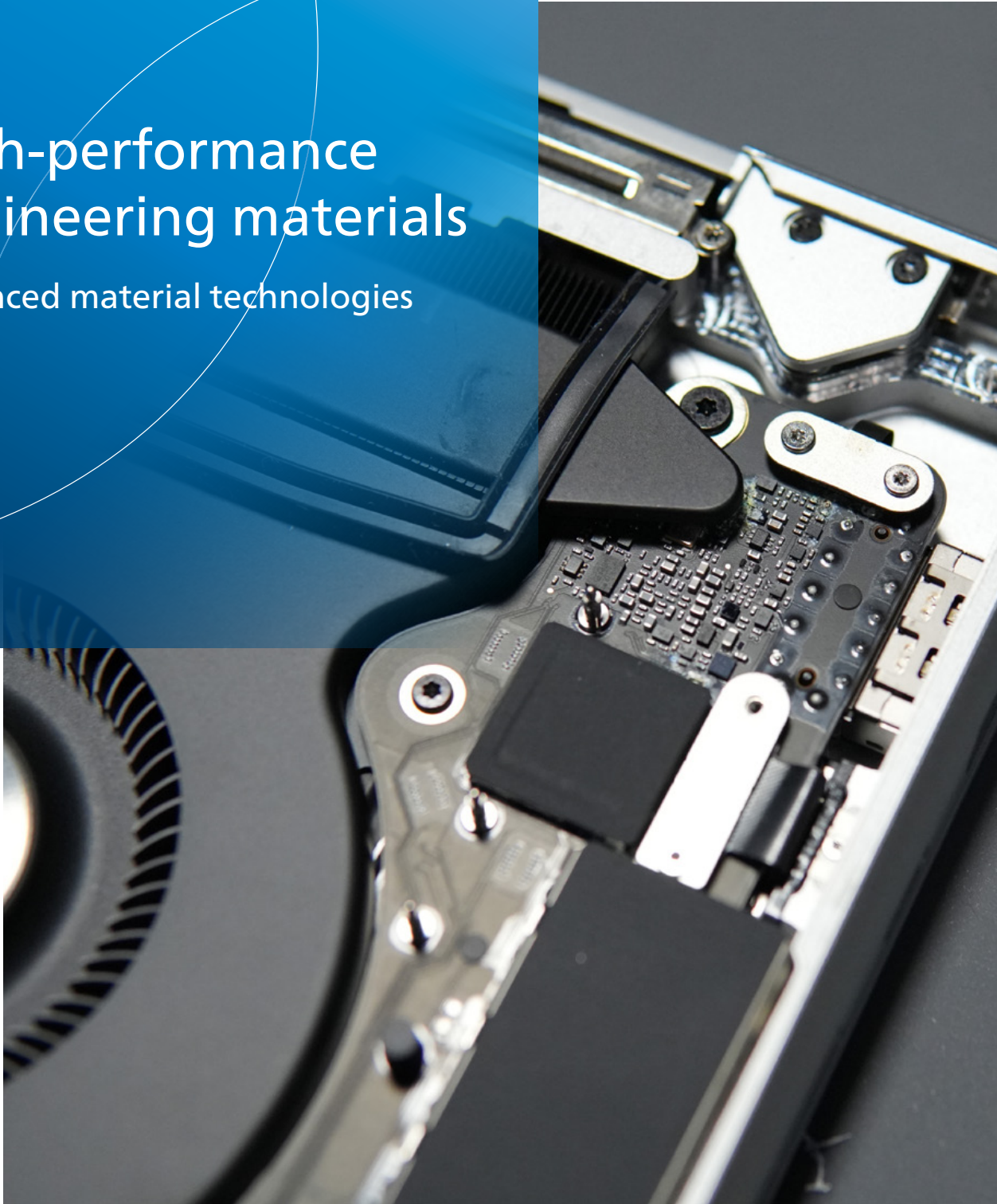


Product Focus

High-performance engineering materials

Advanced material technologies



High-performance engineering materials

Advanced material technologies

Advanced material technologies delivering precision, thermal performance, lightweight strength, wear resistance, flexibility, and design freedom across demanding applications.

