



HIGH PERFORMANCE POLYMERS



Engineering materials designed
to perform

Sport & Leisure



Performance and strength: RadiciGroup sports materials

RadiciGroup products are widely used in the manufacture of components for **sports equipment**. Engineering polymers can be found in parts for **ski boots, treadmills, bicycles and sports glasses**, where **resistance, durability and lightness are essential**.

All athletes, whether amateurs or professionals, need products that do not compromise on design, durability and ergonomics. RadiciGroup's engineering polymers are developed to guarantee maximum performance.

The **Radilon®** line includes materials with specific characteristics such as optimum stiffness and high impact resistance, even at low temperatures. The **Radistrong®** range is designed to offer an ideal combination of excellent mechanical strength and superb aesthetic appearance, as well as long-term performance.

These solutions enable lighter components without compromising technical excellence, making them the ideal choice for sports applications.



Where performance meets purpose

Our sustainable materials empower the future of sport **with technical innovation** and **respect for the planet**. We engineer low-impact materials designed to meet the specific demands of sports applications – ranging from technical apparel to gear and accessories.

Our advanced materials include **Renycle®** post-industrial and post-consumer recycled polyamides for lightweight, durable sports products and **Bionside®** bio-based polyamides, like **Radilon® D** (PA610) and **Radilon® TT** (PA1012), offering flexibility and renewable material sources. These solutions combine high technical performance with eco-conscious innovation in terms of CO₂ reduction and circularity, helping to shape a more sustainable future for the sport sector.

Why choose RadiciGroup solutions?

We combine advanced material engineering with uncompromising safety to elevate performance in every sport and leisure application.

From enhancing comfort and durability to enabling lighter, less resource intensive designs, our high-performance materials and custom solutions empower your brands to push boundaries and redefine user experience.

Product name	Product description
radilon [®]	Polyamide engineering polymers (PA6, PA66, copolymers, PA612, PPA and other specialty PAs for high temperature resistant applications) for injection moulding, extrusion and blow moulding.
radistrong [®]	Specialty PA66 engineering polymers for injection moulding. The main distinguishing features are high mechanical properties, better property retention even with moisture absorption and excellent surface appearance. Ideal for metal replacement.
BIONSIDE [®]	Bio-based offering of the Radilon family, including Radilon [®] D (PA610) and other experimental grades, with polymer bio-based content ranging from 41% to 100%.
RENYCLE [®]	Low environmental-impact polyamide compounds mainly based on regenerated secondary raw materials (PA6 and PA66) obtained from the recovery of selected post-industrial and post-consumer recycled polyamides.

Find the ideal product for your needs
and download the technical data sheet.



Typical application segments



Outdoor Sports



Winter Sports



Indoor Sports and Equipment

Outdoor Sports

Outdoor sports require materials that deliver strength, lightweight performance and long-lasting reliability. From **cycling components to water sports equipment and tennis accessories**, RadiciGroup provides advanced material solutions tailored to high-performance outdoor applications.

Designed for injection moulding of complex, precision parts, these solutions ensure excellent impact resistance, dimensional stability and design freedom. RadiciGroup polyamide materials – including **Radistrong®**, **Renycle®** and **Radilon®**– are engineered to withstand weather exposure, moisture and mechanical fatigue, performing consistently in demanding outdoor conditions. By combining high technical performance with sustainable and efficient processing, RadiciGroup supports outdoor brands in developing light and strong products that raise the bar on both athletic performance and user experience.

Applications

Bike Structural Components

Cyclist safety and comfort depend on reliable components. RadiciGroup’s high-performance polymers deliver exceptional properties for essential e-bike parts, ensuring both functionality and aesthetics.

Radistrong® – PA66-based high-performance special polyamides designed for demanding structural applications, like bicycle frame parts and related components.

- Lighter parts.
- High strength and fatigue resistance.
- Designed to withstand environmental exposure for long-lasting use.
- Excellent surface finish with no need for painting, thus reducing product costs and processing.



In-line Roller – Wheel Frame

Radilon® A – PA66 polymer-based compounds featuring appropriately modified grades ideal for wheel frames.

- Good mechanical properties and stiffness.
- Good impact resistance.
- Ensure stability, control and responsiveness while skating.

Renycle® – Circular material range based on partially or fully recycled PA66 or PA6-based polymer.

- Good mechanical performance.
- Improved impact resistance.
- Specifically engineered to combine good performance with lower CO₂ emissions compared to the equivalent first-choice grade*.



* Based on LCA in accordance with ISO 14040 and ISO 14044 standards. Detailed data available upon request.

Winter Sports

Winter sports demand materials and components that can withstand the harshest environmental conditions – extreme cold, moisture and mechanical stress – while maintaining top-level performance even at high altitudes.

Athletes rely on gear that remains reliable and efficient in unpredictable climate conditions, thus making durability, impact resistance and thermal stability essential features in material selection. Polyamides, such as **Radilon®** (PA6 or PA66), are widely used in ski applications, because they combine **strength, flexibility and resistance to temperature variation**. They are lightweight yet durable, offering excellent impact resistance and continuous high performance in cold conditions.

RadiciGroup solutions made from recycled materials – **Renycle®** range – or from bio-based sources – **Bionside®** (**Radilon® TT** and **Radilon® D**) family – can be **sustainable choices** for winter sport applications.

Applications

Ski and Snowboard Bindings

Radilon® A – Appropriately modified PA66 grades achieve high mechanical properties, even at low temperatures.

- High stiffness and excellent impact resistance.
- Outstanding low-temperature performance.
- Good wear and abrasion resistance.

Renycle® A – Circular solutions based on partially or fully recycled PA66 base polymer.

