Containers and trays for surgical instruments, implants, and endoscopes
- Disinfection and sterilization baths
- Sterilizable equipment guards and protective enclosures
- Reprocessing containers for minimally invasive instruments

EUROPLEX® PPSU
for Industrial Applications

Protective Equipment & Demanding Environments

Beyond healthcare, EUROPLEX® PPSU delivers the same outstanding combination of heat resistance, flame retardancy, mechanical toughness, and chemical resistance in safety-critical industrial applications – most notably protective visors for firefighters and first responders.

Key Benefits for Industrial Use

- Inherent flame retardancy (UL94 V-0 at 0.8 mm) executes self-extinguishing behavior without requiring flame retardant additives, ensuring reliability under fire conditions.
- High thermal stability archives service capability up to 190 °C permanently, protecting wearers in extreme heat environments.
- High impact strength ensures face shields survive the mechanical stresses of emergency operations without fracturing.
- Wide-range chemical resistance withstands exposure to fuels, solvents, and fire suppressants encountered in emergency and industrial settings.
- Approved standards compliance in accordance with EN 443:2008 (helmets for building fire fighting) and EN 14458:2018 (face shields for firefighters, ambulance and emergency services).
- Retaining clarity of the transparent grades maintains optical quality under thermal and chemical stress, preserving visibility in hazardous situations.

Typical Industrial Applications

- Visors for firefighter helmets and high-performance industrial safety helmets
- Face shields for ambulance and emergency service personnel
- Heat-resistant equipment guards and safety enclosures
- Protective covers in environments with elevated temperatures or chemical exposure

Our Service and Global Offering

POLYVANTIS is committed to its customers around the world with a portfolio of film and sheet materials, application support and worldwide services.

We are a world-leading multi-material player for semi-finished plastic products. Our customers from a multitude of different industries can choose from an extensive range of high-quality products provided by a single source, including leading brands such as LEXAN™ FILM & SHEET from polycarbonate resins and PLEXIGLAS® and ACRYLITE® for PMMA semi-finished products.

Our name stands for the variety of products we offer, and our quest to secure progress in polymers and related materials. POLYVANTIS offers innovative materials for a wide range of requirements.

The portfolio ranges from solid plastic sheets and films for a multitude of areas of application, through specialty products with custom properties, all the way up to the matching adhesives and auxiliaries.

The POLYVANTIS umbrella unites strong plastics brands. With 15 production sites across the United States, Europe, Asia and Africa, we offer innovative products and solutions for segments such as building and construction, transportation, aircraft and railway interiors, electrical engineering and electronics, automotive manufacturing and the home and garden sectors.

Please feel free to contact our experts worldwide with any questions you may have.

POLYVANTIS GmbH

Riedbahnstraße 70
64331 Weiterstadt
Germany

POLYVANTIS
Sanford LLC

1796 Main Street
Sanford, Maine 04073
USA

www.polyvantis.com
www.acrylite.co

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