











PROFESSIONAL PLASTICS, INC.

The Nation's Largest Supplier of High-Performance Engineering Materials

Plastic Materials Used in Food Processing Equipment & Material Handling





Since our establishment in 1984, Professional Plastics has been a family owned and operated company focused on providing our customers the best selection, prices and service in North America.

While we've grown our engineering plastics operation into over a dozen full-scale stocking locations throughout the US, our commitment hasn't changed. Today, Professional Plastics supplies the widest range of engineering plastics in the industry.

Our expansive inventory, competitive prices and exceptional customer service has helped us become the largest supplier of highperformance plastic shapes in North America.

Professional Plastics is focused on supplying our customers with cost-efficient solutions to their most challenging requirements. We are committed to offering the broadest range of products and services to drive value through all stages of the supply channel.

General Purpose Engineering Plastics



Acetal Copolymer (Acetron ® GP) & Acetal Homopolymer (Delrin ®)

Acetal 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. Because of its high strength, modulus, and resistance to impact and fatigue, Acetal is used as a weight-saving metal replacement.

Acetron® GP Copolymer acetal is preferred to Delrin where centerline porosity is concerned.



Acetron® GP FDA Colors

Acetron® GP FDA Colors is a new FDA-Compliant Colored Acetal. Improved process technology now allows for seven standard FDA-compliant colors of Acetron® GP acetal rod. Acetron® GP colors meet the requirements of FDA Regulation 21 CFR, Section 177.2470 (e)(1),(2). The colors are ideal where changeout parts need to be quickly and easily identified for use on specific processes. Acetron® GP, in red, blue, green, yellow, orange, gray and brown, is available within 3-4 weeks from date of order, in quantities of about 200 lbs per size and color, depending on diameter. Sample discs are available for specification purposes. The colors are strictly intended for industrial, pharmaceutical and food-related applications.



Ertalyte® PET-P

Ertalyte® PET-P is an unreinforced, semi-crystalline thermoplastic polyester characterized as having the best dimensional stability coupled 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. Ertalyte® PET-P offers good chemical and abrasion resistance. Its low moisture absorption enables mechanical and electrical properties to remain virtually unaffected by moisture.



Ertalyte® TX

Ertalyte® TX rod for machining high-wear-resistant parts is an unreinforced semi-crystalline thermoplastic polyester (PET-P) that has a solid lubricant filler. The material has excellent performance in both highpressure and high-velocity conditions, and is ideally suited for applications involving soft metal and plastic mating surfaces. High strength and stiffness, high wear-resistance, very good dimensional stability, high creep resistance and very good chemical resistance. This combination of properties make Ertalyte TX an ideal material for machining bushings and bearings that require no startup or running lubrication. Ertalyte TX has FDA and USDA compliance and is ideal for applications in food packaging and processing equipment.



MC907 ® - Food Grade Nylon

Unmodified type 6 nylon offering the highest strength and hardness of the nylon 6 grades. MC 907 is monocast and is available in dozens of sizes in Tube, Rod, Bar, Plate & Sheet forms. MC 907 natural is FDA, USDA and 3A-Dairy compliant. This material is off-white and primarily used for food contact parts.



Nylatron® LFG (Lubricated Food Grade)

Nylatron® LFG (Lubricated Food Grade) - Available in Natural (Ivory) or Blue (PA 6 + oil) NYLATRON LFG (Lubricated Food Grade) is self-lubricating in the real meaning of the word, and has a FDA food contact compliant composition. NYLATRON LFG has been specially developed for non-lubricated, highly loaded and slowly moving parts in food contact applications. Compared to standard cast nylons, it offers lower maintenance costs and longer service life.

















Polystone® M MDT

Polystone® M MDT - metal detectable UHMW-PE for food-processing & packaging machinery Food processors face the ever present risk of contamination finding its way into their product. The risks and potential financial losses can be significant if not detected early. The unique additives in this product allow it to be easily traced by standard metal detectors while continuing to provide the outstanding wear-resistance and sliding properties you would expect from . Designed to replace machined parts made from steel and lower performing plastics, this engineering polymer has high-impact strength, is easily machined and has no moisture absorption. Polystone M MDT complies with FDA regulations concerning direct contact with food. Every food processor that utilizes metal detectors in their processing or ® packaging operations can easily realize the advantages of Polystone M MDT.

