

NEXT-LEVEL SPORTING GOODS SOLUTIONS

PERFORMANCE POLYMERS





MADE OF TOUGHER STUFF

Athletes and sports enthusiasts always ask more. Of themselves. Of their sport. Of the products they trust for the next leg of the journey. Inspired by their drive, Celanese is forever pushing the limits of what thermoplastics can do for sporting goods, athletes, and their world.

EXPECT MORE FROM OUR MATERIALS

ADVANCED PERFORMANCE—lightweight, supportive, comfortable, flexible, resilient

SMART TECHNOLOGY—intuitive, responsive, connected, intelligent

CUSTOM VALUE—dimensional, breathable, transparent, colorful

HEIGHTENED EFFICIENCY—fast, easy, automated, on demand

REAL SUSTAINABILITY—bio-based, renewable, recycled, recyclable

Flexible, impact resistant, and easy to process, Celanese performance materials are made to help brand owners and their customers reach ever more ambitious goals and compete as never before.

Celanese makes it easy for brand owners to pursue both their short- and long-term sustainability goals. Our innovation culture embraces green chemistry principles, which guide everything we do in pursuit of our purpose—to empower the world with the essential innovations to thrive.

BECAUSE THE FUTURE CAN'T WAIT

We innovate now to help customers and the world thrive—through sustainable product development, green chemistry principles, and circular economy innovations.

We protect now by reducing water, waste, and energy use—and helping our customers do the same. This is demonstrated by extending our environmental goals in 2021 and 2022 to include a 30% intensity reduction in GHG emissions, a 10% intensity reduction in net energy and water consumption, and a 15% intensity reduction in waste disposal based on production—all by 2030.

We empower now by enabling the health and well-being of everyone who works for us, with us, and around us—and by making intentional strides toward diversity, equity, and inclusion.

SERIOUS ABOUT SUSTAINABILITY

ALWAYS A STEP AHEAD

For every shoe, for every sport, Celanese performance polymers present opportunities to elevate safety, durability, and comfort.

Our advanced material science works across footwear elements to provide outstanding dimensional stability, fatigue resistance, insulation against the elements, flexibility, and easy fit—all with a nearly weightless feel.

HIGH-PERFORMANCE APPLICATIONS

- Heel collar, tab, counter
- Tongue, laces
- Toe cap
- Outsole, insole, midsole
- Torsion bar, sole plate, sud plate
- Blade support, grind plate
- Buckles, eyelets, zippers, fitting systems, bindings



RIDING SOLUTIONS

ON THE OPEN ROAD

With the right components, riders get more power per pedal, accelerate faster, and enjoy the ride longer with less risk of strain, injury, or damage.

Celanese materials optimize the ride by resisting impact, fatigue, and tearing. With exceptional electrical properties, they help batteries go the distance. They retain mechanical function through extreme temperatures, wet conditions, rough terrain—no matter what the weather or the route has in store.

HIGH-PERFORMANCE APPLICATIONS

- E-bike motors: gears, bobbin support, housings, electrical connectors, insulators
- Battery, charging systems, hoses
- Saddle shell, foam insert, shock absorbers, cover
- Suspension components and frame
- Wheels, tires, inner tubes, pump components
- Cycling shoe, buckle, sole
- Display and lighting devices, shifters
- Pedal, hub, sprocket, derailleur components, brake calipers, mudguards





WINTER SPORT SOLUTIONS

LET IT SNOW

Low temperatures and high adventure are no match for quality snow gear. Celanese materials flex with the slopes and on the ice to provide the comfort, support, and tensile strength winter sport enthusiasts need to stay in the moment at every turn.

Our performance polymers are specially engineered to maintain their functional properties in extremely cold temperatures and offer water resistance on or off the ice and snow.

HIGH-PERFORMANCE APPLICATIONS

- Snow board binding base spoiler strap and buckles
- Snow board top layer, inner layer, tip
- Ice skate buckle, eyelet, blade support, shell
- Snow boot rear spoiler, buckle, strap
- Cross-country ski binding lock and base, shoe energy management, collar, strap, buckle
- Ski pole handle, basket
- Step-in binding base, lock
- Snow shovel handle, blade
- Ice axe buckle component, handle
- Ice crampon buckle, lock, base

FITNESS EQUIPMENT SOLUTIONS

GETTING STRONGER

When it's time to hit the gym for cardio and strength training, equipment should be equal to the challenge—offering steady resistance, supportive safety, and the endurance to push through every rep.

Celanese materials are specially designed to provide resilience and cushion where it counts to protect muscles and joints, fight fatigue and strain, and prolong equipment life.

HIGH-PERFORMANCE APPLICATIONS

- Cardio exercises: treadmills, ellipticals, exercise bikes, rowers
- Strength exercises: leg extension, jungle, training bench, pull down machines





WEARABLE DEVICE SOLUTIONS

NEW PERSONAL BEST

Empower athletes to go the extra mile with wearable tech that is lighter, softer, smarter, and more durable. Today's wearable devices monitor biometrics and apply machine learning to inform the strongest, safest workouts.

