



PROFESSIONAL PLASTICS



The Global Leader in High-Performance Plastics



High-Performance Thermoplastic and Thermoset Materials
Product Range Booklet

THE BEST HIGH PERFORMANCE PLASTICS FROM THE BEST BRANDS AT THE BEST PRICE

- | | | |
|-------------------------------|-------------------------------|---------------------------------------|
| Bayer Films Americas | King Plastics | Rochling Engineering Plastics |
| Boltaron Performance Plastics | Kleerdex - KYDEX® | Saint Gobain Meldin® Division |
| Cast Nylons Ltd. | Kommerling | Saint Gobain Performance Plastics |
| Cyro Industries | Lucite International | Sheffield Plastics |
| DelStar Coretec | Mitsubishi Plastics | Simona America |
| Evonik Degussa | Norpex-Micarta | Spartech-Royalite - Polycast Plastics |
| Gehr Plastics | Novus Plastic Polish | Takiron Co. Ltd. |
| Gilman Brothers Company | Nytec Plastics | Trelleborg Sealing Solutions |
| Glastic Corporation | Plaskolite, Inc. | Vycom Plastics |
| Harvel Plastics, Inc. | Quadrant Engineering Plastics | |

General Purpose Engineering Plastics

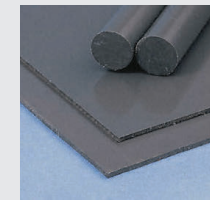
Nylon®



The exceptional bearing and wear properties of Nylon make it one of the most widely used plastics in the world. Nylon exhibits high tensile strength and modulus of elasticity as well as high impact resistance.

- High heat distortion temperature
- Can withstand contact with chemicals, alkalis, diluted acids or oxidizing agents
- Resists wear, abrasion, and vibration
- Available in 6 (cast) and 6/6 (extruded)

PVC – Type 1



PVC is the most widely used member of the vinyl family. PVC Sheets, Rods and Tubes offer excellent corrosion and weather resistance.

It has a high strength-to-weight ratio and is a good electrical and thermal insulator.

- Applications include chemical processing tanks, valves, fittings and piping systems
- May be used up to temperatures of 140°F (60°C)
- Self-extinguishing per UL flammability tests

Delrin® AF Blend – 13% PTFE



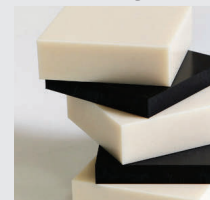
This blend is a unique thermoplastic material for use in moving parts in which low friction and long wear life are important. It is a combination of PTFE fibers uniformly dispersed in Delrin acetal resin.

combination of PTFE fibers uniformly dispersed in Delrin acetal resin.

- Also available in 20% PTFE on a custom order basis
- Excellent PV values
- Self-lubricating and low coefficient of friction
- Also consider Ertalyte® TX as a long-wear replacement

Professional Plastics is a family owned and operated plastics distribution company. Since our establishment in 1984, we have been focused on providing our customers with the best selection, service and pricing. Our expansive inventory has made us one of the largest suppliers of high-performance plastics in North America and Southeast Asia.

ABS – Engineering Grade

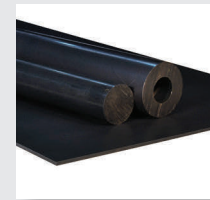


ABS has perhaps the best balance of properties when cost is a factor. It has good chemical and stress-resistance as well as a combination of toughness, rigidity and creep resistance.

toughness, rigidity and creep resistance.

- Easily machined with high impact strength
- Ideal for turning, drilling, milling, sawing, die-cutting and shearing
- Excellent abrasion resistance, electrical properties and moisture resistance
- Good chemical and stress cracking resistance to inorganic salt solutions, alkalis, acids and some oils

Nylatron® GS Nylon



Nylatron GS is a molybdenum disulfide (MoS₂) filled nylon offering improved strength and rigidity. Nylatron GS is extruded and

exhibits a high heat distortion temperature.

- Lower coefficient of linear thermal expansion than Nylon 101
- Nylatron GS parts maintain better fit and clearances and have less tendency to seize as bearings
- For thicker plates and large diameter rods, try Nylatron GSM (cast material)

Ertalyte® PET-P



Ertalyte® PET-P is unreinforced, semi-crystalline thermoplastic polyester characterized as having the best dimensional

stability. This is paired with excellent wear resistance, a low coefficient of friction, high strength, and resistance to moderately acidic solutions. Ertalyte® is capable of sustaining high loads and enduring wear conditions.

- Chemical and abrasion resistance
- Mechanical and electrical properties remain virtually unaffected by moisture
- High strength and rigidity – ideal for close tolerance parts

Turcite® A (Blue)



Turcite is a high-quality, internally lubricated material that is ideal for applications with demanding wear and friction requirements. Its

low water absorption enables components made with Turcite to retain their integrity over long periods. Turcite A is a resilient formulation that performs well under vibratory and dynamic loading.

- Economical, self-lubricating and long-wearing material
- Maximum continuous service temperature is 180°F
- Higher wear resistance than Turcite X

Acetal Copolymer and Delrin® Homopolymer



Acetal copolymer provides high strength and stiffness coupled with enhanced dimensional stability and ease of machining. As a

semi-crystalline material, acetal is also characterized by a low coefficient of friction and good wear properties especially in wet environments.

- Weight-saving metal replacement
- Acetal Copolymer is preferred to Delrin Homopolymer when centerline porosity is a concern

Polycarbonate – Machine Grade



Machine-grade polycarbonate is an amorphous thermoplastic material with high-impact strength, high modulus of

elasticity and good dimensional stability.

- Excellent choice for electrical/electronic applications
- Continuous use temperature to 290°F
- Good dielectric properties
- Economical thermal performance

Ertalyte® TX



Ertalyte TX is unreinforced semi-crystalline thermoplastic polyester (PET-P) that has a solid lubricant filler. The material has

excellent performance in both high-pressure and high-velocity conditions and is ideally suited for applications involving soft metal and plastic mating surfaces.

