

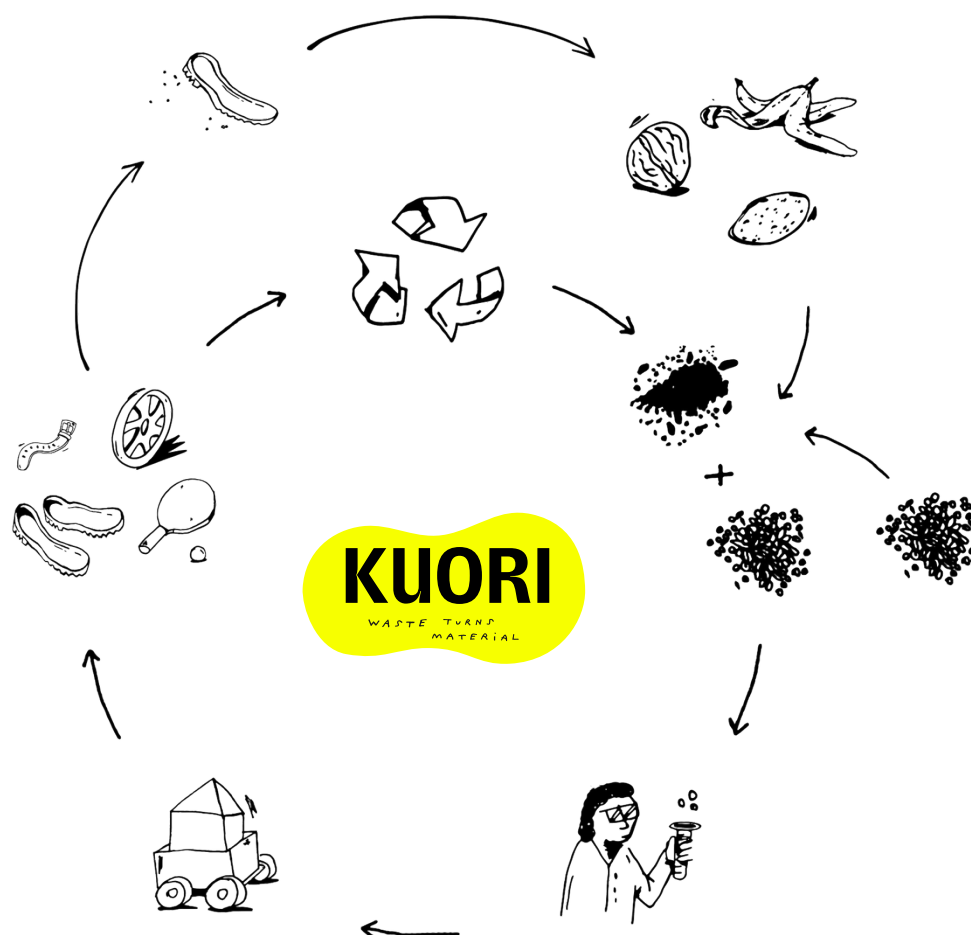


**KUORI**

WASTE TURNS  
MATERIAL

# Presskit KUORI

For external Communication Purposes



## Company Portrait - KUORI in a nutshell

### One-Liner

#### Nr.1

KUORI develops and supplies biodegradable and recyclable materials containing food byproducts like olive pits and walnut shells, redefining the rubber and elastomer materials industry towards a circular future without microplastic pollution, with fewer fossil-based resources and lower CO<sub>2</sub> emissions.

#### Nr.2

KUORI is revolutionizing the rubber and elastic materials industry with biobased, biodegradable and recyclable materials containing food byproducts like olive pits and walnut shells. What sets it apart is its ability to naturally biodegrade microplastics generated through abrasion during product use.

#### Nr.3

KUORI develops biobased, biodegradable and recyclable elastomeric composites containing food byproducts, engineered such that abraded particles biodegrade rather than persist as microplastics, while exhibiting a reduced product carbon footprint for applications ranging from outdoor to automotive.

### 500 Characters:

#### Nr.1

KUORI, a Swiss B2B cleantech company, develops biodegradable and recyclable elastic materials containing food byproducts like olive pits and walnut shells. What sets it apart is its ability to naturally biodegrade the microplastics generated through abrasion during product use. Recognized by the EU Horizon programme and awarded Renewable Material of the Year 2023, KUORI serves industries from outdoor to automotive, helping reduce fossil-based products, CO<sub>2</sub> emissions, and microplastic pollution.

