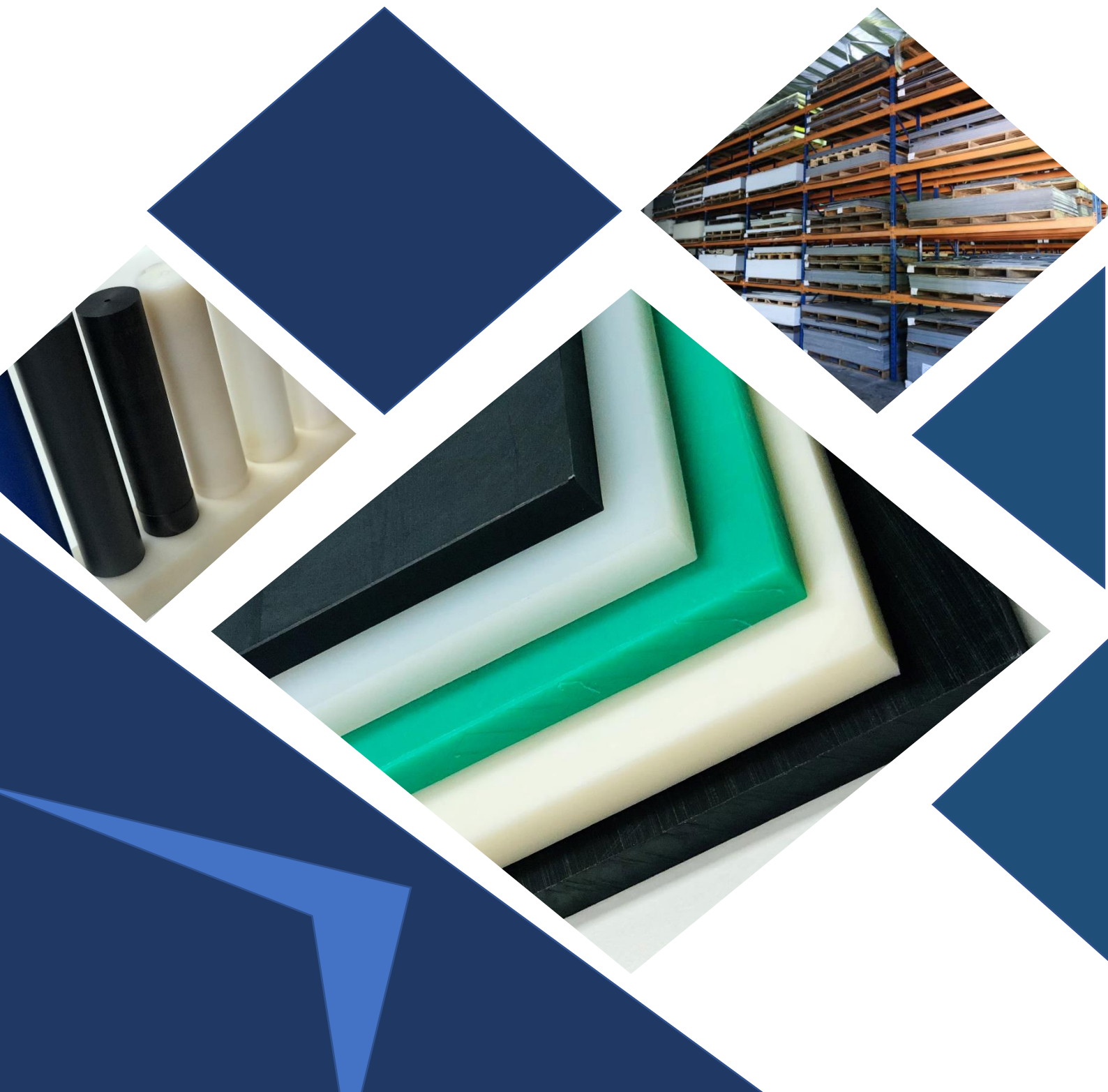


# ENGINEERING PLASTIC



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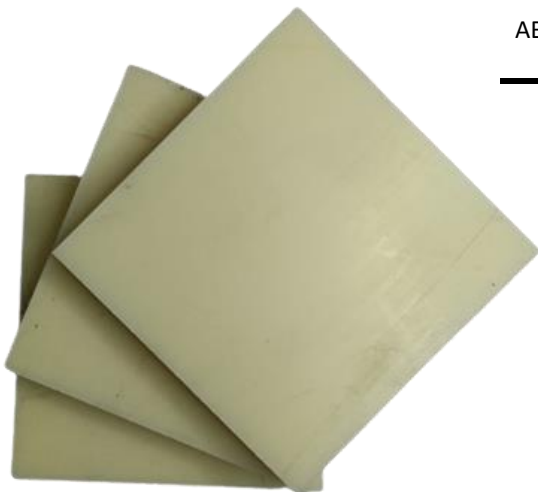
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# Commodity Thermoplastics



Acrylic / PMMA

Description	Acrylic / PMMA sheets are impact & weather resistance, available in crystal clear or opaque colours. Ideal for automation, automotive, transportation and other industries. Acrylic sheets boast a high molecular weight that enables fabrication and forming.
Size	<p>Sheets: 2mm-50mm thick x 1220 x 1830 mm, 1220 x 2440 mm</p> <p>Rods: DIA 3mm-100mm X 2000mm</p> <p>Hollow Rod: OD 8mm -300mm X ID 6- 292mm</p>
Application	<p>-Indoor and outdoor signs</p> <p>-Machine covers / windows</p> <p>-Pop displays and exhibits</p> <p>-Architectural glazing</p>



ABS

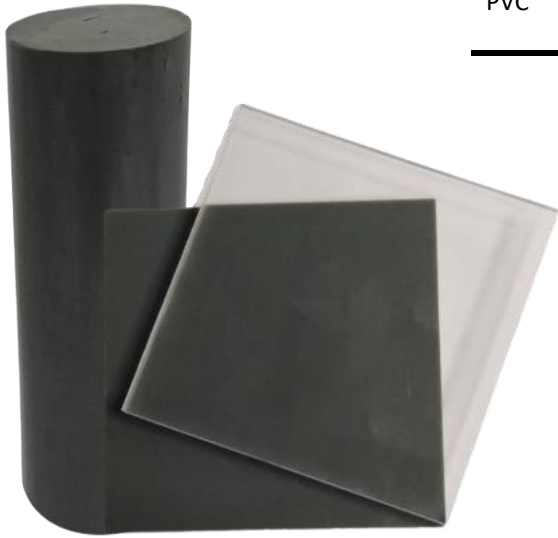
Description	<p>ABS has good thermal and dimensional stability high impact strength even at low temperatures and is scratch resistant.</p> <p>ABS sheets offer ideal properties for production of prototype designed parts. This results in the product having excellent machinability and dimensional stability.</p>
Size	Sheets: 2mm - 50mm X 610 x 1200, 610 x 1000 mm
Application	<p>-Automotive applications</p> <p>-Prototyping work</p>

## HDPE

Description	HDPE (Polyethylene High Density) is a semi crystalline thermoplastic with high toughness and chemical resistance offering superb impact resistance, high tensile strength, and high resistance to a wide range of chemicals including acids, detergents and hot water. It fully complies with the FDA regulations making it an excellent solution for food contact parts
Size	<p>Sheets : 2mm - 50mm T X 1200 x 2400 mm, 1500 x 3000 mm</p> <p>Rods: DIA 15mm -300mm X 1000mm</p>
Application	<ul style="list-style-type: none"> <li>-Food contact parts</li> <li>-Large size chopping boards</li> <li>-Guide rollers</li> <li>-Conveyor screws</li> <li>-Pumps</li> <li>-Valves</li> <li>-Wear pads</li> <li>-Wear strips</li> <li>-Cams</li> <li>-Business machine parts</li> </ul>