- FDA, USDA and 3A Dairy compliance
- Dimensional stability and Wear resistance
- High creep resistance
- Very good chemical resistance
- Low-friction characteristics
- Excellent replacement for Delrin® AF

Turcite® X (Red)



Turcite is a high-quality, internally lubricated material that is ideal for applications with demanding wear and friction requirements. Its

low water absorption enables components made with Turcite to retain their integrity over long periods.

- Excels in low load and high-speed applications
- Minimal hygroscopic characteristics.
- Very high PV rating
- Lower coefficient of friction than Turcite A

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*Not all sizes shown. For the most up to date information please inquire by phone.

Olefin-Based Industrial Plastics

HDPE



HDPE (high-density polyethylene) offers excellent impact resistance, low moisture absorption, high tensile strength and is light weight. HDPE is also non-toxic and non-staining.

- Excellent chemical resistance
- Resists organic solvents, degreasing agents and electrolytic attack
- Good fatigue and wear resistance
- Available as extruded or stress-relieved
- FDA and USDA certification for food processing

Polypropylene

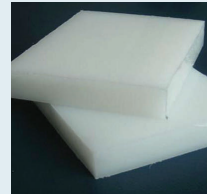


Polypropylene is noted for its excellent chemical resistance in corrosive environments. This polymer is easily welded and

machined. Homopolymer and copolymer grades, as well as, a popular heat-stabilized formulation, are used in various applications throughout the chemical and semiconductor industries.

- CP5, CP6 and CP7 are special flame-inhibiting grades

LDPE



LDPE (low-density polyethylene) is an economical plastic material with good chemical resistance. LDPE provides high impact strength at low temperatures.

It also exhibits excellent electrical properties.

- Excellent electrical properties
- Inexpensive
- Good chemical resistance
- High impact strength at low temperatures

UHMW-PE



UHMW offers a combination of excellent properties – outstanding abrasion resistance, superior impact resistance, non-sticking and

self-lubricating properties. UHMW reduces noise from impact and vibration.

- Chemical, corrosion, and wear-resistant
- Excellent mechanical properties, even in cryogenic conditions
- Available in several filled grades

TIVAR® Family of UHMW

TIVAR® 1000
TIVAR® 88
TIVAR® HOT

TIVAR® CeramP
TIVAR® DrySlide
and more

CP-7D FR PP



Flametec™ CP-7D is a proprietary designation for a flame retardant polypropylene formulation. CP-7D's flame retardant

characteristics meet or exceed the most rigorous FM 4910 testing standards for most aspects of flame retardation, self-extinguishing characteristics and burnthrough.

- Low smoke generation
- Minimal toxic by-products
- Superior surface aesthetics
- High gloss finish
- Bright white color
- Lightest weight FM 4910 listed material
- Easy to fabricate

Fluoropolymer Plastic Materials

FEP



FEP is a relatively soft thermoplastic with lower tensile strength, wear resistance, and creep resistance than many other engineering

plastics. FEP is chemically inert and has a low dielectric constant over a wide frequency range. FEP possesses a very high degree of stress crack resistance, a low coefficient of friction, exceptional dielectric properties and heat resistance.

- Excellent insulator
- Wide thermal range (-400°F to 400°F)
- High transparency, low refractive index, and low light reflection
- USFDA approved

Teflon® - PTFE Virgin Grade



PTFE is a fluorocarbon-based polymer that exhibits astonishing chemical resistance and ultra high-purity. PTFE has the lowest coefficient of

friction of any known material and is also self-lubricating.

- PTFE operates up to 500°F
- Excellent insulator
- Mechanical properties can be enhanced by adding fillers
- Used in semiconductor, aerospace, and chemical processing industries

PFA



PFA (PerFluoro Alkoxy) offers similar properties to FEP, but is considered more of a premium resin. PFA is preferred when extended

service is required in hostile environments. PFA offers high melt strength, stability at high processing temperatures, excellent crack and stress resistance and a low coefficient of friction.

- High temperature performance
- More than 10 times the flex life of FEP
- USP Class VI approved

Kel-F® - PCTFE

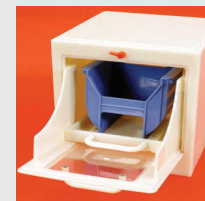


PCTFE (PolyChloro TriFluoroEthylene) is a fluorocarbon-based polymer. PCTFE offers the unique combination of physical and mechanical

properties, nonflammability, chemical resistance, near zero moisture absorption, and excellent electrical properties. These characteristics cannot be found in any other thermoplastic fluoropolymer with a useful temperature range of -400°F to +400°F.

- Extremely low outgassing
- Well suited for aerospace and flight applications

Halar® - ECTFE



ECTFE (a copolymer of ethylene and chlorotrifluoro ethylene) is a partially fluorinated semi-crystalline polymer offering a unique combination

of mechanical properties, thermal and chemical resistance with an outstanding ease of process ability. It is a very versatile polymer, available in all forms to meet processing needs.

- Excellent resistance to abrasion, harsh chemicals, and permeation
- Easier to fabricate than most fluoropolymers
- Meets FM 4910 approval from Factory Mutual

Tefzel® - ETFE



Tefzel ETFE provides both corrosion resistance and mechanical strength over a wide temperature range. The fluoroplastic family

offers plastics with high chemical resistance, low and high temperature capability, resistance to weathering, low friction, electrical and thermal insulation.

- Excellent abrasion resistance over a temperature range of -300°F to +300°F
- High purity performance
- Preferred material for HPLC applications

Fluorosint® HPV



FDA compliant Fluorosint HPV is a high performance bearing grade of Fluorosint optimized for high PV and very low "K" or wear factor.

Fluorosint HPV was developed for bearing applications where other, low-tech PTFE formulations exhibit premature wear or simply cannot perform.

- Excellent load bearing and wear characteristics
- Applications include thrust washers, wear guides, seals, and food processing and preparation equipment
- FDA compliant

Fluorosint® MT-01



Fluorosint MT-01 is an extreme grade of PTFE developed specifically for applications where the benefits of PTFE-based materials also

require strength, stiffness and stability. Fluorosint MT-01 delivers high mechanical performance at elevated temperatures and as a result is often specified in seat, seal and wear applications where extreme conditions are present.