- High mechanical performance.
- Excellent impact resistance, even at low temperatures.
- Specifically engineered to combine high performance with lower CO₂ emissions compared to the equivalent first-choice grade.



Ski Boots

Radilon® TT (Bionside®) – Long Chain Polyamide PA1012 combining very low water absorption with stable performance in all conditions.

- Excellent low-temperature impact resistance.
- High chemical resistance, ensuring stable performance in harsh conditions.
- High flexibility for demanding applications.
- Partially bio-based content (43% of base polymer by weight).

Radilon® D (Bionside®) – Long Chain Polyamide PA610 with good dimensional stability and low moisture absorption.

- Excellent low-temperature impact resistance.
- Stable performance in harsh conditions.
- Good flexibility.
- Partially bio-based content (64% of base polymer by weight).



Indoor Sports and Equipment

Indoor sports and equipment span a wide range of applications, from structural components in fitness machines to functional and design-driven accessories. Thanks to their excellent mechanical properties and versatility, RadiciGroup materials are ideal for producing robust **gym equipment frames and panels**, as well as **fitness equipment covers** that enhance product design.

These advanced solutions are also widely used in **protective gear, sports eyewear and high performance apparel**, ensuring durability, comfort and safety for athletes.

Radilon®, **Radilon® Mixloy**, **Radistrong®**, **Bionside®** and the broader RadiciGroup portfolio enable designers and manufacturers to create next-generation indoor sports equipment that is **strong, light, durable and sustainable** – perfectly aligned with the needs of today's athletes and modern training facilities.

Applications

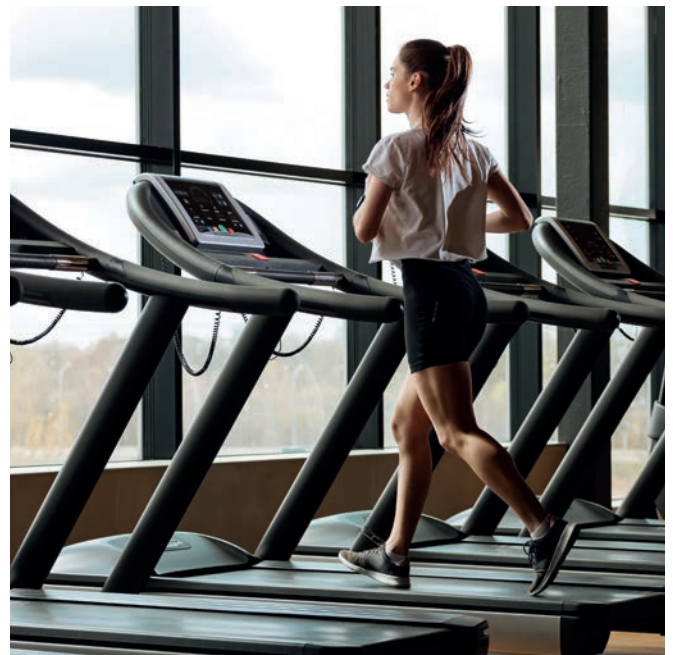
Treadmills

Radilon® Mixloy – PA/ABS blend delivering the ideal balance of design appeal, mechanical strength and chemical resistance.

- Ideal for equipment covers requiring both visual aesthetic quality and functional durability.
- Resistant to detergents and alcohol-based cleaning solutions.
- Lower density than amorphous polymers, enabling lighter components without compromising performance.

Radistrong® – High-performance specialty polyamide PA66 designed for demanding structural applications.

- Low moisture rate absorption.
- Reliable metal-replacement solution offering excellent stiffness.
- Excellent surface quality.



Sport Shoes

Radilon® A – PA66, when appropriately glass reinforced, is an ideal solution for rigid sports midsoles or outsoles, including cycling shoe soles.

- High stiffness and wear resistance.
- Efficient power transfer and long-lasting performance.

Radilon® TT (Bionside®) – Long Chain Polyamide PA1012 is the solution for next-generation shoe insoles, combining comfort, durability and premium performance.

- Excellent chemical resistance for long-lasting reliability.
- Very low moisture absorptio.
- Low extractables supporting cleanliness and hygiene
- Outstanding flexibility and stress-cracking resistance for superior durability under continuous load and bending.





Discover more. Explore further



RadiciGroup new website

The new RadiciGroup website is now live! We've redesigned everything with you in mind. Explore our improved navigation, expanded resources, and streamlined experience.

radicigroup.com

RadiciGroup Product Finder

Find the ideal product for your needs and download the technical data sheet.



RadiciGroup. Leading materials.

RadiciGroup is a leader in the manufacture of polyamide polymers and high-performance engineering polymers, including recycled and bio-based solutions.

At the heart of our strategy are our customers.

We listen to your needs and work side by side with you to co-create innovative, reliable and value-adding solutions. Our polymers support your success across a wide range of industries: automotive, electrical and electronics, consumer and industrial goods, water management, transportation, household appliances and sport.

We are a truly global company: with our worldwide production and commercial sites, we combine central competence and vision with local presence and flawless execution, delivering both off-the-shelf and tailor-made products, as well as dedicated services.

Customer satisfaction drives everything we do, enabling long-lasting partnerships and fostering the development of increasingly sustainable applications through advanced materials. Our goal is better total cost of ownership and lower environmental impact for all our customers and end users.

Sustainability

Every day at RadiciGroup, we work to make circularity our business model. We optimize the use of materials while fine-tuning our processes, designing out waste and promoting recyclability from the earliest product design phases. We are always looking for low-impact solutions in terms of natural resources and energy. We rely on certified management systems for Quality, Health and Safety, Environment and Energy to keep our companies in line with the highest sustainability standards. Since 2004, the Group has released its Sustainability Report every year.



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