Celanese develops advanced engineering materials designed to address complex performance, processing, and design challenges across a broad range of industries. From precision components and high-temperature environments to structural lightweighting, thermal management, flexible applications, and demanding wear conditions, its portfolio provides manufacturers with material technologies tailored to specific application requirements.

Through Omya Performance Polymer Distribution, customers can access a broad portfolio of Celanese material technologies supported by local commercial and technical expertise. Working closely with Celanese, we help manufacturers identify the most appropriate material and grade for their application, balancing mechanical, thermal, electrical, processing, regulatory, and end-use requirements.

Portfolio overview

Material family	Brand	Core positioning
 Precision POM engineering polymers	Amcel® POM	POM technologies for dimensional precision, low friction, wear resistance and durable mechanical performance
	Celcon® POM	
	Hostaform® POM	
 High-performance polymers	Fortron® PPS	PPS and LCP technologies for high temperatures, chemical resistance, dimensional stability and demanding electrical/electronic applications
	Vectra® LCP	
	Zenite® LCP	
 Structural lightweighting and thermal management	Celstran® LFRT	Long fiber reinforced and thermally conductive technologies for structural lightweighting, metal replacement, functional integration, and thermal management
	CoolPoly® TCM	
 Flexible polymers and elastomers	Laprene® SEBS	SEBS, SBS and PP solutions spanning flexibility, soft touch, resilience, lightweighting and durable consumer and industrial applications
	Sofprene® SBS	
	Tecnoprene® PP	
 Wear-resistant UHMWPE solutions	GUR® UHMWPE	Exceptional wear resistance, impact performance and low friction for medical, industrial, filtration and other demanding applications



Precision POM engineering polymers

High-performance POM technologies delivering dimensional precision, low friction, wear resistance, mechanical strength, and long-term durability for demanding engineering applications.

Amcel®, Celcon® and Hostaform® polyoxymethylene (POM)

Amcel®, Celcon® and Hostaform® from Celanese comprise a broad portfolio of polyoxymethylene (POM) engineering polymers designed for applications requiring **dimensional precision, mechanical strength, low friction, and excellent wear resistance**.

Combining high stiffness and strength with good toughness, low moisture absorption, chemical resistance, and excellent sliding properties, Celanese POM materials support reliable performance in precision components exposed to repeated movement, mechanical loads, fuels, solvents, and demanding service environments. A broad range of general-purpose and specialty grades enables material selection to be tailored to specific processing, performance, and end-use requirements.

Performance at a glance

Key property	Typical performance
Density	~1.41 g/cm ³
Melting temperature	~165°C
Tensile stress at yield	~62 MPa
Tensile modulus	~2,600 MPa
Low-temperature toughness	Good toughness down to -40°C
Heat performance	Good heat distortion performance up to ~100°C*
Moisture absorption	Low
Friction and wear	Very good slip and wear properties
Chemical resistance	Excellent resistance to fuels, solvents and strong alkalis

Typical values shown for a representative standard unfilled Celanese POM grade. Properties vary by brand, grade, reinforcement, modification, processing conditions, and application. Refer to individual technical data sheets for grade-specific values.

Key benefits

Material performance	Value for manufacturers
High dimensional stability	Low moisture absorption supports accurate, consistent components and tight tolerances, including in humid environments
Low friction and excellent sliding properties	Supports smooth movement and efficient operation in gears, bearings, mechanisms, and other moving components
Excellent wear resistance	Enables durable components designed for repeated movement and long service life
High strength and stiffness	Supports mechanically demanding components while enabling lightweight polymer design
Good toughness and impact resistance	Helps components withstand mechanical loads, repeated impact, and demanding service conditions
Chemical and fuel resistance	Provides reliable performance in contact with many solvents, fuels, oils, and strong alkalis
Low moisture absorption	Helps maintain mechanical properties and dimensional accuracy across changing environmental conditions
Fatigue and creep performance	Supports components exposed to repeated or sustained mechanical loading
Broad grade flexibility	Reinforced, impact-modified, tribological, conductive, UV-stabilized, medical, and other specialty options support diverse application requirements
Metal replacement potential	Combines mechanical performance, dimensional stability, and inherent sliding properties to support metal replacement in suitable applications



Processing capability

Celanese POM technologies are designed for efficient processing using established thermoplastic manufacturing methods, with injection molding and extrusion supporting a broad range of precision components and profiles. Selected grades are also suitable for processes including blow molding, rotational molding, sheet and profile extrusion, physical foaming, and other specialized processing technologies.