#### Nr.2

KUORI, a Swiss B2B cleantech company, develops and supplies biobased, biodegradable and recyclable elastomeric materials. These formulations contain food waste products as functional fillers, including olive pits and walnut shells. Supported by the EU Horizon programme and awarded Renewable Material of the Year 2023, KUORI serves industries from outdoor to automotive, which are facing growing sustainability requirements and increasing regulatory pressure worldwide.

### 740 Characters:

#### Nr.1

At KUORI, a Swiss B2B cleantech company, we develop and supply biobased, biodegradable and recyclable elastomeric materials containing food byproducts such as olive pits and walnut shells, redefining the rubber and elastomer materials industry towards a circular future without microplastic pollution, with fewer fossil-based products and reduced CO<sub>2</sub> emissions. Our eco-friendly alternatives perform like conventional plastics while seamlessly fitting into existing manufacturing processes. Backed by the EU Horizon Programme and awarded Renewable Material of the Year 2023, we have started transforming industries from outdoor to automotive, which face growing regulatory and consumer-driven demands for sustainability.

#### Nr.2

At KUORI, a Swiss B2B cleantech company, we develop and supply biobased, biodegradable and recyclable elastomeric materials containing food byproducts such as olive pits and walnut shells. The composite formulation is engineered to achieve a reduced product carbon footprint and to ensure that abrasion-generated particles biodegrade rather than persist as microplastics. Compatible with conventional processing equipment, our materials enable scalable adoption across sectors from outdoor goods to automotive. KUORI's technological approach and sustainability performance have been recognized through public funding and industry awards, including support under the EU Horizon Programme and the Renewable Material of the Year 2023 award.



## KUORI's Mission

Founded in 2022, KUORI's mission is clear: to break free from the world's dependence on fossil-based plastics. Rather than accepting the conventional path, we asked ourselves a daring question:

**“How can we drastically reduce microplastic pollution while maintaining the performance of conventional plastics?”**

Our journey began with an unconventional idea: using food byproducts such as olive pits, walnut shells and banana peels as biofillers to develop biodegradable, recyclable and elastic materials. Imagine materials that are not only environmentally friendly but also meet technical standards of conventional plastics, while seamlessly integrating into existing manufacturing processes.

Collaboration is at the heart of KUORI's strategy to achieve the biggest possible impact, offering companies solutions that enable them to easily replace less sustainable materials. As a B2B enterprise, we are proud to work with leading players in the outdoor, fashion and automotive sectors. We focus on close partnerships to develop the best material formulations for every partner and product, optimizing performance, cost efficiency, biobased content, biodegradability and recyclability.

## Research

Our team of material scientists develops customized grades tailored to client specifications, collaborating closely with partners to optimize properties such as mechanical performance, biofiller selection, processability, foaming agents and color.

We support companies from early concepts to validated products ready for industrial scale-up, offering a full range of services including research & development, material production, prototyping and development support, testing, and life cycle assessment (LCA), ensuring seamless integration into existing manufacturing processes.

## Material Portfolio

KUORI is currently developing multiple groundbreaking material platforms at different stages, offering unique properties. While the solutions vary in their characteristics and applications, they share a common, crucial goal: paving the way for a post-fossil plastic industry by utilizing food byproducts as second-generation biofillers.

### BIOWA

BIOWA® is KUORI's flagship material platform, developed to offer biodegradable, recyclable, and high-performance elastomeric materials containing food byproducts such as olive pits and nutshells. It ranges from **BIOWA HC**, a home compostable material for moderate requirements, to our balanced signature material **BIOWA S** for performance applications, with the additional feature that abrasion-generated particles degrade in nature outside a composting facility, to our high-performance material **BIOWA RE**, with a focus on recyclability and biobased content. With its BIOWA platform, KUORI offers a variety of specialized grades to meet companies' unique performance and sustainability needs.

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

#### Manufacturing Process

BIOWA materials are produced using compounding processes that blend biopolymers with green additives and second-generation bio-fillers such as olive pits and walnut shells. These market-ready materials are available in versatile forms such as pellets or filaments, making them suitable for a wide range of industrial applications, including injection molding, extrusion and 3D printing, providing the flexibility and durability required for applications from agricultural products and toys to high-performance items in footwear, outdoor, and mobility sectors.