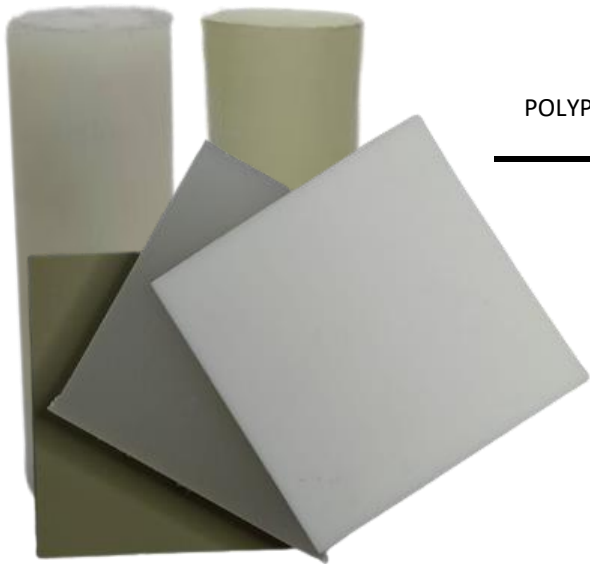
## HMWPE-500

Description	OKULEN® 500 has delivered excellent services due to its cut & impact resistance and damping properties in the food industry and sports & construction sectors at costs that will accommodate a reasonable earnings-based budget. OKULEN® 500 has been used in food contact, and is ideal for use in cutting boards, as trim or in ramming protection as well as certain mechanical engineering applications.
Size	Sheets : 6mm - 25mm T X 1000 x 2000, 1250 x 3050, 2000 x 4000 mm
Application	<ul style="list-style-type: none"> <li>-Food industry</li> <li>-Mechanical parts</li> <li>-Sports &amp; construction sector</li> </ul>



## PVC

Description	PVC (poly-vinyl chloride) is an engineering plastic with good insulation properties. Besides, PVC is resistant to oxidation and degradation and its inherent chlorine content gives it excellent fire resistance.
Size	<p>Sheets: 1mm - 50mm thick x 1220 x 2440 mm</p> <p>Rods: DIA 15mm -300mm X 1000 mm</p> <p>Transparent / Clear 1mm – 15mm X 1220 x 2440 mm</p>
Application	<ul style="list-style-type: none"> <li>-Chemical processing tank</li> <li>-Valves</li> <li>-Fitting and piping systems</li> <li>-Plating barrel</li> <li>-Fume boards</li> <li>-Laboratory cabinets</li> <li>-Electrical insulators</li> <li>-Battery boxes</li> </ul>



## POLYPROPYLENE

Description	Polystone® P homopolymer materials are extremely strong and highly resistant to chemicals, corrosion and heat. Available in Natural, White and Grey colour.
Size	<p>Sheet: 3mm-50mm X 1220 x 2440, 1500 x 3000 mm</p> <p>Rod: DIA 10mm -200mm X 1000 mm</p>
Application	<ul style="list-style-type: none"> <li>-Chemical engineering and tank building</li> <li>-Ventilation technology</li> <li>-Pump engineering</li> </ul>

# Engineering Thermoplastics

## POM



Description	POM-C (Polyoxymethylene) is a highly crystalline thermoplastic, offering excellent low frictional properties and dimensional stability. In addition, its high mechanical strength and toughness coupled with good machinability make it an ideal choice for the production of precision mechanical parts where tight tolerance control is essential. Having a very low moisture absorption, typically (0.08%), it is an ideal material for applications where parts come into contact with chemicals or are exposed to wet conditions.
Size	Sheet: 5mm-100mm X 610 x 2000 mm, 1000 x 2000 mm, 1220 x 3000 mm  Rod: DIA 6 mm -300mm X 1000 mm
Application	-Gears -Guide rollers -Bearings -Bushes -Insulators -Sliding elements -Pump components -Valves and valve bodies -Parts being used in a wet environment