A broad range of flow characteristics, reinforcement options, and functional modifications enables manufacturers to select materials according to component geometry, processing requirements, and end-use performance, supporting efficient production of accurate, durable, and high-quality engineered components.

High-performance polymers

High-performance PPS and LCP technologies delivering exceptional thermal resistance, dimensional stability, chemical resistance, flame performance, and precision for demanding applications.

Fortron® polyphenylene sulfide (PPS)

Fortron® PPS from Celanese is a high-performance engineering thermoplastic combining **excellent thermal stability, chemical resistance, dimensional stability, mechanical strength, and inherent flame resistance**. Capable of continuous-use temperatures up to 240°C, Fortron® PPS retains its performance in demanding environments while offering very low moisture absorption and excellent creep resistance, even at elevated temperatures.

Available in a broad range of reinforced and specialty grades, Fortron® PPS supports applications across automotive, electrical and electronics, aerospace, fluid handling, energy, industrial equipment, and other demanding markets where reliable long-term performance under heat, chemical exposure, and mechanical loading is essential

Vectra® and Zenite® liquid crystal polymers (LCP)

Vectra® and Zenite® liquid crystal polymers (LCP) from Celanese are high-performance thermoplastics engineered for applications requiring **exceptional dimensional precision, high-temperature performance, inherent flame resistance, and excellent flow** in complex, thin-wall components. Their distinctive molecular structure provides very low melt viscosity, enabling intricate geometries and miniaturized designs while supporting rapid filling and efficient production cycles.

With very low moisture absorption, low warpage, high dimensional stability, and tailored electrical and dielectric properties available in selected grades, Vectra® and Zenite® LCP are particularly well suited to connectors, sensors, antennas, electronic components, small electric motors, automotive systems, and other precision applications. Selected medical grades also support applications including drug delivery devices, surgical instruments, diagnostics, and wearable devices.

Performance at a glance

Key property	Fortron® PPS	Vectra® / Zenite® LCP
Temperature performance	Continuous use up to 240°C	Excellent high-temperature performance
Moisture absorption	Very low	Very low
Flame performance	Inherently flame resistant; UL 94 V-0, selected grades 5VA	Inherently flame resistant
Chemical resistance	Very good	Excellent / grade dependent
Dimensional stability	Excellent	Exceptional
Thin-wall processing	Excellent flow for complex components	Very high flow; particularly suited to thin-wall designs
Creep resistance	Excellent, including at elevated temperatures	High dimensional stability under demanding conditions
Specialty functionality	Conductive, ESD, reinforced, tribological and other grades	Tailored Dk/Df, plateable, conductive, reinforced and other grades



Key benefits

Material performance	Value for manufacturers
Exceptional thermal performance	High-performance materials support components exposed to demanding operating and processing temperatures
Dimensional stability	Low moisture absorption and stable material behavior support precision components and tight tolerances
Excellent chemical resistance	Supports reliable performance in contact with fuels, solvents, chemicals, and demanding service environments
Inherent flame resistance	PPS and LCP technologies provide strong inherent flame performance for demanding electrical and electronic applications
High mechanical performance	Reinforced and specialty grades provide strength and stiffness for demanding structural and technical components
High flow and thin-wall capability	Selected grades enable complex geometries, thin sections, and miniaturized component designs
Low moisture absorption	Helps maintain dimensional and electrical performance across changing environmental conditions
Electrical performance	Selected materials offer electrical insulation and tailored dielectric characteristics for advanced electronic applications
Low warpage	Supports accurate, stable components for precision assemblies and miniaturized designs
Metal and thermoset replacement potential	High thermal, mechanical, and chemical performance can support replacement of traditional materials in suitable applications

Processing capability

Celanese **Fortron® PPS**, **Vectra® LCP**, and **Zenite® LCP** technologies are designed for efficient processing using established thermoplastic manufacturing methods. Injection molding supports complex, precision components and thin-wall designs, while selected grades are suitable for extrusion, film and sheet processing, blow molding, coextrusion, and other specialized processing technologies.

