KUORI

WASTE TURNS MATERIAL

BIOWA Portfolio

KUORI

KUORI, a Swiss B2B cleantech company, develops and supplies biobased and recyclable thermoplastic elastomer (TPE) materials incorporating upcycled food industry sidestreams such as olive pits and walnut shells.

Designed as more sustainable alternatives to conventional TPU and rubber, selected KUORI grades are engineered so that abrasion-generated particles biodegrade under natural conditions (ISO 17556), tackling microplastics pollution at its origin. Our flagship grade BIOWA S combines high performance and durability with this functionality — a rare combination in TPE materials.

Recognized by the EU Horizon program and awarded Renewable Material of the Year 2023, KUORI is redefining the rubber and elastic materials industry toward a circular future with less dependency on fossil-based products, reduced CO_2 emissions and persistence of microplastics.

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BIOWA Portfolio

The BIOWA platform is structured into three material classes, each optimized for specific application requirements:

BIOWA S
Signature Grade

The flagship grade combining elastic durability with biodegradable abrasion particles (ISO 17556).

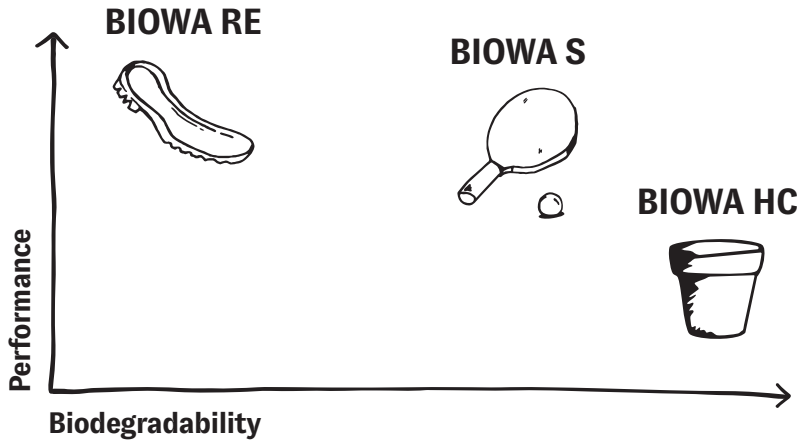
BIOWA HC
Home Compostable Grade

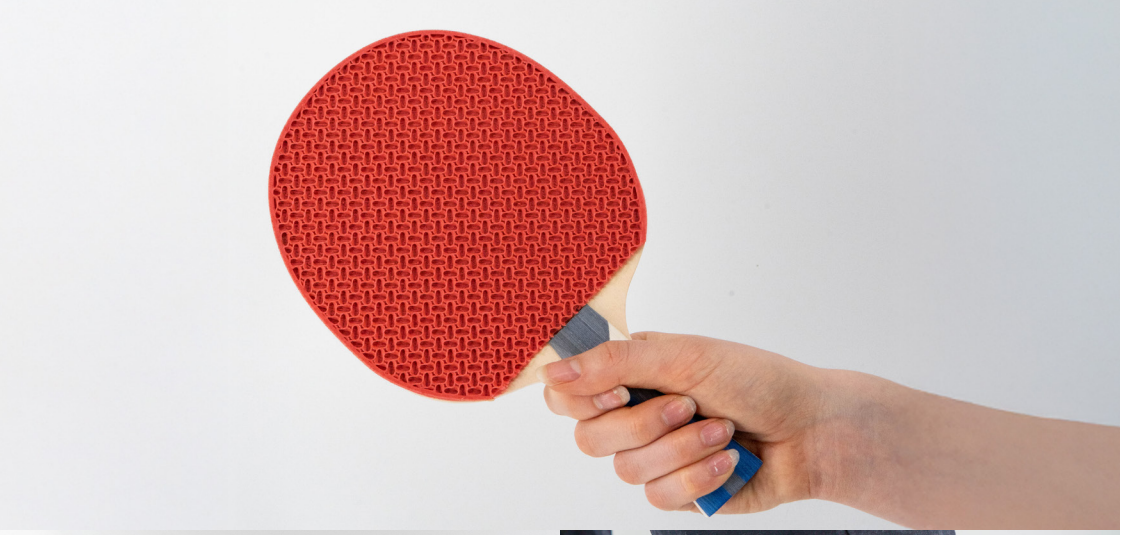
Designed for short-life and moderate performance applications, offering up to 100% biobased and plastic-free formulations. Home compostability certification (following NF T 51-800) is currently in progress.

BIOWA RE
Resistant Grade

Designed for demanding, long-life applications with enhanced durability, high biobased content and focus on recyclability.

	Biobased	Recyclable	Performance	Degradability
BIOWA S	42% - 85%	Yes	High (balanced)	Naturally degradable microplastics ISO 17556
BIOWA HC	35% - 100%	Yes	Moderate	Home compostable NF T 51-800 in progress
BIOWA RE	57% - 79%	Yes	High (resistant)	Non-biodegradable Hydrolysis resistant





BIOWA S Signature Grade

Flagship thermoplastic elastomer TPE with **high durability** for abrasion-intensive applications, enabling **biodegradation of released microplastic particles** (ISO 17556).

Highlights
- Naturally biodegradable microplastics (ISO 17556)
- Biobased content up to 85%
- Vegan (no animal-derived components)
- Mechanically recyclable

Available as
- Pellets
- Filament (available in Shore 90A)
- Chemically foamed (density ~0.55 g/cm³)

We produce your personalized grade

The property ranges shown below represent the adjustable design space and can be tailored to specific application requirements, including biofiller content, foaming and color. Standard values indicate typical properties of BIOWA S 80A grades with olive pit or walnut shell biofillers.

