



Engineered Materials

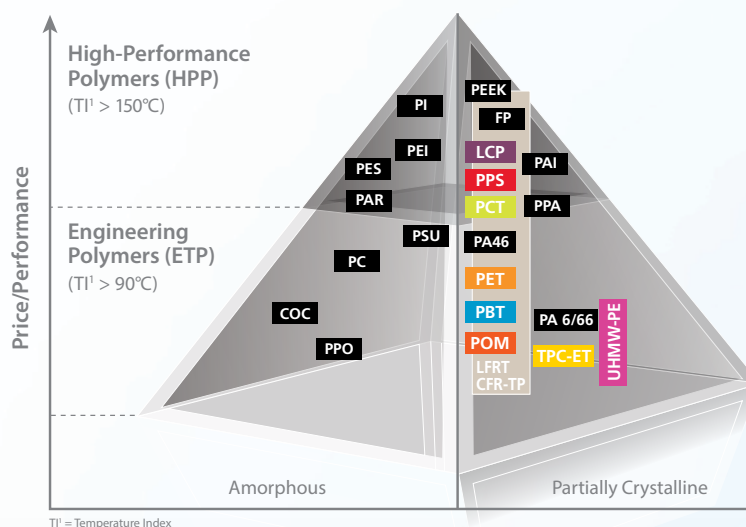
PRODUCT OVERVIEW

Leading global supplier of high-performance engineering thermoplastics for innovative, demanding applications

Creating Groundbreaking Solutions

Celanese is a trusted global leader in engineered materials. We provide total solutions with global reach, local resources, design and application development support, and deep technical knowledge. We collaborate to create groundbreaking solutions. By offering unmatched technical expertise and support to help solve challenges and lead the industry forward, Celanese is the industry choice to ensure you deliver value for your customers.

Whatever your product challenge, chances are a Celanese polymer can help you meet it. Our engineered materials help designers reduce component weight, consolidate parts and meet tough specifications. Beyond high performance thermoplastics, we offer critical design and engineering support throughout the product development cycle. It is no wonder manufacturers at every level turn to Celanese for the technical solutions they need.



Creating Groundbreaking Solutions

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With the ever changing needs and demands of the world, Celanese stays on top of these demands with new and innovative technologies and offerings.

A vibrant collage representing global industry and technology. In the background, a large, light blue globe is centered. Overlaid on and around the globe are various industrial and technological elements: a white jet airplane with red and black accents is flying towards the right; a silver car with its engine compartment open is in the bottom left; a woman with brown hair is talking on a light blue mobile phone; a young child with brown hair, wearing a green and white striped shirt, has their arms raised in a gesture of excitement or achievement; a large spool of copper wire is positioned in the center; a large black gear is visible; a yellow crane is in the top right; and various other mechanical parts, including a green engine component and a black electronic chip, are scattered throughout. The overall color palette is dominated by light blues, greens, and metallic tones, creating a sense of innovation and global connectivity.

Outstanding Performance in Engineered Materials

With world-class chemists, material and polymer scientists, engineers, operators and professionals, Celanese engineered polymers are created to be used in challenging environments that demand strong, stiff and dimensionally stable products with excellent mechanical, chemical and thermal performance. We are world leaders in acetal polymers, liquid crystal polymers, long fiber reinforced thermoplastics and ultra-high molecular weight polyethylene – and hold strong positions across our broad portfolio of other thermoplastics.

Celanese products include:

- Celanex® thermoplastic polyester (PBT)
- Hostaform® and Celcon® acetal copolymer (POM)
- Celstran®, Compel® and Factor® long fiber reinforced thermoplastic (LFRT)
- Celstran® continuous fiber reinforced thermoplastic (CFR-TP)
- Fortron® polyphenylene sulfide (PPS)
- GUR® ultra-high molecular weight polyethylene (UHMW-PE)
- Impet® thermoplastic polyester (PET)
- Riteflex® thermoplastic polyester elastomer (TPC-ET)
- Thermx® polycyclohexylene-dimethylene terephthalate (PCT)
- Vandar® thermoplastic polyester alloy (PBT)
- Vectra® and Zenite® liquid crystal polymer (LCP)

We focus the full power of our high-performance products, design and development support services, and deep technical knowledge on the success of our customers across all markets. Supporting all your innovations – no matter what the challenge.