High-flow characteristics, rapid filling, dimensional stability, and a broad range of reinforced and specialty grades enable manufacturers to address demanding component geometries while maintaining processing efficiency and high-quality finished parts.





Structural lightweighting and thermal management

Advanced structural and thermally conductive polymer technologies enabling lightweight design, metal replacement, functional integration, and high-performance components across demanding applications.

Celstran® long fiber reinforced thermoplastics (LFRT)

Celstran® from Celanese is a family of long fiber reinforced thermoplastics (LFRT) engineered to deliver **high stiffness, strength, impact resistance, creep resistance, dimensional stability, and low warpage** for demanding structural applications. Long fiber reinforcement creates an internal reinforcing structure within molded components, enabling significantly enhanced mechanical performance compared with conventional short fiber reinforced materials.

Available with a range of thermoplastic matrices and reinforcement technologies, Celstran® LFRT enables material performance to be tailored to demanding structural and functional requirements. The portfolio supports lightweighting, metal replacement, and component consolidation across automotive and mobility, industrial, consumer, energy, building and construction, and other demanding applications.

CoolPoly® thermally conductive polymers (TCP)

CoolPoly® TCP from Celanese is a family of thermally conductive polymers designed to **combine effective heat transfer with the processing and design advantages of thermoplastics**.

Available in electrically conductive and electrically insulating solutions, CoolPoly® TCP enables thermal management to be integrated directly into molded components while supporting lightweight design, corrosion resistance, functional integration, and potential metal replacement.

Suitable for applications including heat sinks, automotive lighting, LEDs, electrical and electronic components, charging technology, appliances, telecommunications, and industrial systems, CoolPoly® TCP provides manufacturers with greater design freedom for applications where efficient heat dissipation and electrical performance are critical.

Performance at a glance

Key property	Celstran® LFRT	CoolPoly® TCP
Primary performance	Structural reinforcement and lightweighting	Thermal management
Material technology	Long fiber reinforced thermoplastics	Thermally conductive thermoplastics
Reinforcement / filler technology	Long fiber reinforcement with application-specific fiber and matrix options	Thermally conductive filler systems
Thermal conductivity	Grade dependent	1–34 W/mK*
Electrical functionality	Specialty options available	Electrically insulating or conductive grades
Dimensional performance	High dimensional stability and low warpage	Grade dependent
Mechanical performance	High stiffness, strength, impact and creep resistance	Grade dependent
Metal replacement potential	Structural metal replacement	Thermal-management/heat-sink metal replacement
Processing	Injection molding and selected compression-based processes	Injection molding

*Across Celanese's current CoolPoly® D- and E-Series ranges; individual grade performance varies.





Key benefits

Material performance	Value for manufacturers
High stiffness-to-weight performance	Supports lightweight structural components while maintaining demanding mechanical performance
High impact resistance	Long fiber reinforcement enables durable components capable of absorbing significant mechanical loads and impact
Excellent creep resistance	Supports structural components exposed to sustained mechanical loading
Low warpage	Helps maintain dimensional accuracy in large, complex, and structural molded components
Metal replacement potential	Enables suitable metal components to be redesigned in lightweight thermoplastics
Thermal conductivity	CoolPoly® enables heat to be transferred through molded polymer components for effective thermal management
Electrical property options	Electrically conductive and electrically insulating CoolPoly® grades enable solutions to be tailored to application requirements
Functional integration	Thermoplastic processing can combine thermal, structural, electrical, and geometric functions within a single molded component
Corrosion resistance	Polymer solutions provide an alternative to metals in applications where corrosion resistance is important
Design freedom	Injection molding and other thermoplastic processes enable complex geometries and component consolidation

Processing capability

Celstran® LFRT and **CoolPoly® TCP** technologies combine advanced material performance with established thermoplastic processing capabilities. Celstran® LFRT materials support high-strength structural components through processes including injection and compression-based molding technologies, while CoolPoly® TCP thermally conductive plastics can be processed using conventional injection molding equipment.