Applications: - Wear-Strips, Pillow Blocks, Guides, Sprockets, Bushings & Bearings, Scraper Blades, Chain Guides & Tracks, Gears, Mixer Components

Sustadur® PBT

SUSTADUR PBT (polybutylene terephthalate) offers similar mechanical properties to acetal, however a higher maximum continuous operating temperature and improved chemical resistance makes it an excellent choice in food processing applications that require chemical or steam sanitizing.

- Continuous use temperature of 230 F Optimum toughness & Better for intricate machining
- Higher impact strength than PET Meets ASTM D6261 FDA Compliant

Unilate® PBT

Unilate® PBT is a semi-crystalline polybutylene terephthalate that offers excellent strength, rigidity and machinability. Due to its superior chemical resistance, toughness and food contact approvals, Unilate is an excellent material for use in wet and dry food processing applications. For high speed wear applications, an internally lubricated grade, Unilate Lf is available. This material offers 225°F Continuous Use Temperature, coupled with chemical resistance to chlorine, caustic and acidic cleaning solutions (pH resistance from 2.0 to 9.0). Additionally, the butylene component of this product give it improved toughness and impact resistance when compared to PET. With extremely low moisture absorption (0.08%/24 hr water immersion), Unilate PBT has improved dimensional stability for close tolerance parts and high resistance to staining from cleansers or food sauces. The moisture absorption of this product is lower than UHMW, Acetal, nylon and PET. Unilate PBT is compliant with common sanitary standards used in the food industry; FDA (21CFR177.1660), USDA, 3-A Sanitary Standards for Dairy (3-A 20-21) and NSF Standard 51 & 61.

Olefin-Based Industrial Plastics

Polypropylene Sheets & Rods

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.

Available in Sheets (standard and custom sizes), rods, welding rods, cut-to-size blocks, and tubing.

UHMW-PE

UHMW-PE offers a combination of excellent properties – outstanding abrasion resistance, superior impact resistance, non-sticking and self-lubricating properties and excellent mechanical properties, even in cryogenic conditions. UHMW-PE exhibits virtually no water absorption. It is corrosion resistant, as well as, abrasion and impact resistant

HDPE Sheets & Rods

HDPE (high-density polyethylene) offers excellent impact resistance, light weight, low moisture absorption, and high tensile strength. HDPE is also non-toxic and non-staining and meets FDA and USDA certification for food processing. Available As Extruded or Stress Relieved (S/R)

LDPE - Low Density Polyethylene

Low Density Polyethylene is economical plastic material with good chemical resistance. LDPE provides high impact strength at low temperatures. It also exhibits excellent electrical properties. Advantages: Economical, Good Chemical Resistance, High Impact Strength at Low Temperatures, & Excellent Electrical Properties Disadvantages: Low Strength, Low Stiffness, Low Maximum Operating Temperature, Flammable, Poor UV Resistance, High Gas Permeability (particularly CO2), Susceptible to Environmental Stress & Cracking

Sanatec® Sanitary Cutting Boards

Sanatec® Sanitary Cutting Board is a high density polyethylene specially formulated for the manufacture of quality cutting boards. Sanatec's special surface finish insures long product life and will not dull knives. Sanatec outlasts (up to three times longer) functionally competitive materials and is considered the strongest and lightest of all cutting board materials. Clean - Sanatec will not absorb moisture, odor or bacteria and it is easy to clean. Nonporous - Sanatec is a homogenous extruded product that does not have pores. Safe - Sanatec is dishwasher safe. Sanatec is compliant with FDA regulations for food grade contact. NSF - Sanatec is approved by National Sanitation Foundation. Color Coded - Sanatec is color coded to help prevent cross contamination in food groups.