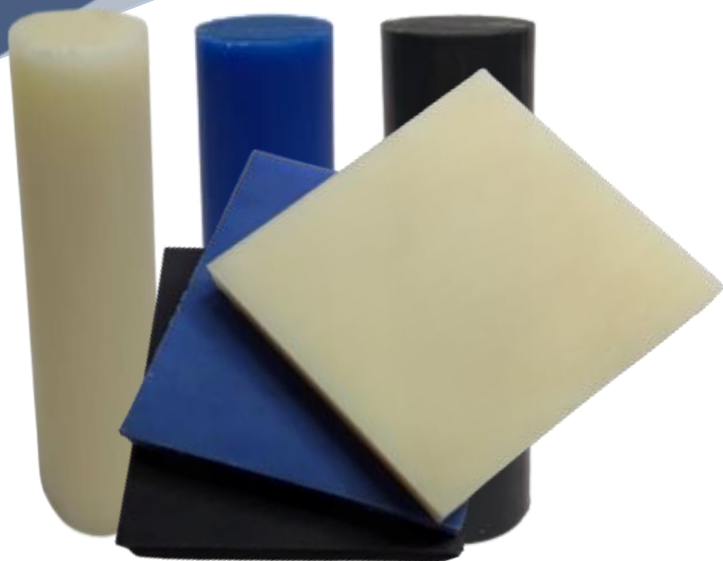
## NYLON



Description	Polyamide 6 / 6.6 (PA6 / PA6.6), a crystalline engineering plastic is an extruded polyamide material. It possesses high thermostability and high stiffness and is used for various applications requiring high hardness and impact strength. The temperature resistance ranges from -400 °C to +100 °C. However due to its polyamide nature, humidity absorption must be considered in terms of dimension stability, electrical and mechanical properties.
Size	Rod: DIA 6mm – 200mm x 1000 mm
Application	Bearing parts Gear wheels, pump parts, sliding rails Castor wheels



## CAST NYLON

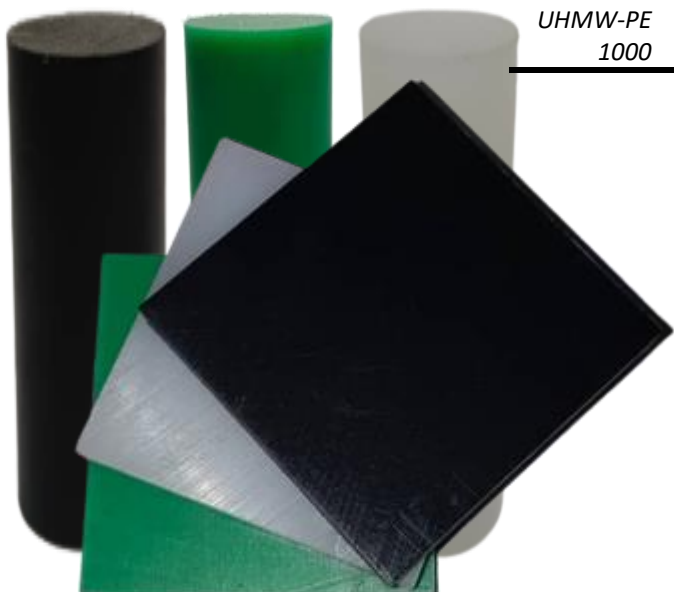


Description	<p>Cast Nylon (Polyamide 6) is manufactured by a pressure-less casting process. This is where the raw material, Caprolactam, is polymerized through a series of chemical reactions. Cast Nylon shows higher molecular weight and a higher degree of crystallization than the extruded PA6. It offers high strength, toughness and resistance to wear, impact and fatigue, and good machinability. Cast Nylon has been widely used for many varied applications within many diverse industries.</p> <p>Cast Nylon Mos2 black, with the addition of molybdenum disulfide has a higher degree of strength leading to higher crystallinity without compromising on the toughness, resulting in a better abrasion as compared to the unfilled cast nylon.</p> <p>Cast Nylon Oil filled (green color), a self-lubricated material offers an even lower co-efficient of friction and improves the sliding properties of the material, even without the use of a lubricant.</p>
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Size	<p>Sheet: 5mm-100mm x 1000 x 2000 mm, 1220 x 2440 mm</p> <p>Rod: DIA 25mm -500mm X 1000 mm</p> <p>Hollow Rods: OD 200 - OD 500 x 600 mm</p>
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Application	<ul style="list-style-type: none"> <li>-Bearings</li> <li>-Sheaves and pulleys</li> <li>-Timing screws, Scrapers</li> <li>-Wheels</li> <li>-Sprockets</li> <li>-Cams</li> </ul>	<ul style="list-style-type: none"> <li>-Rollers</li> <li>-Star wheels</li> <li>-Wear strips</li> <li>-Gears</li> <li>-Wear pads</li> </ul>
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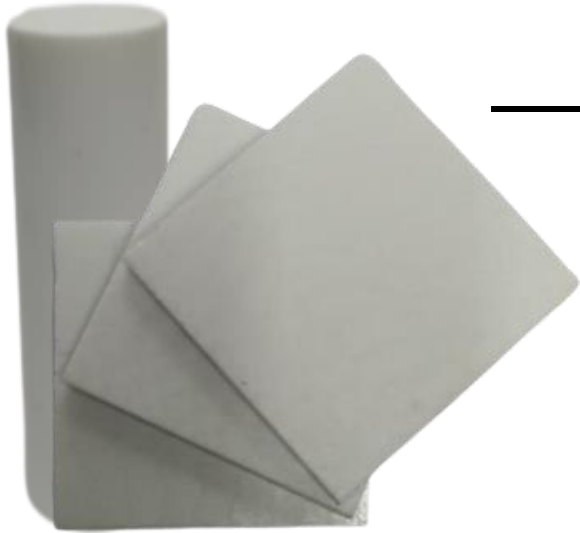
## UHMW-PE 1000