Built to Make a Difference.

Our Core Values:

- Collaboration
- Customer value
- Improving the world
- Being sustainable



Hostaform®/Celcon® POM

acetal copolymers

For outstanding wear resistance, long-term fatigue resistance, toughness and creep resistance with excellent resistance to moisture, solvents and strong alkalis

Hostaform® POM – comparable to Celcon® acetal copolymer – possesses a linear structure and has a highly crystalline quality. Its chemical structure provides a higher stability to thermal and oxidative degradation compared to acetal homopolymers.

Hostaform/Celcon POM offer easy processability with significant performance and cost advantages like high strength and rigidity over a broad temperature range, low wear, toughness (down to -40°C) and resistance to repeated impact. It is widely used in injection molding and is also processable by extrusion, rotomolding, physical foaming and GIT/WIT.



Automotive, Consumer, Electrical/Electronics, Fluid Handling, Medical

Applications

Hostaform®/Celcon® is an independent class of materials for engineering parts of all kinds. It is used in almost all industries over a broad range of applications.

- **Automotive** – Components for safety belt mechanisms, seat adjustments, window lifters, sliding-roofs, heating controls, door locks, fuel gauges and pumps
- **Electric Appliances Industry** – Casings, cogwheels, clutches, bearings, carriers, components for electrical toothbrushes and shavers
- **Electrical/Electronics** – Telephone key pads, coil shells, switches, spring elements, armature supports, video cassettes, outsert boards
- **Machine Construction** – Worm gears, rollers, scrapers, mountings, bushings, sliding bearings, conveyor chain links

- **Consumer Goods** –

Tennis racquet grips, ski bindings, rod holders for surf boards, sail pulleys, parts for shower heads and fittings

- **Precision Mechanics, Watchmaker Industries** –

Parts for all kinds of measuring devices, high-precision cogwheels, watch hands, photo cameras, microscopes

- **Medical** – Mechanical parts for drug delivery systems or insulin pens, aerosol valves, components in medical devices

Product Properties

- Very tough (to -40°C)
- Very hard and rigid
- Easy colorization
- Good heat distortion temperature (to +100°C)
- Very good slip/wear properties
- Good chemical resistance, e.g., to fuels, solvents, strong alkalis
- Excellent resilience
- Low moisture absorption
- Resistant to stress cracking

Grades

- Basic grades
- Easy flow grades
- Glass fiber and glass sphere reinforced grades
- Improved low friction and wear resistant property grades
- High-impact grades
- Medical technology grades
- Low odor emission grades
- Most grades comply with FDA and EU regulations
- Improved resistance to aggressive cleaning agents or chlorinated water
- Hot diesel resistant grades
- UV stabilized grades
- Electrically conductive grades
- MetaLX™ metal-effect POM grades

Processing

- Injection molding
- Extrusion
- Rotational molding
- Physical foaming
- Gas- and water-injection technology (GIT/WIT)



Celanex® PBT

thermoplastic polyester

For high strength, rigidity and toughness, low creep even at high temperatures, and resistance to a wide range of chemicals, solvents, oils and greases

Celanex® PBT is part of a broad portfolio of semi-crystalline thermoplastics polyesters based on polybutylene terephthalate and polyethylene terephthalate. It is an ideal candidate for the manufacture of high-quality, high-stress molded engineering components; for precision mechanics in the machine construction sector; and is especially suited as a sliding partner for Hostaform® POM. It features excellent dimensional stability, low moisture absorption and powerful insulation resistance.