- Excellent sealing material
- Continuous service temperatures up to 600°F

Kynar® 740



Kynar 740 is an engineering thermoplastic that offers the stable characteristics of a fluoropolymer, as well as mechanical strength, abrasion

resistance and high purity. PVDF can be used in the semiconductor, pulp and paper, and pharmaceutical industries, as well as for nuclear waste, and chemical and food processing.

- High purity/low extractables
- High abrasion resistance
- Excellent chemical resistance
- UV and radiation resistance
- FDA approved and USP Class VI compatible

Fluorosint® 207



Fluorosint 207's unmatched dimensional stability, excellent creep resistance and white color uniquely position 207 to serve FDA

regulated applications. It is non-permeable in steam and complies with the FDA's regulation 21 CFR 175.300.

- Continuous use temperatures to 500°F
- Chemical resistance parallels PTFE
- Excellent choice for aggressive service bearings and bushings

Fluorosint® 500



Fluorosint 500 has nine times greater resistance to deformation under load than unfilled PTFE. Its coefficient of linear thermal expansion

approaches the expansion rate of aluminum and is 1/5 that of PTFE — often eliminating fit and clearance problems. It is 1/3 harder than PTFE, has better wear characteristics and maintains low frictional properties.

- Continuous use temperatures to 500°F
- Most dimensionally stable PTFE-based product
- Non-abrasive to most mating materials

Call for Your Quote Today!

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High Performance Advanced Engineering Materials

Vespe[®] Polyimide SP-1, SP-21, SP-22, SP-211, SP-3



Vespe offers a broad combination of temperature resistance, chemical resistance, mechanical toughness, natural lubricity, wear-

resistance and insulation properties. Vespe SP-1 parts provide operating temperatures from cryogenic to 300°C (570°F), great plasma resistance, plus a UL rating for minimal electrical and thermal conductivity.

- Performs at continuous service to 570°F
- Does not melt at any temperature
- Ultra low outgassing and excellent wear properties

Meldin[®] Polyimide 7001, 7021, 7022, 7211, 7003

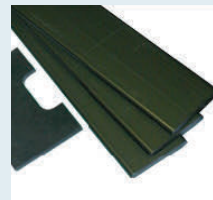


Meldin 7000 series polyimide shapes offer superior mechanical properties, high chemical resistance, is ideal for electrical and thermal

insulating applications, and is lighter weight than metals. In many applications, Meldin 7001 is an excellent replacement for Vespe SP-1.

- Continuous operational temperatures of 550°F (260°C)
- Does not melt at any temperature
- Self-lubricating properties
- Plasma etch rate is 10 to 20% lower than Vespe SP-1

Torlon[®] 4301

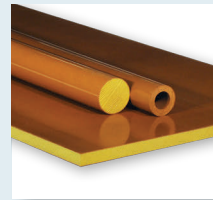


Torlon 4301 exhibits excellent wear resistance in bearing grades and is able to endure harsh thermal, chemical and stress conditions. The

addition of PTFE and graphite provides higher wear resistance and lower coefficient of friction compared to the unfilled grade.

- Continuous operational temperatures of 500°F (260°C)
- Very low coefficient of friction
- Excellent retention of mechanical strength and stiffness over a wide temperature range

Torlon[®] 4203



Torlon 4203 PAI offers excellent compressive strength and the highest elongation of the Torlon grades. It also provides electrical insulation

and exceptional impact strength. This Torlon grade is commonly used for IC Test Sockets and Handlers as well as electrical connectors and insulators.

- Very high compressive and impact strength
- Tremendous insulation properties and high dielectric strength
- Note: Torlon is now available in large diameter extruded tubes!

Torlon[®] 5530

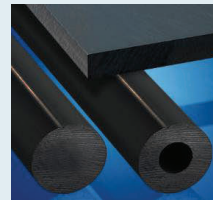


Torlon 5530 is a 30% glass-reinforced PAI. It is ideal for higher load structural or electronic applications. This grade is similar in

composition to Torlon 5030 PAI. It is selected for larger shapes or when the greatest degree of dimensional control is required.

- Best-in-class radiation resistance withstanding exposure to 10 x 9th rads
- Perfect for IC Test Sockets, Nests and Handlers

Celazole[®] PBI



Celazole PBI is the highest performance engineering thermoplastic available today. Celazole PBI has better wear

resistance and load carrying capabilities at extreme temperatures than any other reinforced or unreinforced engineering plastic.

- Highest heat deflection temperature 800°F (427°C), continuous service capability of 750°F (399°C) in inert environments, short term exposure potential to 1,000°F (538°C)
- Lowest coefficient of thermal expansion and highest compressive strength of all unfilled plastics

Ultem[®] 1000 Polyetherimide

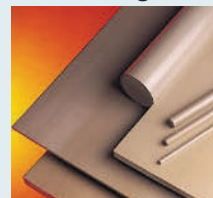


Ultem 1000 (standard, unfilled polyetherimide) offers excellent chemical resistance, high dielectric strength, natural flame resistance

and extremely low smoke generation. Ultem's exceptionally high mechanical properties and ease of fabrication, including bonding, make it an easy choice when exceptional performance is required.

- High strength and performs in continuous use to 340°F (170°C)
- 94-V-0 rated with low smoke KPSI
- Also available in glass-filled

PEEK - Virgin Grade



PEEK grades offer chemical and water resistance similar to PPS (PolyPhenylene Sulfide), but can operate at higher temperatures continuously to

480°F (250°C). PEEK carries a V-0 flammability rating and exhibits very low smoke and toxic gas emission when exposed to flame.

- Inherently good wear and abrasion resistance
- Unaffected by continuous exposure to hot water or steam
- Available in Vestakeep[®] PEEK produced exclusively by Evonik Degussa

Techtron[®] PPS



Techtron PPS offers the broadest performance to chemicals of any advanced engineering plastic. Minimal moisture absorption and a

very low coefficient of linear thermal expansion, combined with stress-relieving manufacturing, make PPS ideally suited for precise tolerance machined components.