Description	<p>OKULEN®1000, OK1000 / OK2000 Ultra High Molecular Weight Polyethylene, molecular weight of 6,000,000 – 9,000,000 g / mol has material properties that make it extremely versatile; the material is ideally suited for mechanical engineering – OKULEN®1000 parts are used especially in plant construction and handling technology. The material is also ideal for port construction and hydraulic engineering, as insulating linings for high-traffic areas and in the sports and skiing industry. OKULEN®1000 defies low temperatures and most chemicals, and is highly resistant to abrasion.</p>
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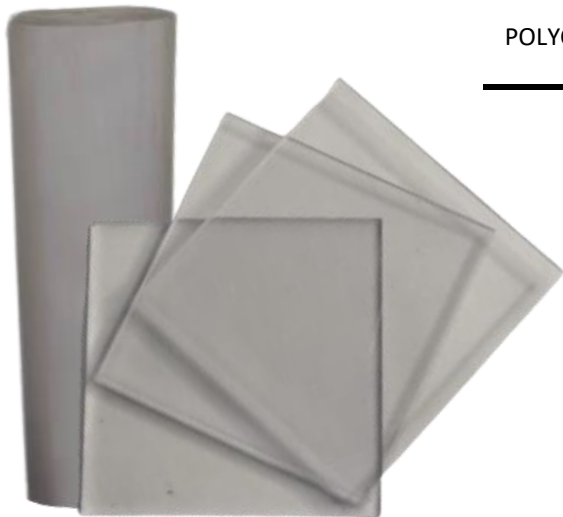
Size	<p>Sheet: 6mm-80mm 1000 x 2000 mm</p> <p>6mm – 30mm X 1250x3050mm, 2000 x 4000mm</p> <p>Rod: DIA 20mm -250mm X 1000mm</p>
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Application	<ul style="list-style-type: none"> <li>-Food and beverage</li> <li>-Chemical</li> <li>-Port construction</li> </ul>	<ul style="list-style-type: none"> <li>-Conveyor</li> <li>-Mechanical</li> <li>-Truck liners</li> </ul>
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## PET

Description	PET (Polyethylene terephthalate) is excellent mechanical properties make it suitable for precision mechanical parts. It provides high tensile and mechanical strength, high hardness and good dimensional stability. PET is extremely well suited for applications where complex parts combined with the tightest requirements in dimensional accuracy and surface quality are needed.
Size	Sheet: 10mm -50mm X 620 X 1000mm Rod: DIA 10mm -200mm X 1000mm
Application	-Bearings -Pumps and parts for housing -Tank lids -Gear wheels -Insulators for electrical engineering