MetaLX™ metal-effect grades provide the look of metal and the design freedom of plastic – eliminating the need for paint and the probability of scratching. Various grades of Celanex PBT hold regulatory approvals including VDE or UL approvals for the electrical/electronic market, and FDA approval for the nutrition and medical markets.



Automotive, Consumer, Electrical/Electronics, Medical

Applications

- **Automotive** – Ignition and electrical system parts; gear, sensor or ECU boxes; connectors
- **Electrical/Electronics** – Connectors, sockets, relays, switches, bobbins and motor housings and insulation, electromechanical components
- **Consumer Goods** – Handles and covers for cookers and electrical irons, toaster casings
- **Medical** – Inhaler components, drug delivery systems, aerosol valves
- **Appliance** – Housings, handles and bases

Product Properties

- Very hard, rigid and strong
- Good creep resistance
- High heat distortion temperature, especially for glass fiber reinforced grades
- Service temperature to 140°C
- Very good low friction and wear resistant properties
- High dimensional stability (low thermal expansion coefficient, low water absorption)
- Good electrical properties
- Good chemical resistance
- No environmental stress cracking
- Good weathering resistance
- Rapid crystallization and fast cycle time
- Paintability
- Flame-retardant grades available (UL 94 V-0, in some cases 5VA)

Grades

- Basic grades
- Glass fiber and glass sphere reinforced grades
- Glass fiber reinforced grades with very high surface gloss
- Glass fiber/mineral reinforced grades
- Flame retardant grades
- UV stabilized grades
- Grades for medical technology
- Special colors for laser marking
- MetaLX™ grades for metallic effects

Processing

- Extrusion
- Physical foaming
- Water- and gas-injection technology (WIT/GIT)



Impet® PET

thermoplastic polyester

Electrical/Electronics

For outstanding physical properties and superior thermal and chemical resistance, with the ability to support higher temperature exposure

Glass-reinforced Impet® polyester products are outstanding candidates for high-performance applications calling for strength, rigidity, dimensional stability, toughness and excellent electrical properties. Custom-modified Impet PET resins are also available where needed to meet the specific requirements of certain packaging and film applications.

Applications

- **Automotive** – The distinctive crystallization characteristics of PET make it an excellent choice for larger parts such as automotive grille opening retainers, but smaller automotive parts also use Impet PET. Windshield wiper brackets, throttle body covers, air-conditioning and heater duct doors, cogwheels, bearings, cams, angle plates, clutches, lock parts, casings for motor control units
- **Electrical/Electronics** – Housings for residual current circuit breakers, components for electrical installations
- **Machine Construction** – Chains, rollers, molded valve parts, pump casings and pulleys
- Good low friction and wear resistant properties
- Very good electrical, good dielectric properties
- High chemical resistance and weathering resistance

Product Properties

- Very hard, rigid and strong
- Very good creep strength
- Paintable surface
- High heat distortion temperature (HDT/A to 228°C)
- Service temperature to 150°C

Grades

- Glass fiber reinforced grades
- Special colored formulations

Processing

- Injection molding



Vandar[®] alloy

thermoplastic polyester alloy

Automotive/Consumer

Combines the seemingly contradictory properties of high ductility and good stiffness with the excellent chemical and thermal resistance of polyester

All unreinforced Vandar[®] polyester products have high-impact resistance while retaining strength and stiffness. One grade has a V-0 rating in the UL 94 flammability test down to a thickness of 0.85 mm (0.033 in). A key to the value offered by these Vandar products is that they have high impact even well below freezing, yet retain sufficient stiffness to prevent creeping and sagging at much higher temperatures.

These alloys are easy to mold and retain their impact strength down to -30°C (-21°F); they are available in both unreinforced grades and as compounds with glass fiber and minerals. Glass-reinforced Vandar PBT alloy grades provide added strength, stiffness and toughness over a wide temperature range, from -40°C to 130°C (-40°F to 261°F). A low warp mineral-filled grade is also available that can be painted directly.