BIOWA S Olive 80A

Properties	Range	Standard grade
Shore hardness	70A - 60D	80A
Biobased content	42% - 85%	82% with olive pits or walnut shells.
Recycled waste content	0% - 50%	20%
Tensile strength	9.4 - 30 MPa	16.5 MPa
Abrasion resistance	30 - 90 mm³	70 mm³

Biodegradation

Abrasion-generated particles (microplastics) are designed to biodegrade under natural environmental conditions (ISO 17556). Shredded BIOWA S Olive 80A was mixed with compost at 45°C. As of 180 days the material has achieved >64% absolute biodegradation via CO_2 respirometry.

Applications
Footwear, outdoor & sports, accessories, tools, and toys

BIOWA S example
Data sheet

BIOWA HC Home Compostable Grade

Thermoplastic elastomer designed for short-life and moderate performance applications, enabling **plastic-free** formulations in selected grades with up to 100% biobased content. **Home compostability** certification is in progress (NF T 51-800).

Highlights

- Home compostability certification (following NF T 51-800) is currently in progress
- Biobased content up to 100%
- Plastic-free formulations possible
- Mechanically recyclable

Available as

- Pellets

We produce your personalized grade

The property ranges shown below represent the adjustable design space and can be tailored to specific application requirements, including biofiller content and color.

Properties	Range
Shore hardness	90A - 65D
Biobased content	35% - 100% Biofillers, olive pits or walnut shells, etc.
Recycled waste content	0% - 80%
Tensile strength	8.9 - 22.4 MPa

Biodegradation

Designed for applications where bulk material biodegradation under home composting or natural soil conditions is desired. Home compostability certification is currently in progress (NF T 51-800).

Applications

Sink screens, agricultural products, decorative items, and similar applications

BIOWA HC example
Data sheet

BIOWA RE Resistant Grade

Thermoplastic elastomer (TPE) designed for demanding, long-life applications requiring **high durability** and **resistance** to moisture and hydrolysis.

Highlights
- High durability
- Hydrolysis resistant
- Biobased content up to 79%
- Mechanically recyclable

Available as
- Pellets

We produce your personalized grade

The property ranges shown below represent the adjustable design space and can be tailored to specific application requirements, including biofiller content, foaming, and color.

Properties	Range	
Shore hardness	65A - 95A	
Biobased content	57% - 79%	Biofillers, olive pits or walnut shells, etc.
Recycled waste content	0% - 30%	
Tensile strength	20 - 31 MPa	

Hydrolysis resistance

Designed for applications exposed to moisture and mechanical stress.
Hydrolysis resistant for long-term performance in demanding environments.

BIOWA RE example
Data sheet

Applications

Wheels, furniture components, watch straps,
outdoor equipment, and mechanically stressed parts

Services

FROM MATERIAL CONCEPT TO INDUSTRIAL PRODUCTION

KUORI supports customers from material formulation to functional prototypes and industrial scale-up.

We work with manufacturers, brands, and startups — from early concepts to validated products ready for production.

Research & development

Our R&D team develops tailored thermoplastic elastomer (TPE) compounds incorporating biobased and biodegradable components, with the capability to integrate biofillers derived from various food industry sidestreams. We optimize formulations for mechanical performance, processability, and environmental impact.

Key capabilities:

- Formulation development tailored to customer needs (biofillers, plasticizers, reactive systems)
- Targeted tuning of durability and degradation (abrasion performance vs. microplastic biodegradation behavior)
- Process optimization (injection molding, extrusion, foaming)
- Aesthetic customization (coloring, texturing, surface finish)

Material production

KUORI operates an in-house compounding setup for pilot-scale production (10–100 kg batches), allowing for fast iteration cycles and continuous formulation optimization.

Industrial scale-up is achieved through manufacturing partners in the EU, enabling seamless transition to ton-scale production.

Prototyping & development support

We translate material concepts into functional prototypes for rapid validation — from early-stage ideas to application-ready demonstrators, suitable for industrial scale-up.

For brands and startups without in-house development, we support:

- Material selection and optimization
- Design validation (material-driven feasibility)
- Production of 3D-printed (in-house) and molded prototypes (via partners)

Prototyping capabilities:

- Injection-molded parts
- Compression-molded parts
- Extruded profiles and sheets
- 3D printing (FFF / FGF)
- Laser engraving and laser cutting
- Application-specific demonstrators (e.g. footwear components, consumer products)

Testing

Material performance is validated through standardized testing and processing trials to ensure reliable behavior in real applications.

- Mechanical, abrasion, and thermal testing
- Biodegradation and environmental testing – (with external partners)
- Processing validation (injection molding, extrusion, compression molding)

LCA

We conduct Life Cycle Assessments (LCA) with external parties to quantify environmental impact and enable data-driven material decisions.

- CO_2 footprint analysis
- Biobased content evaluation
- Benchmarking vs. fossil-based materials
- Support for customer sustainability claims

Order now!

Stock material

We offer standard grades available for direct purchase, including the materials featured in our datasheets. Sample packs are available on request and may also include filaments, sheets, material cards or 3D printed prototypes.

Delivery time:
- 1–25 kg: 1–2 weeks
- 25–100 kg: 2–4 weeks
- >100 kg: 6–10 weeks

Custom material

All grades listed in our BIOWA Portfolio are deliverable at scale.

Contact us to develop and order custom materials with properties matching your needs and applications. Custom sampling as well as material sheets, cards or printed prototypes are possible.

Delivery time:
- 10–100 kg: 3–6 weeks
- 100–1000 kg: 4–8 weeks
- >1000 kg: delivery times available upon request

NOW IT'S YOUR TURN

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