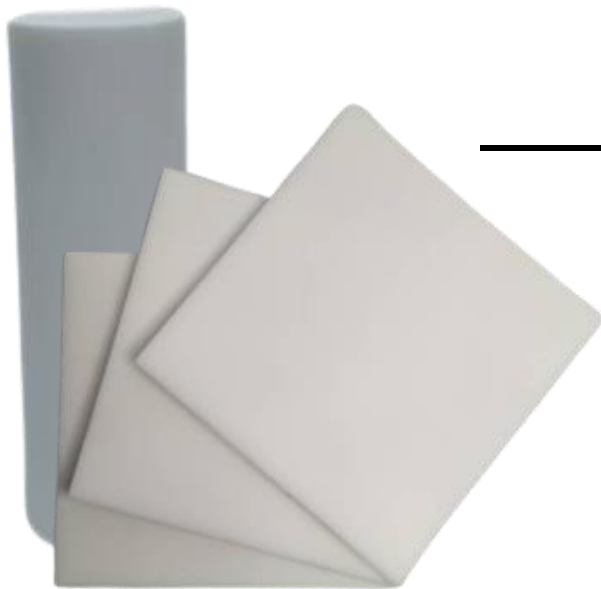


## POLYCARBONATE

Description	Polycarbonate (PC) is extremely robust, lightweight with glass-like transparency and is impact resistant – even at low temperatures. It also has a high dimensional stability and is easily molded, yet displays excellent heat resistance with a glass transition temperature of up to 148°C. ESD options available for the Polycarbonate sheets in transparent and tinted brown, tinted yellow.
Size	Sheet: 1mm-15mm X 1220 x 2440, 20mm-50mm x 610 x 2000 Rod: DIA 10mm -200mm X 1000mm
Application	-Partitions / separators -Machine windows / screens -Machine parts that require transparency

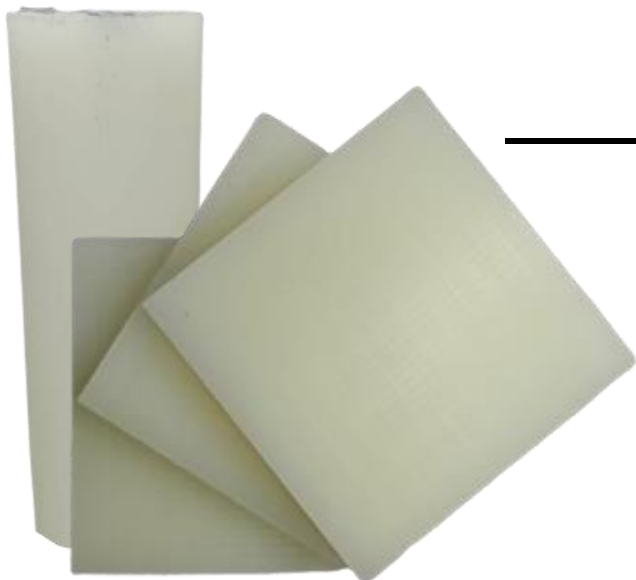


# High Performance Thermoplastics



## PTFE

Description	Polytetra-fluoro-ethylene (PTFE) exhibits astonishing chemical resistance. This self-lubricating material provides a low friction coefficient, and is ideally suited for the manufacture of corrosion-resistant gaskets & seals. One of the most chemically resistant materials available, PTFE also handles continuous service temperatures approaching 250°C.
Size	Sheet: 0.2mm-70mm X 1200mm X 1200mm Skived rolls: 0.2mm – 3,0mm x 1.2 m x 20 m  Rod: DIA 4 mm -350mm X 1000mm Hollow rods and tubes options available too.
Application	-Oil & gas -Pharmaceutical -Chemical -Food and beverage machineries -O-rings, gaskets, seals, etc ...



## PVDF

Description	PVDF (poly-vinylidene fluoride) is a non-reinforced highly crystalline fluoropolymer. Stronger than PTFE but processing at a high temperature resistance of 150 °C. It is generally used in applications requiring the highest purity, strength and resistance to solvents, acids, bases and heat and low smoke generation during a fire.
Size	Sheet: 3mm - 15mm X 1000mm x 2000mm, 10 mm- 50mm x 500 x 3000mm  Rod: DIA 10mm – 160mm X 1000mm
Application	-Chemical tanks -Valves -Rotations discs -Gear wheels

## PEI / ULTEM®



**Description** PEI (Polyetherimide) is a semi-transparent amorphous thermoplastic, having high mechanical and rigidity stability as well as a remarkably high creep resistance across a wide temperature range. Offering superb steam and heat resistance and extraordinary dielectric properties. Its continuous service temperature is around 340 °F. It is suitable for the applications, requiring high strength and rigidity in elevated temperatures. FDA compliance makes it suitable for applications within the medical and food processing industries