Applications

- **Automotive** – Switches, connectors, brake and fuel line clips, power distribution boxes, wheel covers, headlamp bezels and air bag doors, bumper fascia
- **Machine Construction** – Farming machine parts, telephone line splice cases
- **Consumer Goods** – Films for protection and decoration

Product Properties

- High impact and notched impact strength even at low temperatures
- High heat deflection temperature, particularly the glass-fiber-reinforced grades (service temperature to 120°C)
- High resistance to organic solvents, fuels, lubricants and brake fluids
- High abrasion resistance
- Good processability
- Paintability

Grades

- Basic grades
- Glass fiber reinforced grades
- Flame retardant grade

Processing

- Injection molding
- Film extrusion



Riteflex® TPC-ET

thermoplastic polyester elastomer

Combining the favorable characteristics of vulcanized rubber with the easy processability of thermoplastics for toughness, tear and flex fatigue resistance over a wide temperature range

Riteflex® TPC-ET thermoplastic elastomers offer an innovative combination of hard and soft segments – providing the desirable properties of thermoset elastomers along with the processing ease of thermoplastics. They perform over a temperature range of -40°C to +121°C (-40°F to +250°F), with the excellent chemical resistance of polyesters to common solvents, oils and greases, and dilute acids and bases.

Riteflex TPC-ET polyester elastomers are available as unreinforced polymers in a wide range of Shore D hardnesses. In general, the harder versions have enhanced heat and chemical resistance, while the softer materials possess good low-temperature mechanical properties.

MetaLX™ metal-effect grades provide the look of metal and the design freedom of plastic – eliminating the need for paint and the probability of scratching.

Riteflex® XFR® grades are ideal candidates for use in electrical/electronic applications. Their high-performance flame-retardant technology – with no toxicity or processing issues – helps customers meet hazardous substance restrictions.



Automotive, Consumer, Electrical/Electronics

Applications

The range of properties available from Riteflex® TPC-ET elastomers is reflected in the diversity of its applications, including hoses, tubing, seals, gaskets, belts, pump diaphragms, wire coatings, hooks, fasteners, film, sheet, nonwovens and monofilaments.

- **Automotive** – Body parts, shock absorbers, radiator grilles, bellows, hoses, cup holders, coin trays, airbag containers and clips, tank cap connector strips, shifter boots and knobs
- **Electrical/Electronics** – Connectors, cell phone/pager buttons and keypads, wire and cable jackets
- **Machine Construction** – Seals, collars, flexible couplings, pump diaphragms, low noise gears, sprockets, belting, A/C louvers, hoses

- **Consumer Goods** – Hose and sprinkler seals, non-slip mats, bedsprings, tool grips, sporting goods like frisbees

Product Properties

- Very flexible with high-impact strength even at low temperatures
- High mechanical strength
- Good resilience
- Highly resistant to chemicals and aging
- Excellent surface gloss and good paintability
- Easy and economical to process
- Excellent wear resistance
- No softening additives are required: chemical bonding of hard segments with soft segments results in a block polymer
- Applications possible at higher temperatures than that of TPE

Grades

- Basic grades with different hardness ratings (Shore hardness D)
- Special grades
 - Heat stabilized grades (HS)
 - Glass fiber reinforced grades
 - Grades with halogen-free flame retardant system (XFR®)
 - Carbon black concentrate
 - UV concentrate for improved weather stability
- MetaLX™ grades for metallic effects
- Riteflex® XFR® halogen- and antimony-free flame-resistant polyesters

Processing

- Injection molding
- Extrusion of profiles, cables, films and fibers



Celstran®/Compel®/Factor® LFRT

long fiber reinforced thermoplastic

For excellent mechanical properties, impact and creep resistance, and low warpage for metal replacement applications

Celstran®, Compel® and Factor® long-fiber reinforced thermoplastics are produced in a special patented pultrusion process that achieves a high impregnation quality without damage to the fibers. Incorporated fibers can be glass, carbon, aramid and stainless steels. As matrix materials, nearly all types of polymers are suitable.