Sanalite® HDPE Cutting Boards

Sanalite® HDPE Cutting Boards - Cutting Boards from Sanalite HDPE or Polypropylene Sanalite is a premium cutting board material with a surface that is easy on cutting blades. Sanalite is used in a wide array of applications -- from home use to commercial food preparation and some of the largest packing plants in the United States. Sanalite® is NSF certified under Standard 02, Meets FDA regulation 21CFR177.1520 item 2.1, is USDA compliant & Ag Canada approved

Sanalite is available in two formulations:

- High Density Polyethylene (HDPE) (standard)
- Polypropylene (PP)



Tivar® CleanStat®

TIVAR® CleanStat® can cut downtime and fines build-up in a variety of applications. It eliminates static build-up problems, meets FDA and USDA guidelines for food contact and exhibits a longer wearing, lower coefficient of friction sliding surface than stainless steel. TIVAR CleanStat can be easily fabricated into components and replacement parts that reduce noise levels in plants and require less frequent cleaning. Its welded design capabilities result in seamless welded components. TIVAR CleanStat is available in 48" x 120" sheets with gauge sizes ranging from 1/4" to 3". It is also available in specific tube and rod sizes and custom fabricated parts. Applications include; Chute liners - Fabricated components - Hopper liners - Vibratory feeder pans



TIVAR® Oil Filled UHMW-PE

TIVAR® Oil Filled is the material of choice for packaging, bottling, and food processing and handling applications requiring FDA and USDA compliance. This advanced product uses oil filled polymers to lubricate mating surfaces with a dynamic coefficient of friction formula of less than 0.14. With TIVAR® Oil Filled, conveyors operate more effectively, without the effort and added expense of unnecessary lubrication. On TIVAR® Oil Filled guides, sprockets and conveyor components, chains move easily with less tension, stretching or binding.



Tivar® H.O.T.

TIVAR® H.O.T. is formulated to maintain key performance properties in an extended temperature range, and will excel in a variety of industrial manufacturing environments where temperatures range up to 275° F, nearly 100° higher than competing UHMW-PE formulations. TIVAR® H.O.T. reduces the oxidization rate of the material at higher temperatures thereby slowing material degradation and extending wear-life in chemical, elevated temperature and thermo-cycling environments. In many applications, TIVAR® H.O.T. will last up to 10 times longer in higher temperature environments and has excellent wear and release characteristics. TIVAR® H.O.T. is also a great material for use in conveyor systems or other equipment that is frequently exposed to chemical washdowns in such industries as poultry/meat processing and packaging. It can be also be used in applications ranging from wearstrips for spiral conveyors in the baking industry to drag conveyor flights for moving bulk materials (corn) in grain elevators, or wearstrips for conveyor dryers in drying and dehydrating systems.



High-Temperature Plastic Materials

Teflon® - PTFE- Virgin Grade

Teflon® - PTFE Virgin Grade Rods & Sheets - exhibit astonishing chemical resistance and ultra high-purity. Self-lubricating and with a low friction coefficient, Teflon PTFE (polytetrafluoroethylene) is ideally suited for the manufacture of high-temperature seals, insulators and bearings used in semiconductor, aerospace & chemical processing industries.



Fluorosint® 207

Fluorosint® 207's unmatched dimensional stability, excellent creep resistance and white color uniquely position this material to serve FDA regulated applications. It is non-permeable in steam and complies with the FDA's regulation 21 CFR 175.300. Its relative wear rate is 1/20 the rate of PTFE below 300°F (150°C) making it an excellent choice for aggressive service bearings and bushings.



Fluorosint® HPV

Fluorosint® HPV PTFE - Most Wear Resistant Fluorosint Grade - Outlasts Low-tech PTFE Based Materials FDA-compliant Fluorosint HPV is a mica-filled high-performance bearing grade that can deliver a pressure velocity (PV) performance improvement of more than 40 per cent over other PTFE materials according to inhouse tests conducted by Quadrant. Parts made of Fluorosint HPV can withstand higher loads and velocities while delivering better wear resistance, enabling the part to last longer compared to existing FDA-compliant PTFE-based materials. The product was specially developed to meet the demands of high-performance bearing applications where other, low-technology PTFE formulations would exhibit premature wear or not perform adequately. These characte ristics, together with FDA compliance for food and pharmaceutical applications, open up interesting new options for engineers and manufacturers.