- Excellent chemical resistance
- Essentially zero moisture absorption
- Machines to tight tolerances
- Excellent alternative to PEEK at lower temperatures
- Commonly used as PPS Retainer Rings in CMP Machines

Macor[®] Machinable Glass Ceramic



Unlike other ceramics, Macor can be machined with ordinary metalworking tools. Macor is also a problem solving material combining

the performance of a technical ceramic with the versatility of a high performance plastic. Macor has no porosity and when properly baked out, will not outgas.

- Ultra high temperature performance (800°C continuous - 1,000°C peak)
- Low thermal conductivity and an excellent insulator
- No porosity and will not outgas

CeramaPEEK[®] NC30



CeramaPEEK NC30 is an advanced ceramic-filled PEEK compound created to meet the requirements for tight tolerance, high frequency IC chip

socket test fixtures. Unlike injection-molded competitors, this extruded material is available in large 24x48 void-free sheets.

- Machinable to very tight tolerances
- Good Abrasion Resistance and Ductility
- Very stable electrical properties
- Void-free material
- Large plates for high yield

Static Controlled Materials (ESd & Conductive)

Semitron[®] ESd 420 (ESd Ultem[®])



The only, truly dissipative plastic product for use in high temperature applications. ESd 420 combines: static dissipation, low coefficient of expansion, high strength, heat resistance and is non-sloughing. This material has a tensile modulus of 550,000 psi, a heat deflection temperature (at 264 psi) of 420°F.

- Surface resistivity in the range of 10⁶ to 10⁹ Ω/sq
- Low coefficient of thermal expansion
- Very low residual stresses and as a result can be machined very flat and to very tight tolerances

Semitron[®] ESd 225 - Acetal



Semitron ESd 225 is inherently dissipative and electrically stable unlike many other "dissipative" plastic shapes. It does not rely on atmospheric

phenomena to activate nor are surface treatments used to achieve dissipation. Static electricity is dissipated through ESd 225 as readily as it is dissipated along the surface.

- Surface resistivity of 10⁹ to 10¹⁰ Ω/sq
- Maximum operating temperature is 190°F (82°C)
- Ideal for fixturing used in the manufacturing of hard disk drives

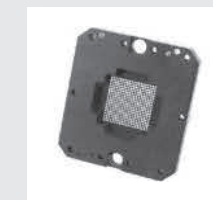
Tivar[®] 1000 EC (Conductive)



Tivar 1000 EC is a PE-UHMW grade containing specific additives rendering this material a lower surface resistivity than TIVAR 1000 ESD, improving electrical conductivity and UV-resistance.

- Very good wear and abrasion resistance
- High impact strength, even at low temperatures (particularly PE-UHMW)
- Excellent chemical resistance
- Low density compared with other thermoplastics
- Low coefficient of friction
- Excellent release properties
- Very low water absorption

Semitron[®] ESd 410C - Conductive Ultem[®]



Semitron ESd 410C (black) – Static Dissipative/Conductive PEI (aka ESd Ultem). Having an excellent mechanical performance up to

210°C, Semitron ESd 410 also provides ESd solutions at higher temperatures.

- Inherently static dissipative
- Does not contain carbon or graphite powder to provide electrostatic dissipation, sloughing is not a problem
- Surface resistivity of 10⁴ to 10⁶ Ω/sq

Semitron[®] ESd 520HR - ESd PAI



Semitron ESd 520HR has electrostatic dissipation (ESd), high strength and heat resistance. This new ESd material is ideal for

making nests, sockets and contactors for test equipment and other device handling components. The key feature of 520HR is its unique ability to resist dielectric breakdown at high voltages (>100V).

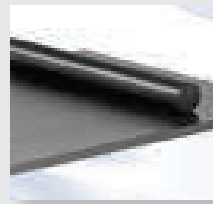
- Surface resistivity of 10¹⁰ to 10¹² Ω/sq
- High temperature range
- Extremely stable
- Can be machined to extremely tight tolerances

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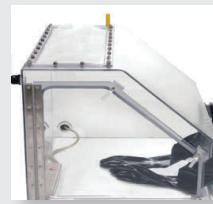
Tivar® 1000 ESD UHMW



Tivar 1000 ESD AntiStat UHMW is an ideal material to use when potentially volatile conditions exist, such as those in grain elevators and munitions plants, effectively safeguarding against static discharges.

- Surface resistivity range of 10^5 to 10^9 Ω /sq
- Reduces noise
- Self-lubricating
- Corrosion-resistant
- No moisture absorption
- Used in non-FDA applications

CPVC-300™ ESd FM 4910 Sheet



CPVC-300 ESd FM 4910 is a plastic sheet product that controls static electricity in clean room applications requiring flame retardant clear plastic. This product has a static dissipative coating to prevent charge generation on the sheet surfaces.

plastic. This product has a static dissipative coating to prevent charge generation on the sheet surfaces.

- Good clarity and transparency
- ESd protection
- FM-4910 compliant
- Excellent flammability and smoke generation properties
- Superior chemical resistance, surface hardness and mar resistance

PC-300 ESd Polycarbonate Sheet



A plastic sheet product that controls static electricity for many applications, including windows, doors, mini-environment glazing

panels, and machine guards, covers and enclosures. PC-300 is a premium quality polycarbonate sheet coated with SciCron Technologies proprietary, clear, C-300™ static dissipative coating which prevents charge generation on the sheet surfaces.

- Light-weight
- Has superior impact resistance and flame-spread properties
- Excellent clarity
- Also available in PC-350 bending grade

Royalstat® R63 Conductive ABS/PVC



Royalstat R63 is a unique ABS/PVC sheet product that is both electrically conductive and fire rated. R63 meets the minimum static decay requirements

outlined in MIL-B-81705C and NFPA Code 99 Specifications.