Using Celstran LFRT allows cost-saving production methods and short cycle times in component manufacturing – resulting in products with attractive price/performance ratios that are also recyclable because of their high fiber lengths.

Conventional forming methods such as injection molding, blow molding, rotocasting and profile extrusion can be used for typical fiber lengths up to about 10 mm. Products with longer fiber reinforcements suitable for extrusion compression molding are also available as Compel® LFRT (fiber lengths about 25 mm).



Automotive, Consumer, Industrial Transportation

Applications

Celstran® LFRT

These products are ideal candidates for metal replacement to reduce weight and save costs with modern, 100% recyclable materials. Short-fiber reinforced thermoplastics are no match for Celstran LFRT in applications such as structural parts for the automotive industry, electrical/electronics, machine construction and in sports/leisure.

Compel® LFRT

Outstanding mechanical properties make Compel LFRT excellent for metal replacements like automobile front ends, instrument panel support brackets and control panels.

Factor® LFRT

High temperature stability, excellent mechanical properties and low weight make these products outstanding for replacing metals

– even in automotive industry applications like instrument panel supports, underbody panels or crash-active headrests.

Product Properties

- High dimensional stability and excellent mechanical properties
- Very high energy absorption, and therefore easily meets crash requirements
- Retention of properties such as impact resistance, rigidity and strength over a wide temperature range
- High heat distortion temperature
- Low creep, low warpage and shrinkage

Grades

Celstran® LFRT

- Matrix materials: PP, PA (further matrix materials on request)
- Glass fiber reinforced grades:

fiber content 30-60%

- Carbon fiber reinforced grades
- Aramid fiber reinforced grades
- Celstran® S: contains stainless steel filaments for EMI and RFI shielding

Compel® LFRT

- Long glass fiber reinforced basic grades: fiber content 30-40%, matrix: PP
- High-impact modified grades

Factor® LFRT

- Long glass fiber reinforced polypropylenes: glass fiber contents 10-60%
- Low emission grades specially for automotive interiors

Processing

Celstran®/Factor® LFRT

- Injection molding

Compel® LFRT

- Injection stamping
- Compression molding



Fortron® PPS

polyphenylene sulfide

For high temperature stability, broad chemical resistance, stiffness, strength and creep resistance at elevated temperatures

Fortron® PPS is a linear, semi-crystalline polyphenylene sulfide. Its chemical structure provides excellent chemical and thermal resistance. Insoluble in all known solvents below 200°C (392°F), Fortron PPS has very good stability in both typical and alternative automotive fuels. Standard injection moldable grades with glass fibers and/or mineral reinforcements are available, but many specialty grades are available for improved lubricity, low warpage, faster cycling and other areas of enhanced performance.

Certain grades of Fortron PPS comply with ISO 10993 and USP Class VI, and Drug (DMF 14844) and Device (MAF-1097) Master Files have been created for them. These grades also meet European Directive 2002/72/EC for food contact applications and BfR standards.



Aerospace, Appliance, Automotive, Electrical/Electronics, Fluid Handling, Oil and Gas, Technical Fibers

Applications

Fortron® PPS is an ideal candidate for mechanically and thermally stressed molded or precision machined parts. Its low proportion of ion contamination gives Fortron PPS an advantage over other materials for electronic applications.