Kynar® 740 PVDF

Kynar® 740, an engineering thermoplastic that offers the stable characteristics of a fluoropolymer, as well as mechanical strength, abrasion resistance and high purity. Kynar® 740 PVDF sheets & rods also offer excellent chemical resistance, UV radiation resistance and low permeability.

FDA approved & USP Class VI compatible

PEEK - Virgin Sheets & Rods

PEEK is an abbreviation for PolyEtherEther-Ketone, a high performance engineering thermoplastic. PEEK grades offer chemical and water resistance similar to PPS (PolyPhenylene Sulfide), but can operate at higher temperatures. PEEK can be used continuously to 480°F (250°C) and in hot water or steam without permanent loss in physical properties. For hostile environments, PEEK is a high strength alternative to fluoropolymers. PEEK carries a V-0 flammability rating and exhibits very low smoke and toxic gas emission when exposed to flame.

Polysulfone PSU 1000

Polysulfone is an amorphous high performance polymer characterized by excellent thermal properties, good resistance to inorganic acids and bases, and outstanding hydrolytic stability against hot water and steam sterilization. Polysulfone's resistance to detergents and hydrocarbon oils is very good, even at elevated temperatures under moderate stress levels, and it complies with the National Sanitation Foundation's potable water standard up to 180 degrees F. NSF, FDA, USDA, 3A Dairy & USP Class VI Approved

Techtron® PPS

Techtron® PPS is an FDA compliant PPS offering the broadest resistance to chemicals of any advanced engineering plastic. They have no known solvents below 392°F (200°C) and are inert to steam, strong bases, fuels and acids. 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. Techtron® PPS is ideal for structural applications in corrosive environments or as a PEEK replacement at lower temperatures.

Techtron® HPV - Bearing Grade PPS

Techtron HPV is an FDA compliant extruded form of PPS with reinforcement and internal lubricants, offering excellent wear resistance, strength, dimensional stability & chemical resistance. Techtron HPV is an ideal material for applications where standard engineering plastics (nylon, acetal, and polyesters) fall short, and advanced materials (polyimides, PEEK, & PAI) are over-engineered solutions. Techtron HPV PPS resists a wide variety of organic and inorganic chemicals. Techtron HPV PPS™s maximum allowable service temperature is 260°C for short periods and 220°C for more than 20,000 hours of continuous use. Techtron HPV PPS™s overall wear resistance & low coefficient of friction overcome the disadvantages of virgin PPS, which has a rather poor wear resistance, and of glass fibre reinforced polyphenylene sulphide, which causes premature wear of the counterface in bearing applications. Techtron HPV PPS preserves very good dimensional stability despite temperature variations, moisture absorption, stress relieving & chemical attack.

Ultem® 1000 PEI (unfilled)

Ultem® 1000 (standard, unfilled polyetherimide - PEI) - Ultem Sheets & Rods offer excellent chemical resistance, high dielectric strength, natural flame resistance, and extremely low smoke generation. Ultem provides exceptionally high mechanical properties and ease of fabrication including bonding make it an easy choice when exceptional performance is required.

• FDA, USDA, USP Class VI & NSF Approved (natural color only)

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 & is easily machined & thermoformed. Available in both Cast & Extruded Sheets, Rods & Tubes

Polycarbonate GP Sheet - Glazing Grade

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 & Electrical properties. It is UV resistant and is available in Clear (GP), and Abrasion-Resistant (AR1,AR2) grades.