- Permanent static protection against electrostatic damage to sensitive devices being assembled or transported
- Suitable for IC chip carriers, trays, dividers, toe boxes and storage bins
- Fire Rated

AC-300™ ESd Acrylic Sheet



AC-300 Acrylic is a premium quality acrylic sheet product that controls static electricity in many applications, including windows,

doors, machine covers and enclosures, and fabricated desiccators and cabinets. It is coated with SciCron Technologies' clear, C-300™ static dissipative coating which prevents charge generation on the sheet surfaces.

- Prevents electrostatic discharge (ESd) completely independent of humidity
- Excellent optical properties, chemical resistance, surface hardness and mar resistance
- Also available in AC-350 bending grade

Pomalloy® ESd Acetal



Pomalloy ESd is a static-dissipative acetal copolymer (POM SD). This non-carbon-filled, permanently static dissipative material is non-migratory

and non-humidity dependent. With enhanced lubricity, Pomalloy ESd provides superior wear resistance and ease of machining.

- Low outgassing
- Consistent resistivity values
- Ease of machining
- Good chemical resistance
- Commonly used in ESd disk drive components

Thermoset and Composite Materials

G-10/FR-4



G-10/FR-4 is a thermosetting industrial laminate consisting of a continuous filament glass cloth material with an epoxy resin binder. This material

is both chemical and moisture resistant and provides superior electrical properties.

- High strength
- Excellent dimensional stability
- Outstanding insulating properties
- Meets Mil-I-24768/27

G-11



G-11 Glass Epoxy Laminate is produced in high-temperature, laminated, glass-cloth sheets, as well as, precision-ground

rods and rolled and molded tubes. G-11 exhibits high mechanical strength at temperatures up to 150°C and retains 50% of its flexural strength at elevated temperatures.

- Self extinguishing
- G-11 is non-brominated
- Meets Mil-I-24768/3

Phenolic - Grade CE



Canvas Electrical Grade Phenolic exhibit good mechanical and impact strength with continuous operating temperature of 250°F.

- Durable and stable material at an economical price
- Good insulation properties
- Meets Mil-I-24768/14, LP 509, MIL P 15035 and Type FBG

Phenolic - Grade LE

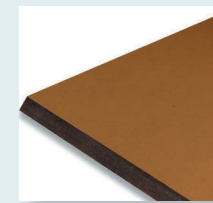


Linen Electrical Grade Phenolic provides good mechanical and electrical strength. This material is recommended for intricate high

strength parts and has a continuous operating temperature of 250°F.

- Excellent insulation properties
- Moisture resistant for electrical applications
- Meets Mil-I-24768/13, LP 509, MIL P 15035 and Type FBE

Phenolic - Grade X Paper



X-Grade Paper Phenolic is manufactured from high strength paper bonded with a phenolic resin. The resulting material is a tough laminate with a high impact

resistance, excellent tensile, compressive and flexural strengths.

- Continuous operating temperature of 250°F
- Great for Tooling Plates used in the production of printed circuit boards
- Perfect for stable, high-strength tabletops on routers and fabricating equipment
- Meets Mil-I-24768/12 and LP 509

Micarta ShotBlocker®



ShotBlocker is a specialty line of ballistic resistant panels, tubes, pre-pregs and molded shapes. These high performance

composite products are resistant to projectiles, heat and fire and protects from ricocheting slugs or fragments, making it suitable for most military threats, including blast protection, EFP protection and IED protection.

- Protects components against heat and electrostatic discharge
- Increases productivity and stability
- Reduces size of carriers

Durostone®



Durostone wave solder pallet materials have excellent mechanical properties at elevated temperatures.

These products have become the industry standard for the production of wave solder pallets used in the printed circuit board industry.

- Can be machined to tight tolerances
- Retains flatness through repeated cycling in the PCB assembly process
- Low thermal conductivity
- Resistance to the chemicals used in fluxes

Glastic CBC, CBC-C and NBC



Glastic solder pallet materials are lightweight, with dimensional stability, flatness, thermal shock resistance and chemical resistance.

This makes the materials ideal for products hostile environments.

- CBC is non conductive
- CBC-C is electrical static safe semi-conductive
- NBC is optically sense-able without compromising electric static discharge safety

GPO-3

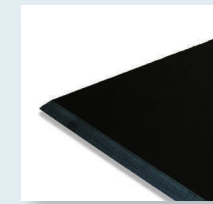


GPO-3 laminate performs well in electrical applications that require high arc and carbon track resistance as well as flame resistance,

physical strength, and moderate heat resistance. Grade GPO-3 laminate is used extensively in the making of phase and end barriers, insulating supports, bus bar supports and mounting panels in switchgear and other types of electrical apparatus.

- UL recognized product
- Produced in three standard colors: red, black and white
- Meets Mil-I-24768/6

WaveMax 8000

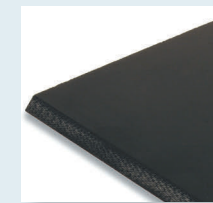


WaveMax® 8000 Solder Pallet Material is a woven glass fabric combined with a high temperature static dissipative epoxy resin. It was

designed for wave soldering and IR re-flow applications, so it can endure temperatures approaching 300°C for short periods of time, without adversely affecting the life of the material.

- Uniform ESd properties
- Superior machining capabilities
- Designed for wave soldering and IR re-flow applications

StatNot™ MC511SN



StatNot MC511SN is a composite consisting of woven glass and a static-dissipative epoxy resin system. This material is used when static

dissipation is required from surface to surface of the composite in the X, Y and Z directions.

- Slot filler material in structural applications
- Used in PCB test fixtures and tabletops used for testing and repair of military electronics
- Surface resistivity of 1.5×10^7 Ω /sq

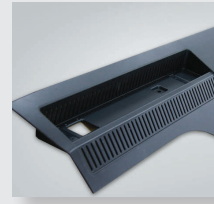
Call for Your Quote Today!

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*Not all sizes shown. For the most up to date information please inquire by phone.

Forming Grade Materials

Royalite® R59



Royalite R-59 sheets pressure form extremely well and are engineered for applications such as medical, telecommunication and electronic

equipment housings. Combining high impact and tensile strength with excellent ductility and thermoformability has made R59 the material of choice for a wide array of applications requiring a fire rated material.