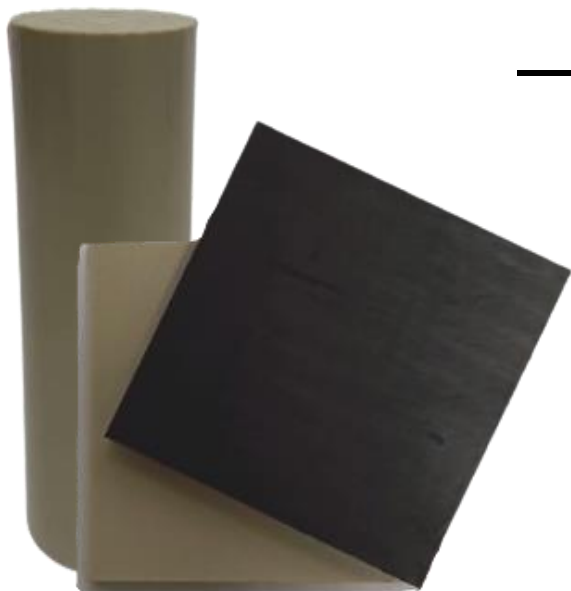
**Size** Sheet: 6mm –30mm X 610mm X 1220mm

Rod: DIA 20mm -200mm X 1000mm

**Application**

- Microwave exposed parts
- Electrical insulating components
- Parts for glass manufacturing equipment
- Steam-cleaning equipment, heat-insulating sleeves
- Medical instruments
- Valve and pump components
- Food processing equipment

## PEEK



**Description** PEEK (Polyether ether ketone) is a semi-crystalline high-performance thermoplastic with excellent sliding properties. It offers excellent mechanical strength, high chemical and hydrolysis resistance, and high steam and radiation resistance. The materials continuous service temperature is around 480 °F, making it suitable for high temperature applications whilst still maintaining its overall physical properties. ESD and conductive PEEK are available too with the addition of carbon fibres or nano carbon fillers.

**Size** Sheet: 5mm-70mm X 610mm X 1000mm, 610 x 3000mm, 500 x 1000mm, 1000 x 1000mm

Rod: DIA 5mm -150mm X 1000mm

**Application**

- Semi-conductor parts
- LCD-manufacturing
- Chemical/electroplating
- Bearing shells
- Piston rings
- Valve seats
- Wafer carriers
- Gears
- Seals, pump vanes
- Friction bearings

## PPS



Description	PPS (polyphenylene Sulfide) is a crystalline resin with very high thermal resistance. Its low co-efficient of linear thermal expansion and low water absorption results in high dimensional stability. It can be used at 220 °C but due to its low glass temperature of 90 °C, care must be taken if used under high load, high temperature.
Size	Sheet: 6mm- 30mm X 610mm X 1220mm Rod: 10mm-60mm x 1000mm
Application	-Electrical & electronic components -CMP ring -Test sockets -Semi-conductor and LCD manufacturing equipment -Mechanical parts for chemical pumps

# Imidized Thermoplastics



## PAI / TORLON®

Description	Polyamide-Imide (PAI) is an amorphous resin combining the thermal resistance and excellent strength of imide bonding with the workability and high toughness of amide bonding. It has the highest mechanical strength among unreinforced plastics. High glass transition temperature at 280°C means that the mechanical strength at 250°C is equal to the strength of POM at room temperature. It has an excellent abrasion resistance even at temperature up to 200°C. Even at temperature above 200°C, the use of lubrication is not required due to its self-lubricating properties, deeming it a good material choice for sliding parts used in high temperature.	
Size	Sheet: 5mm-25.4mm x 305mm x 305mm Rod: DIA 10mm – 50mm	
Application	-Industrial machinery, semi-con & LCD manufacturing parts -High speed bearing and bushes -Automobile parts -Thermal isolators -Electrical insulators -Burn in / test sockets  Available Grades: -Unfilled 4203 -Sliding abrasion resistance 4301 -Glass fibre reinforced 5030	