Fluid Handling & Tubing Products

Formulated to withstand the high temperatures frequently occurring during food and beverage processing, Norprene® Food Process Tubing will outlast and outperform virtually all other food grade tubings. Even following extended exposure to heat and ozone, it will not crack or deteriorate as commonly found when using traditional rubber tubings. Extremely flexible, Norprene® resists kinks and retains its shape while installing quickly & easily. Its excellent flexural fatigue resistance makes it the absolute best choice for use in peristaltic pumps often found in dispensing equipment. Repeatedly autoclavable, Norprene® Food Process Tubing can be steam cleaned in place, eliminating the need for frequent tubing replacement. When harsh sanitizing solutions are used, it exhibits exceptional chemical resistance and is entirely unaffected by a wide variety of cleaning solutions. Temperature resistant from -60°F to 275°F - Meets FDA, 3-A and NSF criteria



Silbrade® Braid Reinforced Silicone Hose

The construction of Silbrade enables silicone tubing to handle increased pressure applications. Silbrade offers outstanding resistance to temperature extremes and is made from FDA-sanctioned ingredients. The flexible design and construction of Silbrade allows excellent bend radii and permits installation in restricted spaces without impeding flow. This peroxide-cured product, contains no sulphur or other acid-producing chemicals thereby eliminating the possibility of staining, corroding, or deteriorating other materials it contacts. It is also resistant to ozone and U.V. over long time periods. Care is recommended in the selection of fittings and clamps, as sharp barbed fittings or unlined metal clamps could tear into the hose wall and possibly cause a failure, especially at elevated pressures. **Applications:** Adhesive Lines • Beverage Service • Bottle Filling • Chemical Feeds • Deionized Water Transfer • Fermenter Lines • Hot Fill Lines • Food Handling • Laboratory • Resin Feeds • Stirring Vessels • Viscous Material Handling



Teflon ® PTFE Tubing

Teflon® PTFE Tubing exhibits astonishing chemical resistance and ultra high-purity.

- Working temperature range 500° F (260° C) to -454° F (-270° C)
- Chemically Resistant (all common solvents, acids and bases)
- Chemically Inert, Low Extractrables & Excellent Dielectric Insulation Properties



Tygon® B-44-3 Beverage Tubing

Tygon® B-44-3 Beverage Tubing is specially formulated for transferring a wide variety of beverages including soft drinks, fruit juices, flavored teas and bottled water. In virtually all cases, Tygon® Beverage 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. Many of the unique properties inherent to Tygon® Beverage Tubing also apply to a wide variety of complex applications ranging from fine cosmetic production to the dispensing of water-based printing inks found in the publishing industry. The versatility and proven performance of Tygon® B44-3 Beverage Tubing have made it today's most widely specified clear, flexible plastic tubing.



Tygon® B-44-4X Food, Milk & Dairy Tubing

Producers of food, milk and dairy products insist upon Tygon® Food, Milk and Dairy Tubing for dependable performance in countless filling, draining, transfer and processing applications. Its smooth, non-porous bore inhibits particle entrapment, promoting a sanitary fluid path by minimizing potential for bacterial growth. It has outstanding resistance to harsh alkaline cleaners and is equally unaffected by commonly used sanitizers. Non-toxic, taste-free and odor-free, Tygon® Food, Milk and Dairy Tubing meets applicable regulatory standards for contact with food products. Complete clarity for positive visual inspection and flow control, it is available in up to a 6" inside diameter, making it a flexible replacement for rigid piping systems. Smooth, non-porous bore will not trap particulates or promote bacterial growth • Compatible with foods containing a high oil content • Resistant to harsh alkaline cleaners and sanitizers • Excellent alternative to rigid piping systems • Meets FDA, 3-A and NSF criteria



Tygothane® C-210-A Precision Polyurethane Tubing

The rigidly controlled manufacturing process of Tygothane® Precision Polyurethane Tubing allows this flexible polyurethane tubing to provide consistently tight tolerances from lot to lot. Precision tolerances and high elasticity provide the user with an easy, worry-free attachment to fittings. Made of a tough, ester-based polyurethane, Tygothane® Precision Polyurethane Tubing's clarity, high tear strength & excellent abrasion resistance make it ideal for many applications. It also offers exceptional resistance to oils, greases, fuels & many chemicals. Able to withstand rugged daily use, Tygothane® Precision Polyurethane Tubing resists weathering and can be safely used in temperatures ranging from -100°F (-73°C) to 200°F (93°C). It meets FDA criteria for food and beverage use and is also available in ether-based, medical grade and reinforced formulations.