In summary, BIOWA addresses the main challenges of fully fossil-based plastics.

- Reduced dependence on non-renewable (fossil) resources like crude oil
- Lower CO<sub>2</sub> emissions thanks to circular CO<sub>2</sub> flow
- No release of persistent microplastics into the environment

### Material C

With Material C, KUORI is developing a fundamentally new class of recyclable rubber that combines performance, circularity, and environmental responsibility in a single system.

Currently at lab scale, the material integrates renewable resources, closed-loop chemical recycling, and controlled degradability within its polymer design. This approach allows KUORI to explore a new class of elastomers and lays the foundation for the next generation of truly circular tire materials.



## **Application**

The resulting high-quality materials offer an eco-friendly alternative to conventional plastics for footwear, outdoor and mobility applications.

## **End of Life - Products**

At the end of their life, KUORI materials can be melted down and recycled into new products, drastically reducing waste. By returning the material to its malleable state, we extend its lifecycle and contribute to a more sustainable manufacturing process.

## **End of Life - Microplastics**

Due to their chemical structure, microplastics emitted due to abrasion of the material will disappear under natural conditions thanks to water and enzyme activity.

## **Source**

KUORI uses second-generation bio-fillers such as walnut shells and olive pits, byproducts of the food industry that do not compete with food production. Biofillers are blended with biopolymers and green additives to create recycled waste based materials.

## Keywords und Glossary

This glossary provides definitions and explanations of key terms that are integral to the discussion of KUORI's sustainable material advancements.

**Biobased:** Refers to materials that are fully or partially derived from renewable biological resources, reducing dependence on fossil-based feedstocks.

**Biodegradable:** Refers to materials that can be broken down by microorganisms into natural substances such as CO<sub>2</sub>, water, and biomass under specific environmental conditions.

**Biodegradable Microplastics:** Microplastic particles generated through abrasion during product use that are designed to naturally biodegrade under environmental conditions, reducing persistent plastic pollution.

**Biopolymers:** Polymers that are fully or partially derived from biological sources. They can be directly extracted from natural materials or synthesized from bio-based monomers.

**BIOWA:** KUORI's flagship material platform for biobased, biodegradable and recyclable elastomeric composites containing food byproducts, such as olive pits or walnut shells, as biofillers.

**Compostability:** The ability of a material to biodegrade under controlled composting conditions within a defined timeframe, according to specific standards.

**Elastomers:** (elastic = stretchable; mero = part) are characterized by high elasticity across a wide temperature range.

**End-of-life solutions:** Measures and strategies implemented at the end of a product's or system's life cycle to safely, efficiently, and environmentally dispose of or recycle it.

**Food byproducts:** Food byproducts refers to crops and plants not suitable for human consumption (food) or animal consumption (feed). Second generation feedstock can be either non-food crops (cellulosic feedstock) or waste materials from 1st generation feedstock (e.g. waste vegetable oil).

**Granulate:** Pellet form of commercial plastics, used as the standard input format for industrial processing methods such as injection molding or extrusion.

**LCA:** Life Cycle Assessment – an analysis of the environmental impact of a material/product over its entire life cycle.

**PCF:** Product Carbon Footprint – CO<sub>2</sub> equivalent emissions associated with a product.

**Synthetic Polymers:** Synthetic polymers are artificially created from fossil resources like crude oil through chemical processes and include not only plastics but also materials like synthetic fibers (e.g., nylon, polyester), synthetic rubbers, and adhesives.

**Thermoplastics:** (thermos = warm; plasto = to form) Polymers that can be melted and reshaped multiple times without significant chemical change, enabling recyclability.

**Thermosets:** (durus = hard) cannot be plastically deformed even when exposed to heat after being molded.

**TPE:** Thermoplastic Elastomer – a remeltable and thus recyclable elastic material. Rubbers like silicone, natural rubber, and SBR (car tires) cannot be remelted.

## Pictures (download on <https://www.kuori.ch/media>)



## Contact

Communication:  
Jeanne Chalrot  
[jeanne@kuori.ch](mailto:jeanne@kuori.ch)



General:  
[info@kuori.ch](mailto:info@kuori.ch)



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