

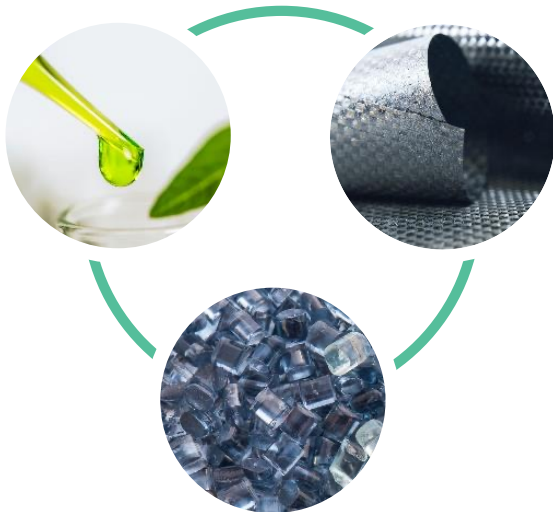
ARKEMA

INNOVATIVE
MATERIALS FOR A
SUSTAINABLE WORLD

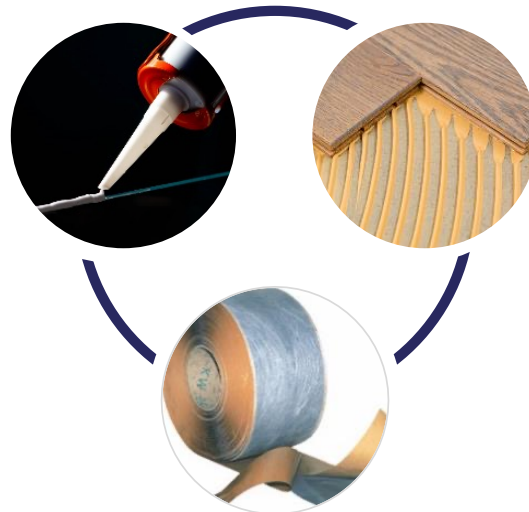
Our know-how is centered on materials science

3 unique and complementary capabilities
to seize opportunities from global megatrends

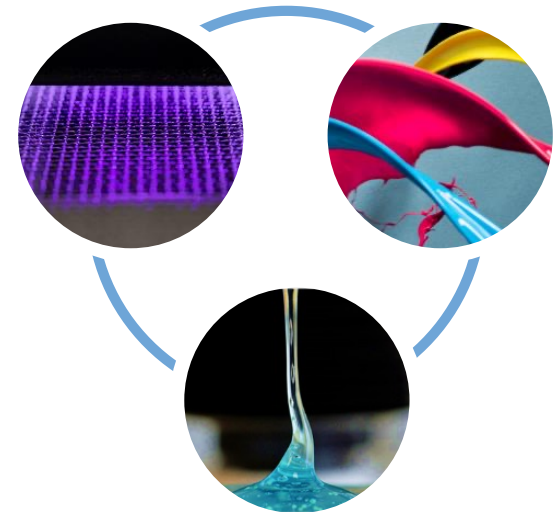
**Creating and strengthening
materials**