Versilic® SPX-50 High-Strength Silicone Tubing

Peroxide-cured Versilic® High-Strength Silicone Tubing is designed for use in applications where flexibility, resiliency and durability are required. Its smooth inner surface reduces the risk of particulate entrapment and microscopic buildup during fluid transfer. In addition, its high and low working temperatures help the tubing retain its flexibility under extreme conditions. Because of its consistently reliable performance, Versilic® High-Strength Silicone Tubing is ideal for applications such as food & beverage dispensing & processing, appliance manufacturing, cosmetic production and electronic equipment.

Regulatory Approval Chart (all information assumes natural color with no additional additives)

Typical Approvals Only – Confirm with Salesperson at time of Order if a specific approval and certifications are required. Professional Plastics assumes no liability in your specific application.

Material	FDA	USDA	NSF	3A Dairy	Canada AG
ABS - Engineering Grade	YES	YES	NO	YES	NO
Acetal Copolymer	YES	YES	YES	YES	YES
Acrylic – Cast & Extruded	YES	YES	YES	N/A	N/A
Delrin ® Acetal Homopolymer	YES	YES	YES	NO	YES
Ertalyte ® PET-P	YES	YES	NO	YES	YES
Ertalyte ® TX (lubricated PET-P)	YES	YES	NO	YES	NO
FEP	YES	NO	NO /	NO	NO
Fluorosint ® 207 (food grade)	YES	YES	NO /	NO	NO
Halar ® ECTFE	YES	NO	NO	NO	NO
Kynar ® PVDF	YES	YES	YES	YES	NO
MC 907 ®	YES	YES	NO	YES	NO
Noryl ® PPO	YES	YES	NO	NO	NO
Norprene ® Tubing	YES	N/A	YES	YES	N/A
Nylon ® Type 6/6 Extruded	YES	YES	YES	YES	NO
Nyloil FG ®	YES	YES	NO	YES	NO
PEEK	YES	YES	NO	YES	NO
PFA	YES	NO	NO	NO	NO
Polyethylene – HDPE	YES	YES	NO	NO	NO
Polyethylene - LDPE	YES	NO	NO	NO	NO
Polypropylene – Homopolymer	YES	YES	YES	YES	NO
Polypropylene – Copolymer	YES	YES	N/A	YES	NO
Polysulfone	YES	YES	YES	YES	YES
Sanalite ® Cutting Boards	YES	YES	YES	N/A	N/A
Sanatec ® Cutting Board	YES	YES	YES	N/A	N/A
Silbraid ® Tubing	YES	N/A	YES	N/A	N/A
Techtron ® PPS	YES	YES	NO	NO	NO
Techtron ® HPV	YES	NO	NO	NO	NO
Teflon ® PTFE	YES	NO	NO	NO	NO
Tygon ® B-44-3 Tubing	YES	N/A	YES	YES	N/A
Tygothane ® Tubing	YES	N/A	N/A	N/A	N/A
UHMW-PE	YES	YES	N/A	YES	N/A
Ultem ® 1000 - PEI	YES	NO	NO	NO	NO

Typical Approvals Only – Confirm with Salesperson at time of Order if a specific approval
Approvals Listed as N/A do not necessarily indicate failure in that particular criteria. The product may not have gone through the testing and approval process. Please contact Professional Plastics technical support for additional details or questions.

Some of these materials are intended for use as machine guards and components, rather than for use in direct food handling. Always confirm the suitability of each material in your particular application and request material certifications related to your specific requirements. Professional Plastics assumes no liability for the suitability of any material in any specific application. It is the responsibility of the buyer to confirm the suitability of all materials in their specific application and perform due diligence in the material selection process.



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Visit <u>www.professionalplastics.com</u> for information and data sheets on more than 500 different plastic materials



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SHEETS - RODS - TUBING - FILM - CUT TO SIZE PARTS

Note: The information contained herein is based on typical properties and values for reference and comparison purposes only. This information should not be used as the sole basis for design and specification. Furthermore, it should not be used as a basis for quality control or considered as minimum performance characteristics. Actual performance data may vary. All values at 73 F (23 C) unless otherwise noted.