- **Automotive** – Injection molded automotive under-the-hood parts, power train components, pumps, fuel system components, blower and pump parts
- **Electrical/Electronics** – Surface mount electrical/electronics components, plugs and connector straps, coil shells, switches
- **Aerospace**
- **Consumer Goods** – Protective and non-stick coatings, power tools
- **Films and Composites**
- **Fuel Cells and Diesel Fuel Cars**

Product Properties

Unreinforced Fortron PPS has comparably low heat resistance – but adding glass fibers and glass fiber/mineral mixtures allow characteristics like:

- Service temperatures up to +240°C
- Very good resistance to chemicals and solvents
- Very hard and rigid
- Very low moisture absorption
- Inherent flame resistant (UL 94 V-0, some grades 5VA)
- Suitable for lead-free soldering
- Excellent creep resistance even at elevated temperatures

Grades

- Unreinforced grades (powder and granules)
- Reinforced grades (granules)
 - Glass fiber reinforced grades and long glass fiber reinforced grades
 - Glass fiber/mineral reinforced grades
- Grades for medical technology
- Blow molding grades
- Film and fiber grades

Processing

- Injection molding
- Extrusion
- Blow molding



GUR[®] UHMW-PE

ultra-high molecular weight polyethylene

For outstanding abrasion resistance, superior impact resistance, non-sticking and self-lubricating properties and excellent mechanical properties, even in cryogenic conditions

GUR[®] UHMW-PE is a linear polyethylene with a much higher polymerization than standard PE grades. Because of its abrasion resistance, chemical resistance and good frictional properties, major application areas of UHMW-PE include bulk material handling, food and beverage machinery; chemical, mining and mineral processing equipment; recreational equipment; transportation; and orthopedic implants.

Celanese is the largest global supplier with the broadest UHMW-PE portfolio in the industry. Included in this portfolio are GUR UHMW-PE Specialty Products which are used to fabricate porous and filtration parts and as additives for paints, coatings or material matrix modifiers.



Medical, Filtration, Industrial, Sports and Leisure

Applications

The high chemical resistance and good low-temperature behavior of GUR® permit its use in dirty, challenging environments; extreme weather; and aggressive media. It is very suitable for tribological applications that require high wear resistance and toughness with good slip properties.

- **Machine Construction** – Machine components that are subject to high abrasion, i.e., rollers, cogwheels, chain guides, bushings
- **Chemical Industries** – Rotary pumps, faucets, valves, silo coatings
- **Mining and Coal Processing** – Linings of conveyor troughs, chutes, trolleys, hoppers
- **Galvanic Engineering** – Galvanizing drums, bearing shells, cogwheels
- **Electrical Engineering** – Insulation parts, connector plugs, mountings, cable tongs

- **Filter Technology, Acoustics** – Porous molded parts for filtering liquids or gases, for sound and vibration damping
- **Consumer Goods** – Down-hill and cross-country ski and snowboard soles
- **Medical** – Biocompatible parts for endoprotheses and orthoses

Product Properties

- Exceptionally high notched impact strength
- High energy absorption capacity at high stress rate
- Excellent low friction and wear resistant properties
- Very high chemical resistance to acids, alkalis and corrosive gases
- Highly resistant to environmental stress cracking
- Very good acoustic damping properties
- Wide service temperature range from -200 to +90°C

Grades

- Basic grades, modified grades and special purpose formulations for pressure sintering, ram extrusion, direct compression molding, suitable for skived films and porous products
- Premium grades for orthopedic implants
- Injection molding grades
- Heat conductive grade
- Anti-static grade
- Grades for use as additives (e.g., micro-powder)

Processing

- Pressureless sintering
- Ram extrusion
- Compression molding
- Injection molding



Vectra®/Zenite® LCP

liquid crystal polymer

For exceptionally precise and stable dimensions, high-temperature performance and chemical resistance in very thin-walled applications

Vectra® liquid crystal polymers (LCP) are highly crystalline, thermotropic (melt-orienting) thermoplastics that provide high stiffness in thin-wall sections and a low coefficient of thermal expansion. They consist of rigid, rod-like macromolecules, which align in the melt to produce liquid crystal structures. They can withstand surface mount soldering temperatures, including those needed with lead-free solder. These properties make Vectra and Zenite® LCP ideal candidates for electronic applications such as sockets, bobbins, switches, connectors, chip carriers and sensors. Many grades have outperformed ceramics, thermosets and other high temperature plastics.