These thermoplastic processing capabilities enable complex geometries, component consolidation, functional integration, and efficient production, helping manufacturers replace multi-part or metal-intensive designs with lightweight, application-specific polymer solutions.





Flexible polymers and elastomers

Flexible SEBS, SBS and polypropylene technologies combining elasticity, soft-touch performance, durability, lightweighting and efficient thermoplastic processing across demanding applications.

Laprene® styrene ethylene butylene styrene (SEBS)

Laprene® SEBS from Celanese is a family of thermoplastic elastomers combining **rubber-like elasticity and softness with the processing advantages of thermoplastic materials**. Its saturated SEBS structure provides excellent resistance to UV aging, ozone and weathering, supporting reliable performance across demanding indoor and outdoor applications.

Available across a broad hardness range and with grades tailored to different processing and performance requirements, Laprene® SEBS combines high elastic recovery, fatigue resistance, chemical resistance and attractive aesthetic properties. Selected grades provide additional functionality including high fluidity, transparency, adhesion to polar polymers and suitability for food-contact applications.

Suitable for automotive and mobility, electrical and electronics, healthcare, consumer goods, energy and industrial applications, Laprene® SEBS provides a versatile solution for seals, grips, flexible components, tubes, hoses, vibration damping, insulation and overmolded applications.

Sofprene® styrene butadiene styrene (SBS)

Sofprene® SBS from Celanese is a family of thermoplastic elastomers based on styrene-butadiene-styrene block copolymer technology. It combines **excellent elasticity, softness and flexibility with straightforward thermoplastic processing**, providing an efficient alternative to conventional rubber materials across a broad range of flexible applications.

Sofprene® SBS maintains flexibility at temperatures down to approximately -50°C and can be formulated to address different hardness, aesthetic and processing requirements. Appropriate stabilization and additive technologies can also be used to enhance resistance to heat, UV exposure and ozone where required.

With its combination of elastic performance, processability and design flexibility, Sofprene® SBS is well suited to consumer goods, grips, flexible components, footwear, industrial products and other applications requiring softness, resilience and reliable low-temperature flexibility.

Tecnoprene® polypropylene compounds (PP)

Tecnoprene® PP from Celanese is a family of polypropylene compounds developed for demanding technical applications requiring an **effective balance of mechanical performance, impact resistance, chemical resistance, processability and lightweight design**.

The portfolio includes glass fiber reinforced, mineral-filled, high-crystallinity, elastomer-modified, aesthetic and flame-retardant technologies, together with specialist formulations for application-specific requirements. Reinforced Tecnoprene® PP grades provide high rigidity and strong mechanical performance, while the broader portfolio enables properties to be tailored according to structural, aesthetic and processing requirements.

Tecnoprene® PP is used across automotive, electrical and electronics, industrial, consumer and other technical applications, providing manufacturers with a versatile polypropylene platform for lightweight components, housings, structural parts and other demanding molded products. Selected ECO-R technologies are also available with recycled content.





Performance at a glance

Key property	Laprene® SEBS	Sofprene® SBS	Tecnoprene® PP
Primary performance	Elasticity, softness and environmental resistance	Elasticity, softness and low-temperature flexibility	Lightweight mechanical and structural performance
Temperature performance	Operating range approximately -50°C to +120°C, grade dependent	Flexibility maintained to approximately -50°C	Grade dependent
Weather and UV resistance	Excellent	Requires appropriate stabilization for demanding exposure	UV-stabilized options available
Chemical resistance	Excellent resistance to many chemical agents	Grade and application dependent	High chemical resistance
Hardness / stiffness	Broad range from very soft to semi-rigid	Broad elastomeric range	Rigid through impact-modified formulations
Specialty options	Transparent, high-flow, adhesion and food-contact grades	Stabilized and application-specific grades	Glass fiber, mineral-filled, high-crystallinity, elastomer-modified, aesthetic and flame-retardant grades
Processing	Injection molding, extrusion, blow molding, calendering and thermoforming	Conventional thermoplastic processing	Injection molding, extrusion, blow molding and rotational molding