**Bonding and assembling
materials**



**Protecting and modifying
materials**



Innovative materials for a sustainable world



Bio-based

Advanced Bio-Circular materials derived from sustainable castor oil



Recycling

A virtuous recycling program for our partners



Durability

Our products are highly durable in their intended applications

ADVANCED BIO-CIRCULAR MATERIALS
THE CIRCLE OF LIFE MEETS THE CIRCULAR ECONOMY



ARKEMA

Positive Social & Environmental Impacts

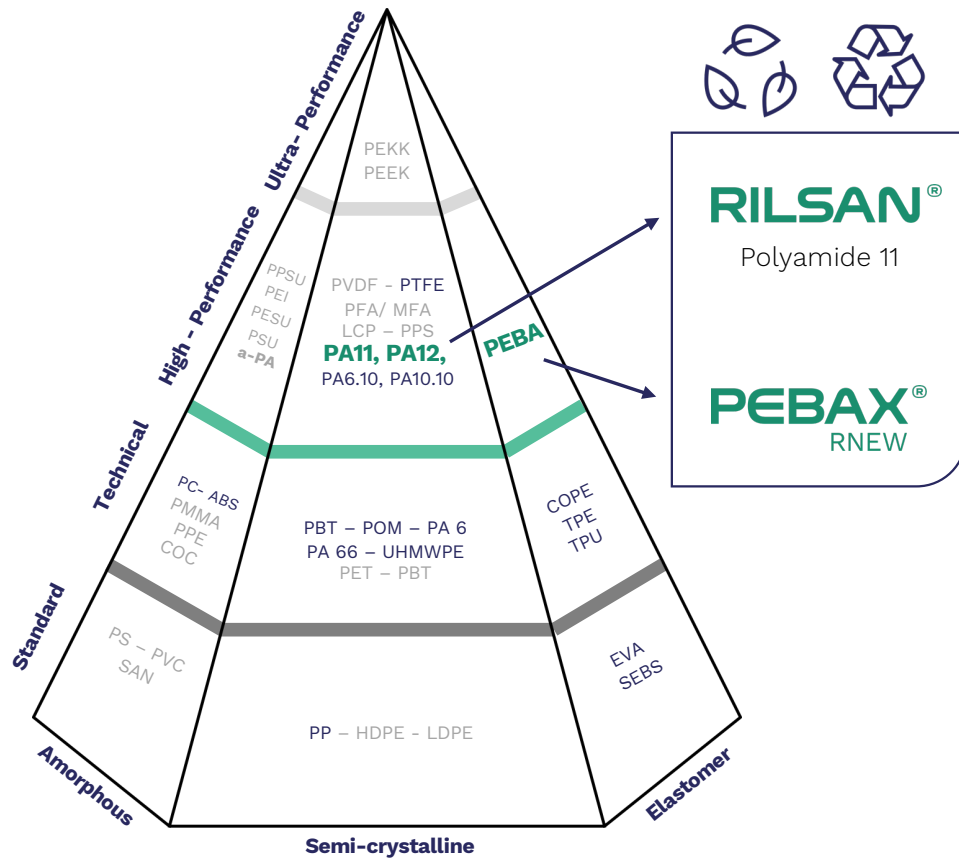
*Life Cycle Analysis
Pragati – Castor Oil Initiative*



ARKEMA

ADVANCED BIO-
MATERIALS FOR THE
SPORTS INDUSTRY

High Performance Materials for the sports industry



Unique properties for sports equipments



Lightness



Energy return



Fatigue resistance



Impact resistance



Consistent performance at high & low temperature



Dimensional stability

A unique, integrated, and circular bio-based supply chain

The Circle of Life Meets the Circular Economy



An integrated recycling facility in Italy



AGIPLAST®

Virtucycle® program :

A virtuous program for specialty polymer recycling.
Recycling and **Recycled** offer for Polyamide 11, Polyamide 12 and PEBA thermoplastic elastomer, with no compromise on **performance**.



Example of application :

Recycled Polyamide 11 used in tennis rackets for bumpers, grommets and cap

A wide range of applications in high-end sports equipments



Winter sports

MARKET DEMAND FOR STIFF AND LIGHT PRODUCTS



PEBAX[®]
RNEW

USED BY MAJOR BRANDS FOR SUSTAINABLE
SOLUTIONS FOR SKI BOOTS, TOPSHEETS & BINDINGS



**Impact resistance at
low temperature**



**Stable modulus
across
temperatures**



**Exceptional
lightness**



Bio-based

NEW DEVELOPMENTS

Continuous evolution of the portfolio to meet the market's demands :

- 3 concentrations of recycled **Carbon-Fiber-reinforced Polyamide 11**
- **High-modulus, non reinforced sustainable Pebax® polymer grades**
- **100% bio ski topsheet**



Cycling

RILSAN®

**CARBON FIBER-REINFORCED
POLYAMIDE 11 GRADES**



**USED FOR ENHANCING PERFORMANCE IN BIKE FRAMES, SADDLE
SHELLS, PEDALS, CYCLING SHOES AND CLEATS**



**High stiffness even
with very thin wall
profiles**



**Exceptional
lightness**

NEW DEVELOPMENTS

Ultra high stiffness compounds using **unique combination** of **bio neat resin** as matrix with **carbon fibers**



Eyewear

LIGHTNESS REQUIREMENT IN SPORTS EYEWEAR



RILSAN®
CLEAR

USED BY MAJOR BRANDS



**High rigidity with 1.6
to 2 Gpa modulus**



Transparency



**Exceptional
lightness**



**Chemical
resistance**

NEW DEVELOPMENTS

Partially bio-based portfolio continuously evolving to meet the market's demands.
Investment in a new production plant in Singapore, **tripling our capacity.**



Footwear

ATHLETES NEEDED A LIGHTWEIGHT SHOE SOLUTION CAPABLE OF ENHANCING REACTIVITY WITH AN EXPLOSIVE, DYNAMIC FEEDBACK



PEBAX®

**USED BY MAJOR BRANDS FOR HIGH PERFORMANCE FOOTWEAR :
RUNNING, TRACK & FIELD, TRAIL, CLEATED**

**LIGHTNESS & HIGH
ENERGY RETURN FOAM**

COMBINED WITH

SNAPPY SHANK



Lightness



**Exceptional energy
return**



Snappiness



New applications – New collaborations – New horizons



ALPINESTARS Tech-Air® 5 Plasma : Integrated Air-bag system for motorcrossing featuring Pebax® Rnew® polymer



NYGUARD Mono-material zippers made in Rilsan® Polyamide 11



RADICI GROUP Bio-based yarn made with Rilsan® Polyamide 11



**Looking for high-performance polymers to develop high-end sports equipments ?
Contact us !**