Celanese performance polymers and solutions enable comfortable, reliable performance and flexible, sustainable design. Our wearable tech materials are UV stable and chemically resistant. They deliver soft-touch comfort and handle sweat in stride. Low-density solutions lighten the load and reduce environmental impact. Sophisticated components provide excellent sound control and sensory haptics for accurate activity tracking.

HIGH-PERFORMANCE APPLICATIONS

- Earbuds, headlamps, other head-worn devices
- Smart watches, GPS, activity trackers, clips, straps
- Performance sensors for athletic wear
- Foot pods, smart shoes

SOLUTIONS FOR ACCESSORIES

ON THE MOVE

The world of sport is wide. Celanese is here to inspire even greater possibilities and performance with products that protect and support, strengthen and empower.

Our extensive line of polymer solutions is formulated for weatherability, impact resistance, and aesthetic range so that athletes and hobbyists can feel, play, and look their best—whether on the court or course, over the waves or on the trails.

HIGH-PERFORMANCE APPLICATIONS

- Yoga and exercise mats
- Protective eyewear, helmets, pads, guards, gloves
- Massage and wellness devices
- Boating masts, cleats, frames, pulleys, propellers
- Golf club heads, carts, balls, tees
- Backpack zippers, buckles
- Tennis string guides, frame inserts
- Diving equipment



FEATURED PRODUCTS

STARTING LINEUP

Celanese offers a range of performance materials ideal for sport. All are easy to process and adaptable to meet unique manufacturing requirements. All include options for advanced sustainability—like use of plant-based feedstock, municipal waste and renewable energy sources, recycled content, and recyclability— to empower more environment-conscious manufacturing processes and consumer behaviors.

	Key properties	Top applications
<p>Hytrel® thermoplastic polyester elastomer (TPE) The single material that excels at an extraordinary range of jobs</p>	<ul style="list-style-type: none"> • Lightweight, breathable • Resilient with high rebound • Strong, supportive, and tear-resistant 	<ul style="list-style-type: none"> • Almost every part of athletic shoes, from foam to filament • Ski, snowshoe, snowboard bindings, straps • Bike saddle insert • Inner tube • Ski tip, pole handle • Boot cuff, collar, spoiler • Eyewear frames • Protective padding • Windsurfing mast base
<p>Zytel® nylon (PA) A versatile material with strong endurance</p>	<ul style="list-style-type: none"> • Strength, stiffness, dimensional stability • Resistant to heat, moisture, chemicals, electricity, fatigue 	<ul style="list-style-type: none"> • Sole plates and sud plates • Bike saddle insert, support • Bike accessories, components • Buckles, eyelets, locks, fitting systems • Blade support, spoiler, carving plate • Bindings, straps, bases • Wheels, gears, sprockets • Ski pole handle, basket • Eyewear frames • Padding shell • Windsurfing wishbone, base plate • Boom pulley frame



	Key properties	Top applications
<p>Vamac® ethylene acrylic elastomers (AEM) Resists the effects of harsh environments</p>	<ul style="list-style-type: none"> • Low-temperature performance, high-temperature durability • Excellent resistance to fluids • Excellent NVH vibration damping • Compressive stress relaxation 	<ul style="list-style-type: none"> • Sealing elements • Tubes and hoses • Wire and cable
<p>Rynite® polyethylene terephthalate (PET) Adds strength and reliability to electrical components</p>	<ul style="list-style-type: none"> • UV-resistant • Dimensional stability • Superior flow characteristics • High-gloss finish 	<ul style="list-style-type: none"> • Electrical and electronic components requiring high temperature resistance • Electrical devices, photovoltaic panels, switches and other critical energy components stronger and reliable
<p>Crastin® polybutylene terephthalate (PBT) An easy-processing material with a powerful mix of benefits</p>	<ul style="list-style-type: none"> • Electrical insulation properties • Excellent dimensional properties and stability versus moisture • Heat resistant • Easy to process 	<ul style="list-style-type: none"> • Cost effective solution bobbins • Electrical insulators and connectors • Battery system applications

READY FOR MORE?

Partner with Celanese to access decades of ongoing R&D—and support from our teams of engineers, scientists, and designers. We're ready to share our wins in sport-ready materials and collaborate with you on solutions that continue to change the game.

ENGINEERED MATERIALS

Celanese Engineered Materials (EM) delivers a broad range of technology-based products and solutions to the consumer goods, industrial, transportation, electronics, and healthcare markets. We partner with our customers to drive innovation, offering our expertise in polymer and materials science and in-house application development and testing capabilities. EM collaborates with you throughout the value chain to enable materials systems solutions for demanding applications and environments. Learn more at celanese.com.

GLOBAL CAPABILITY, LOCAL SOLUTIONS

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Japan
Russia
Switzerland
Turkey

Celanese Major R&D Centers

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