Key benefits

Material performance	Value for manufacturers
Elastic recovery and flexibility	Laprene® SEBS and Sofprene® SBS provide rubber-like behavior while retaining thermoplastic processing advantages
Soft-touch performance	Supports comfortable, tactile and ergonomic surfaces for consumer, automotive and industrial components
Low-temperature flexibility	Selected elastomer technologies retain flexibility in demanding low-temperature environments
Weathering resistance	Laprene® SEBS provides excellent resistance to UV aging, ozone and weathering for exposed applications
Broad hardness and property range	Enables material performance to be tailored from very soft elastomeric components through to rigid PP compounds
Lightweight mechanical performance	Tecnoprene® PP supports durable structural components while maintaining the low-density advantages of polypropylene
Functional modification	Reinforcement, flame retardancy, aesthetic modification, adhesion and other specialist options support application-specific requirements
Processing versatility	Established thermoplastic processing technologies support efficient manufacturing and complex component geometries
Overmolding and co-molding potential	Selected materials enable soft and rigid functionality to be combined within integrated component designs
Recyclability	Thermoplastic material technology provides opportunities for recycling and reprocessing compared with conventional crosslinked rubber systems

Processing capability

Laprene® SEBS and **Sofprene® SBS** thermoplastic elastomers can be processed using conventional thermoplastic manufacturing technologies, including injection molding, extrusion, blow molding, calendering and thermoforming. Their thermoplastic structure enables efficient processing while delivering the elastic recovery and softness associated with rubber materials.

Tecnoprene® PP supports injection molding, extrusion, blow molding and rotational molding, with grade-specific formulations enabling processing and material performance to be tailored to component geometry and application requirements.



Wear-resistant UHMWPE solutions

Ultra-high molecular weight polyethylene delivering exceptional wear resistance, impact strength, low friction, chemical resistance, and reliable performance across demanding applications.

GUR® ultra-high molecular weight polyethylene (UHMW-PE)

GUR® from Celanese is a family of ultra-high molecular weight polyethylene (UHMW-PE) materials engineered to deliver **exceptional wear resistance, impact strength, low friction, chemical resistance, and mechanical performance** across an exceptionally broad temperature range. Its extremely long polymer chains provide a distinctive combination of toughness, self-lubricating properties, and resistance to abrasion and environmental stress cracking.

Available in a broad range of grades, particle sizes, and molecular weights, GUR® supports applications ranging from industrial wear components, profiles, and bulk material handling systems to filtration, porous components, lithium-ion battery separators, functional additives, high-performance fibers, and medical applications. Selected premium medical grades are also used in orthopedic implants, including articulating bearing surfaces for joint replacement.

Performance at a glance

Key property	Typical GUR® performance
Service temperature range	-270°C to +80°C*
Impact strength	Exceptionally high
Abrasion resistance	Excellent
Coefficient of friction	Low
Chemical resistance	Very high
Environmental stress cracking	Highly resistant
Specialty options	Medical, food-contact, tribological, porous and application-specific grades

Key benefits

Material performance	Value for manufacturers
Exceptional wear resistance	Supports long component life in abrasive, sliding, and high-wear applications
Very high impact strength	Enables tough, durable components capable of absorbing high levels of mechanical energy
Low coefficient of friction	Provides excellent sliding performance and can reduce friction in moving components
Self-lubricating properties	Supports smooth operation in applications where reduced lubrication requirements are advantageous
High chemical resistance	Provides resistance to acids, alkalis, and many other chemicals in demanding service environments
Environmental stress-crack resistance	Supports reliable long-term performance under mechanical and environmental stress
Broad temperature performance	Maintains useful mechanical performance across an exceptionally wide service-temperature range
Porous material capability	Specialized processing enables filtration, wicking, sound-dampening, and other porous structures
Broad functional versatility	Grades support applications ranging from structural wear components to membranes, fibers, additives, and medical technologies
Specialty grade options	Medical, food-contact, tribological, and other specialized grades enable application-specific material selection



Processing capability

Due to its extremely high molecular weight and resulting high melt viscosity, standard **GUR® UHMW-PE** requires specialized processing technologies. Compression molding and ram extrusion are commonly used to produce sheets, profiles, and other semi-finished forms, which can subsequently be machined into finished components.