Standard injection moldable grades with glass fibers and/or mineral reinforcements are available, along with specialty grades for applications requiring platability, improved lubricity, static dissipation and a whole host of other specific performance requirements.



Aerospace, Automotive, Cookware, Electrical/Electronics, Lighting, Medical, Technical Fibers

Applications

Vectra® LCP

- **Automotive** – Glow plug connectors, sensors, lamp housings, bezels
- **Electrical/Electronics** – Connectors, coil bobbins, components for cell phones
- **Consumer Goods** – Baking pans and trays, baseplates for watches, pans for grilling
- **Medical** – Surgical instruments, dental tools, sterilizable trays and equipment, mechanically stressed parts in drug delivery systems

Zenite® LCP

- Automotive
- Electrical/electronics
- Fiber optics
- Telecommunications
- Aerospace
- Food environments

Product Properties

- Service temperature up to +240°C, short term up to +340°C
- Very close tolerances possible (to tolerance class T6)
- Very low heat of fusion (short cycle times possible)
- Flash-free injection molding
- Very high tensile strength (to 185 MPa) and tensile modulus (to 30,000 MPa)
- Very low coefficient of thermal expansion comparable with that of steel and ceramics
- Inherently flame resistant (UL 94 V-0, some grades with 5 VA)
- Very good resistance to chemicals and oxidation

Grades

- Glass fiber reinforced grades
- Carbon fiber reinforced grades
- Fiber/filler modified grades
- Mineral and graphite filled grades
- Grades suitable for electroplating and conductive grades
- Extrusion grades

Processing

- Injection molding
- Extrusion



Thermx[®] PCT

polycyclohexylene-dimethylene terephthalate

Automotive, Electrical/Electronics, Lighting

For superior performance and value through improved heat resistance, fast molding cycles and excellent processability

Thermx[®] PCT offers the desirable chemical resistance, processability and dimensional stability of engineering polyesters like PET and PBT. With the benefits of added heat resistance, Thermx PCT is particularly well suited for demanding automotive, electrical/electronics and lighting applications.

Applications

Thermx PCT is an ideal candidate for a wide range of injection molded components for electrical/electronics, automotive, appliance and other industrial and consumer products.

- **Automotive** – connectors (headers), lamp sockets and relays
- **Electrical/Electronics** – Circuit board connectors
- **Consumer Goods** – Appliances

Product Properties

- Short-term temperature resistance up to 255°C for lead-free soldering
- Chemical resistance to automotive fluids and printed circuit board cleaning chemicals
- Low moisture absorption
- Low-flash processing
- High CTI and arc resistance
- High whiteness and color stability

Grades

- Glass and/or mineral-reinforced
- Flame-retardant (V-0 UL94B) resins

Processing

- Injection molding



Celstran® CFR-TP

continuous fiber reinforced thermoplastic

Alternative Energy, Aerospace, Automotive, Building and Construction, Industrial, Oil and Gas, Sports and Leisure

For the easy processing of TPs with the outstanding mechanical and thermal performance of composite materials

The Celstran® CFR-TP product series encompasses a variety of continuous-fiber reinforced thermoplastics. These composites can provide higher levels of stiffness and toughness compared to other reinforced thermoset and thermoplastic materials. Nearly all types of semi-crystalline and amorphous thermoplastic polymers are suitable as matrix materials. The reinforcement fibers can be glass, carbon, aramid and stainless steel.