- UL94 5VA rated
- Fire-rated ABS sheet
- Excellent forming properties
- High impact and tensile strength

ABS - Forming Grade (General Purpose)



Offered in a wide range of colors and grades. Sheets are produced in monolayer and co-extruded multilayer ABS (Acrylonitrile-

Butadiene-Styrene) products. Combinations of 100% customer color virgin, virgin cap/utility base, low gloss (matte) cap/utility base and custom color cap/utility base are available.

- End uses of ABS Sheet include tub/shower surrounds, pickup truck caps, boat accessories, automotive trim parts, and computer housings

ABS FR - Forming Grade (Flame Retardant)



Certain grades of ABS sheet are formulated to meet the smoke and fire specifications recommended by the Federal Transit Administration

(formerly UMTA) to consistently meet guidelines for flammability and smoke emission as measured by ASTM E-162 and ASTM E-662.

- Meets UL ratings of UL94V-0 or greater
- Flame resistance
- Impact resistance
- Easily fabricated

Kydex 100® Sheet



KYDEX 100 high-impact fire rated sheet is aircraft approved. Super tough and durable, it is a proprietary alloy sheet that brings

new dimensions to thermoformers in formability, rigidity, breakage resistance, chemical resistance and fire retardancy.

- For deep or hard to form parts or where good finished detail is required
- More rigid than most other thermoplastics
- Meets the highest standard for chemical resistance for thermoplastic materials

High-Impact Polystyrene - HIPS



This material has great dimensional strength, balanced properties of impact strength and heat resistance, is easily machined and is relatively low in cost.

- Economical
- Easy Formability
- Durability to temperatures as low as -20°F
- Sterilization by ETO, gamma or electron beam
- No corrosive or noxious fumes
- 100% recyclable
- Available in prime and reprocessed Grades

PETG



PETG co-polyester sheet is a thermoplastic sheet used in engineering applications. PETG offers the capability to produce complex shapes, precise

details, deep draws and compound curves without worrying about durability. It brings increased design freedom and lower fabrication costs.

- High impact strength and fabrication ease
- Good clarity
- Easily formed, die-cut and punched

Boltaron® 6800



Boltaron 6800 sheet is ABS/PVC alloy press-laminated flame resistant material. It is developed specifically in adherence with

aviation seat manufacturers' stringent requirements. Boltaron 6800 exhibits such characteristics as good hot tear strength, accurate reproduction of mold detail, deep draw without distortion, minimal moisture and a wide forming range.

- Flame resistance
- Good hot tear strength
- Accurate mold detail

Other Thermoforming Materials

- Acrylic
 - Acrylite®
 - Lucite®
- Polycarbonate
 - Makrolon®
 - Lexan®
- HDPE
- LDPE
- Expanded PVC
- Komatex®

Note: Royalite®, Kydex® and Boltaron® are available in more than two dozen grades. Visit our website for more details.

Fluid Handling and Tubing Products

PFA Tubing



PFA (PerFluoroAlkoxy) tubing offers similar properties to FEP, but is considered more of a premium resin. PFA is preferred when

extended service is required in hostile environments involving chemical, thermal, and mechanical stress.

- High resistance to creep, cracks, and stress
- High melt strength, low coefficient of friction
- 10 times the flex life of FEP
- USP Class VI approved, meets FDA 21CFR.177.1550

Tygon® E-3603 Laboratory Tubing



Tygon E-3603 is a DEHP free replacement to R-3603. E-3603 laboratory tubing is specially formulated for resistance to flex fatigue and

abrasion, handles virtually all inorganic chemicals found in the lab and is less permeable than rubber tubing. Tygon E-3603 vacuum tubing shares all these performance features and has extra heavy walls that will withstand a full vacuum at room temperature.

- Glassy-smooth inner bore helps prevent buildup to facilitate cleaning
- Contains no BPA
- DEHP free

Tygon® B-44-3 Beverage Tubing

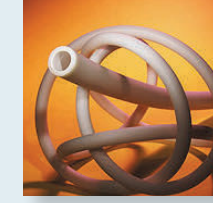


Tygon® B-44-3 beverage tubing is specially formulated for transferring a wide variety of beverages. In nearly all cases, this tubing will not affect the

taste or odor of product transferred through it, while its excellent non-wetting properties facilitate complete drainage and permit simple flush-cleaning.

- Broad chemical resistance to virtually all non-solvent chemicals
- Lightweight and flexible for easy, quick installation
- Today's most widely specified clear, flexible plastic tubing
- Meets FDA, 3-A and NSF criteria

PharmaPure® Tubing

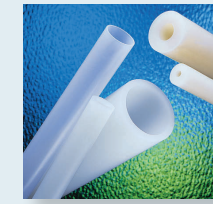


PharmaPure is a premium, peristaltic pump tubing that is developed especially for pharmaceutical, biotechnology and laboratory applications. This

tubing meets the demanding challenges of providing unsurpassed pump life, with ultra-low particulate spallation and very low permeability. It is ideal for protecting sensitive cell cultures, fermentation, separation, purification, process monitoring and sterile filling.

- Reduces production downtime due to pump tubing failures
- Autoclavable and sterilizable
- Meets all USP Class VI and FDA criteria

PVDF/Kynar® Tubing

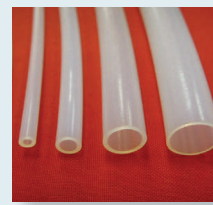


Kynar 740 PVDF is an engineering thermoplastic that offers the stable characteristics of a fluoropolymer, as well as mechanical strength, abrasion

resistance and high purity.

- Used in semiconductor, pulp and paper, pharmaceutical, chemical and food processing industries
- Excellent chemical resistance, UV resistance and radiation resistance
- FDA approved, USP Class VI compatible
- Meets ASTM D3222

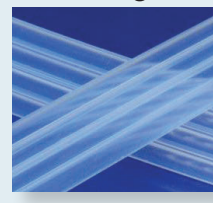
Teflon® - PTFE Tubing



Teflon tubing provides the ultimate in lubricity, high temperature use, chemical resistance, biocompatibility and precision extruded tolerances.