Depending on grade and application, GUR® UHMW-PE can also be processed using pressure-less sintering, gel extrusion, and other specialized technologies to produce porous components, membranes, fibers, and functional structures. Celanese also offers selected melt-processable grades suitable for injection molding and screw extrusion, extending the processing versatility of the GUR® UHMW-PE portfolio.

Where Celanese material technologies perform

Celanese's portfolio combines specialty engineering thermoplastics, high-performance polymers, long fiber reinforced materials, thermally conductive solutions, thermoplastic elastomers, polypropylene compounds, and UHMWPE technologies, enabling manufacturers to address a broad range of mechanical, thermal, electrical, tribological, processing, and functional requirements.

With material solutions spanning precision components, high-temperature applications, structural lightweighting, thermal management, flexible and soft-touch parts, wear-resistant components, and miniaturized electronics, Celanese supports applications across automotive and mobility, electrical and electronics, industrial, consumer goods and appliances, medical and healthcare, energy, building and construction, and other specialized markets.

Industry	Typical applications
Automotive and mobility	Precision gears and mechanisms, fuel system components, under-the-hood parts, structural components, brackets and housings, thermal management components, lighting systems, electrical connectors, sensors, seals, vibration-damping components, interior and exterior parts
Electrical and electronics	Connectors, switches, sockets, sensors, coil formers, circuit protection components, electrical housings, miniature precision components, antennas, LED components, heat sinks and thermal management systems
Industrial	Gears, bearings, rollers, guides, valves, pumps, seals, conveyor components, wear parts, fluid-handling components, machinery components and structural parts
Medical and healthcare	Drug delivery devices, inhalers, autoinjectors, diagnostic equipment, surgical instruments, fluid-handling components and orthopedic implant applications using selected medical grades
Consumer goods and appliances	Appliance components, handles and grips, mechanisms, gears, housings, soft-touch components, power-tool parts, sporting goods and durable consumer products
Energy and electrification	Battery separators, EV electrical components, charging systems, connectors, insulation components, thermal management systems and components for energy infrastructure
Building and construction	Structural and reinforced components, fittings, fasteners, mechanisms, technical profiles, sliding and wear components, and selected fluid-handling applications
Thermal management and lighting	Heat sinks, LED lighting components, automotive lighting, electronic housings, battery thermal management components and other heat-dissipation applications
Filtration and fluid handling	Porous filters, filter elements, water filtration components, valves, pumps, seals, fittings and chemically resistant fluid-handling components





Why work with Omya Performance Polymer Distribution?

Customers sourcing Celanese materials through Omya Performance Polymer Distribution benefit from:

- A comprehensive portfolio of advanced high-performance and engineering polymer material technologies
- Local commercial, technical and application support
- Material selection and grade optimization aligned with performance, processing and regulatory requirements
- Processing guidance and troubleshooting support
- Reliable regional logistics and multi-country coordination, subject to product availability
- Close collaboration with Celanese technical teams from concept through production

Let's develop your next application together

Celanese's engineering plastics portfolio enables manufacturers to achieve reliable performance, efficient processing, and scalable innovation across a wide range of applications.

Whether you are optimizing an existing material selection or developing a new application, Omya Performance Polymer Distribution works closely with you to identify the right solution – supporting you from initial concept through to full-scale production.

Contact Omya Performance Polymer Distribution

To discuss your application, material requirements, or grade selection, contact your local Omya Performance Polymer Distribution representative or visit: www.omya.com



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Talk to an expert

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