Resin	Fiber	Additive	Processing
• PEEK • PVDF • PAA/PPA • PA (6, 66, 46,12) • PPS • PBT/PET • PC • PC/ABS • ABS • PPO • TPU • POM • PEHD • TPE/TPO/TPV • PP	• Carbon Fiber • Aramid • S-Glass • E-Glass • ECR-Glass	• Custom Color • UV Stabilization • Heat Stabilization • Impact Enhancement • Surface Appearance • Galvanic Corrosion • Paint Adhesion • Conductive Particle • Low Emission • Lubricity/Wear Enhancement	• Automated tape lay-up/consolidation – Winding – Tape placement • Press consolidation – Double belt press – Press consolidation – Continuous press consolidation • Fluid heat transfer under vacuum (Quickstep Process*) • Partial reinforcement – Injection molding incorporation – Compression molding incorporation – Extrusion incorporation • Sandwich structures

*Patented process of Quickstep Technologies Pty. Ltd.



Enabling Eco-Friendly Innovation

Celanese's high-performance engineering thermoplastics enable eco-friendly innovation for efficient transportation, green electronics, medical technology, alternative energy, clean air and water, and improved aesthetics. These materials are good for our environment – and great for your bottom line.



Efficient Transportation

Eco-friendly materials for the automotive industry – including hybrid and electric vehicles – promote serious weight and cost savings. Award-winning aerospace innovations are resulting from high-performance thermoplastic breakthroughs.

Green Electronics

Halogen-free and inherently flame-resistant polymers offer outstanding eco-friendly material choices to the electrical/electronic industry.



Medical Technology

Celanese – the global leader in FDA-compliant medical polymers – offers medical technology (MT®) materials with excellent processability, dimensional stability, mechanical properties and chemical resistance. GUR® UHMW-PE has been the material of choice for orthopedic implants for almost 50 years.



Alternative Energy

Solutions for emerging technologies in biofuels, wind power, solar power, oil and gas, and hybrid/vehicle electrification grow from Celanese's strong, lightweight composites.



Clean Air

The global leader in Fortron® PPS – a key ingredient in staple fibers for hot gas filtration in harsh environments.

Clean Water

GUR® UHMW-PE – a major component in filters that remove contaminants at point of use.



Celanese is a major force for fresh, clean air and water worldwide.

Looks That Thrill™

Molded-in-color polymers eliminate painting, plating and secondary finishing operations, stop paint waste and VOCs, and allow recycle regrind of scrap.

MetaLX™ Metal-Effect Polymers

Get brilliant appearance solutions with MetaLX, metal-effect polymers that offer color and finish ranges from Satin Chrome to Diamond Dust.



Technical Service and Support

Celanese laboratories and technical service capabilities focus on developing new engineered materials that expand your design space, providing technical data and problem-solving tools that help you optimize the performance of our polymers for your application.

We offer technical support during product development, from concept through commercialization, with:

- Technical support from concept through commercialization
- Design/Computer Aided Engineering (CAE)
 - Design reviews
 - Mold-filling analyses
 - Structural analyses
 - Gear analyses
- Part and tool design, gating and material suggestions
- Material and testing laboratories
- Development molding laboratory for molding trials



Design and Application Development



ENGINEERED MATERIALS

celanese.com/engineered-materials

Engineered Materials

- Celanex® thermoplastic polyester (PBT)
- Hostaform® and Celcon® acetal copolymer (POM)
- Celstran®, Compel® and Factor® long fiber reinforced thermoplastic (LFRT)
- Celstran® continuous fiber reinforced thermoplastic (CFR-TP)
- Fortron® polyphenylene sulfide (PPS)
- GUR® ultra-high molecular weight polyethylene (UHMW-PE)
- Impet® thermoplastic polyester (PET)
- Riteflex® thermoplastic polyester elastomer (TPC-ET)
- Thermx® polycyclohexylene-dimethylene terephthalate (PCT)
- Vandar® thermoplastic polyester alloy (PBT)
- Vectra® and Zenite® liquid crystal polymer (LCP)

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CEM-024R1_CelaneseEngMatCapabilitiesBro_AM_0614