# Thermoset Composite



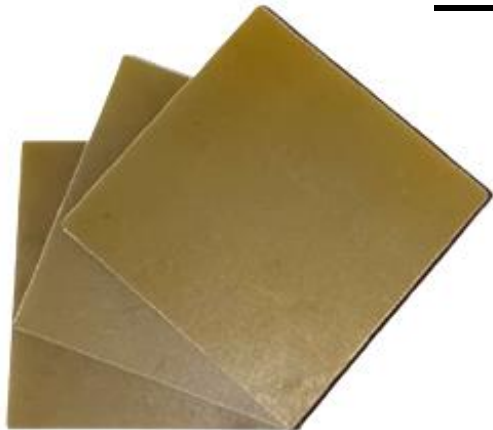
## BAKELITE / PHENOLIC

Description	<p>Bakelite sheets are hard, dense materials made by applying heat &amp; pressure to layers of Cellulose Paper or Fabric cloth impregnated with synthetic resin (phenolic resin). When heat and pressure are applied, polymerization transforms the layers into Thermosetting Industrial Laminates.</p> <p>Bakelite sheet is produced in different grades, mainly paper and fabric with various additives to meet different mechanical, electrical and thermal requirement.</p>
Size	<p>Sheet: 0.8mm – 90mm X 1000mm X 2000mm, 1020mm x 1220mm, 1220mm x 1220mm</p> <p>Rod: DIA 10mm -200mm X 1000mm</p>
Application	<ul style="list-style-type: none"> <li>-Electrical plug</li> <li>-Switches</li> <li>-Transformers</li> <li>-Bobbins</li> <li>-Support for electrical component</li> <li>-Jigs</li> </ul>



#### G10 / FR4

Description	<p>Epoxy resins are widely used in electronic applications because they are virtually impervious to moisture. As a thermoset material, glass epoxy has outstanding mechanical and electric strength as well as good dielectric properties.</p> <p>Epoxy resins are a good choice of thermosets for fabricated components for many electrical and mechanical applications.</p> <p>FR4 is the fire-retardant grade of G10.</p>
Size	<p>Sheet: 0.5mm-50mm X 915mm x 1220mm 0.5mm-50mm X 1020mm X 1220mm</p> <p>Rod: DIA 6mm – 50mm X 1000mm</p>
Application	<ul style="list-style-type: none"> <li>-Boating applications</li> <li>-Gears</li> <li>-Guides</li> <li>-Insulators</li> <li>-Jigs and fixtures</li> <li>-Knife handles</li> <li>-Pulleys</li> <li>-Rollers</li> </ul>



#### G11

Description	<p>G11 grade glass epoxy laminate offers improved mechanical strength at higher temperatures than G10.</p> <p>Because epoxy resins such as G11 laminate are virtually impervious to moisture, this material is a good choice of thermosets for fabricated components used in electrical and mechanical applications.</p>
Size	<p>Glass cloth materials have outstanding mechanical</p> <p>Sheet: 1mm – 30mm X 915mm X 1220mm 1mm – 30mm X 1020mm X 1220mm</p>
Application	<ul style="list-style-type: none"> <li>-High-temperature applications</li> <li>-Structural parts</li> <li>-Printed circuit boards</li> <li>-Power generation components</li> </ul>



# CAST POLYURETHANE

Cold cast polyurethane is a process of mixing 2 parts product, Prepolymer and Curative to form a shape with inexpensive tooling. There is not a need for big quantity due to its unique process and low costs moulds. After filling into a mould, we allow sufficient time for curing and most importantly, post curing time to achieve its optimal physical properties.

There are many different grades of prepolymer ranging from a cost efficient to a high abrasion or resilience material. Our Sales team will be able to advise you on the suitable grade and hardness of material to use. The hardness of our cast polyurethane ranging from Durometer 30 Shore A to 95 Shore A and above it, from 60 Shore D to 80 Shore D, which is as hard as a Nylon material.

The advantage of cast polyurethane

Polyurethane versus that of other materials is that being an elastomer, it is not brittle, has rebound strength and hence able to absorb high impact without damaging the part or absorbing any internal stress.

As Cast polyurethane is in a liquid form in its raw state, we are able to bond the material onto metal, aluminum and some plastic material. This makes it more cost efficient as a metal part can be reused just by coating a new layer of cast polyurethane.