- Working temperature range of 500°F to -454°F
- Chemically resistant
- Chemically inert, low extractables and excellent dielectric insulation properties

FEP Tubing



FEP (Fluorinated Ethylene Propylene) tubing is made from a melt processable thermoplastic that has end uses similar to PTFE. FEP is one of the

clearest plastics available on the market and FEP tubing can be supplied in long, continuous coils. Also, it can be welded and tubes can be sealed by melting.

- Chemical and corrosion resistance
- Easy to clean
- Will not absorb moisture
- USP Class VI and FDA approved

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High Performance Films

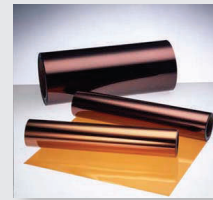
PEEK Film - Crystalline



Crystalline PEEK is a high performance semi-crystalline thermoplastic that offers an outstanding range of physical, thermal, chemical and radiological properties. PEEK meets many aerospace, automotive, fire, smoke and toxicity, food/water, medical/pharmaceutical and military approvals and standards.

- High temperature performance
- Excellent wear properties and chemical resistance
- Hydrolytic stability and outstanding toughness and strength

Kapton® Polyimide Film



Kapton® film from DuPont has more than 35 years of proven performance as the flexible material of choice in applications involving very high or very low temperatures. Kapton polyimide film possesses a unique combination of properties that make it ideal for a variety of applications in many different industries.

- High temperature resistance
- Excellent insulator
- Used for printed circuits, transformer insulation and bar code labels

Kaptrex® Polyimide Film



This high performance polyimide film provides similar high performance solutions as offered by Kapton but at a more economical

price. This film has an excellent balance of electrical, mechanical, thermal and chemical properties over a wide range of temperatures.

- Excellent dielectric strength and dissipation factor
- Resistance to high temperatures and radiation
- Suitable for "H" class electrical machines and appliances

Ultem® PEI Film



Polyetherimides are amorphous thermoplastics whose chemical structure is based on repeating aromatic imide units. Thermoplastic polyimides are linear in structure without crosslinks.

- High rigidity and strength
- Inert to flame
- Used in flexible circuits, electrical insulation and speaker cones

Kynar® PVDF Film



Kynar PVDF Film is both strong and tough as reflected by its tensile properties and impact strength. Compared to many thermoplastics,

PVDF Film has excellent resistance to creep and fatigue. The thin film makes PVDF components flexible and transparent.

- Stable to UV and effects of weather
- Low NBS smoke generation
- Excellent transmittance of solar energy
- Can be bonded to a variety of substrates

Makrofol® Polycarbonate Film



Polycarbonate films are available in a wide variety of surface textures including glass-clear with both sides gloss. All films use Bayer Makrolon®

polycarbonate resin.

- High light transmittance
- Excellent surface uniformity
- Ease of processing

ABF-300™ ESd Control Film



ABF-300 ESD Control Film composite is a clear, adhesive-backed film product designed to control static electricity for a wide range of end

uses. Suitable for application on smooth, flat, non-porous surfaces, it is a high tensile, high tear strength polyester film surfaced with SciCron Technologies proprietary, clear, C-300™ static dissipative coating.

- High shear strength
- Pressure sensitive
- Excellent clarity

FEP Film



FEP films are fluoropolymer-based films that benefit from the ability to be thermoformed, heat-sealed, plastic-welded or bonded. FEP films

possess superior anti-stick, low friction properties, as well as high dielectric strength (over 7000 volts per mil for 1 mil).

- Most chemically inert of all plastics
- Withstands both high- and low-temperature extremes
- Outstanding weather resistance
- Excellent optical characteristics
- Superior electrical properties

Cleanroom Materials Flammability Test Protocol (Class 4910)



As computer chips get smaller and faster, the manufacturing process required to create them gets more and more complex—even the slightest delay in production can mean millions of dollars in lost revenue. One of the major causes of delay in the chip manufacturing process is contamination. Contamination from a fire, no matter how small, could potentially put a chip maker out of business for weeks, if not permanently. In the past, cleanrooms and wet benches needed to be protected by sprinklers or more expensive special fire-protection systems. But, by the time a cleanroom fire propagated and triggered a sprinkler or special fire protection system, damage could already have occurred in the rest of the cleanroom. Driven by rising insurance costs and potential lost earnings, chip makers are requiring suppliers to use materials in wet-bench fabrication that are less flammable and therefore don't need additional—and costly—fire protection systems installed. The Cleanroom Materials Flammability Test Protocol (Class 4910) contains the method for conduct-

ing tests. Now, wet-bench manufacturers and users can apply the cleanroom protocol to develop plastic materials and equipment capable of resisting fire, emitting little, if any smoke, and producing little, if any, corrosive by-products. Materials passing the cleanroom protocol, subsequently, can be listed in the Approval Guide, a publication of FM Approvals.

Medical Grade Materials



Sustason® PPSU MG
(Radel® R5500)

- Excellent thermal stability
- High impact resistance
- Resistance to repeated autoclaving
- Resistance to hydrolysis

CERTIFICATIONS:

ASTM D6394
FDA compliant
USP Class VI
ISO 10993 compliant



SustaPEEK® MG

- Continuous use temperature of 480°F
- Outstanding dimensional stability
- High chemical resistance
- Excellent resistance to sterilization

CERTIFICATIONS:

ASTM D6262
FDA compliant
USP Class VI
ISO 10993-5 compliant

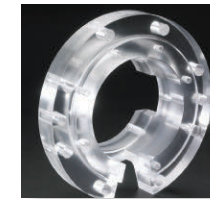


Sustarin® C MG Acetal
(Celcon® M25)

- Excellent dimensional stability
- Easy to machine to close tolerances
- Porosity free
- Available in multiple colors

CERTIFICATIONS:

ASTM D6100
FDA 21 CFR 177.2470
USP Class VI
ISO 10993-5 compliant

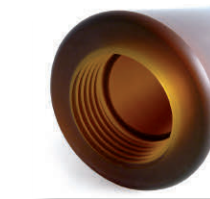


Sustanat® PC MG
(Polycarbonate)

- Continuous use temperature of 250°F
- Easy to machine to close tolerances
- High impact strength
- Good electrical insulation

CERTIFICATIONS:

ASTM D6096 PC 0111
ASTM D3935 PC 0111
Natural meets FDA 21 CFR 177.1582
USP Class VI



SustaPEI® MG
(Ultem® HU1000)

- Strength and modulus at elevated temperatures
- Inherent flame resistance
- Gamma radiation resistance
- Excellent resistance to steam sterilization

CERTIFICATIONS:

ASTM D5205
FDA 21 CFR 177.1595
USP Class VI
ISO 10993 compliant



Polystone® P MG
(Heat Stabilized Polypropylene®)

- Excellent dimensional stability
- Resistant to steam autoclaving
- Laser markable
- Low moisture absorption

CERTIFICATIONS:

USP Class VI
FDA compliant



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Transparent Materials

Acrylic

Acrylic is an amorphous thermoplastic which is optically transparent, unaffected by moisture, and offers a high strength-to-weight ratio. Acrylic offers high light transmittance and can be easily heat-formed without loss of optical clarity. Prolonged exposure to moisture, or even total immersion in water, does not significantly effect the mechanical or optical properties of this outstanding economical and multi-purpose material. Cast acrylic is 17 times stronger than glass and is easily machined and thermoformed.



General Purpose Acrylic

ACRYLITE® GP acrylic sheet is cell-cast sheet made to exacting standards, offering excellent optical characteristics, light stability and low internal stress levels for consistent performance. ACRYLITE GP sheet is available in a wide range of standard sizes and thicknesses at low minimum order quantities.

With ACRYLITE GP sheet, CYRO can match any custom color providing designers with unlimited options to achieve distinctive and dramatic effects, especially when combined with creative lighting strategies.



ACRYLITE® Crystal Ice

ACRYLITE Crystal Ice acrylic sheet is continuously manufactured with a cool frosted finish that diffuses light to enhance your design options and backlit applications. Its textured surface resists fingerprints and is easy to clean.

Available In four translucent colors – colorless, glass green, blue and white as well as opaque black – Crystal Ice has the appearance of etched glass and is a beautiful choice for displays, store fixtures, partitions and wall panels.

Available Types of Acrylic

- | | |
|-----------------------|-------------------------|
| Sheet, Rod and Tube | Static Dissipative |
| Optical (for display) | Extruded and Cast |
| Mirror | Designer Pattern's |
| High Impact Resistant | Heat Stop/IR Reflective |
| Satin-Texture | LED/Light Diffusing |
| Solar | Light Guide |
| Non-Glare | Micro Ban Resistant |
| Textured | Edge Glow |
| Aerospace grade | Museum Grade |
| Abrasion Resistant | Plexiglas |
| Corrugated | Acrylite |
| Frosted | Prismatic |
| Edge Lit | MIL-P-5425 |
| General Purpose | MIL-P-8184 |
| UV Transmitting | |
| UV Filtering | |
| Sign Grade | |
| Bullet Resistant | |
| Framing Grade | |

Polycarbonate

Polycarbonate sheet (aka Lexan®, Makrolon®) glazing offers superior durability, unmatched design flexibility and structural integrity that easily surpasses laminated glass and acrylic alternatives. Polycarbonate offers excellent impact resistance, clarity and electrical properties. It is UV resistant and is available in a number of different grades.



Abrasion Resistant Polycarbonate

Polycarbonate AR Sheet and Makrolon® AR Abrasion-Resistant Polycarbonate Sheet offers glasslike surface hardness and the impact strength of polycarbonate. With enhanced UV resistance to protect against yellowing and hazing, Makrolon AR provides a longer service life for high-profile architectural glazing, and performs extremely well for other flat applications such as view windows and machine guards in harsh chemical environments.



ProLens®-6X Aircraft Dust Cover

This aircraft interior window cover material from Professional Plastics is an advanced, flame-resistant, low-smoke material that meets FAA burn certifications FAR 25.853 (a) & (b). This material is also mar-resistant and is available in sheet thicknesses from .059" to .125" thick. Perfect for embedded window shade systems on high-end commercial and business jets. ProLens is available in clear or blue Polystick protective masking as standard on both sides (as extruded) of each sheet.

Available Types of Polycarbonate

- | | |
|-----------------------|---------------------|
| Textured | Aircraft Grade |
| Flame Inhibiting | Dust Covers |
| UV Resistant | Aircraft Mirror |
| Sign Reels | Clear and Colors |
| LED / Light Diffusing | Sheet and Film |
| Abrasion Resistant | FDA Grade |
| Static Dissipative | Food Grade |
| High Optical Clarity | Lexan |
| Transportation Grade | Makrolon |
| Machine Grade | MAK15 |
| Window Grade | Multiwall |
| Face Shield Welding | Corrugated |
| (IR and UV Blocking) | Prismatic |
| Automotive Laminate | Bayblend |
| Bullet Resistant | Hurricane Resistant |
| Containment Grade | |

We are proud to offer the complete line of Sheffield Makrolon products.

PETG Sheets

PETG / Spectar® Co-polyester sheet is a thermoplastic sheet used in engineering applications. PETG offers the capability to produce complex shapes, precise details, deep draws and compound curves without worrying about durability. It's easily formed, die-cut and punched. It brings increased design freedom and lower fabrication costs. In sheet form, PETG has the impact strength and fabrication ease that acrylic can't touch, with the durability to significantly reduce packaging and shipping costs.



PETG - POP Display



PETG Mirror

Available Types of PETG Sheets

- Clear and Colors
- FDA Grade
- UV Grades
- Sign Grades
- Lenticular
- Sheet and Film

Brands Offered

Acrylite®

Lucite®

Fabback®

Lexan®

SciCron®

Optix®

Makrolon®

Vivak®

Visit our website to search or place an order from our inventory of **over 500 products**

www.professionalplastics.com

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