

# Sustainable Solutions: The Application of Eco-friendly Materials



PHONE  
手机壳



EARPHONE  
耳机壳



TABLET  
平板套



LAPTOP  
电脑套



WATCH  
表带

# What will sustainable solutions bring to you?

## Enhance Brand Social Responsibility and Reputation

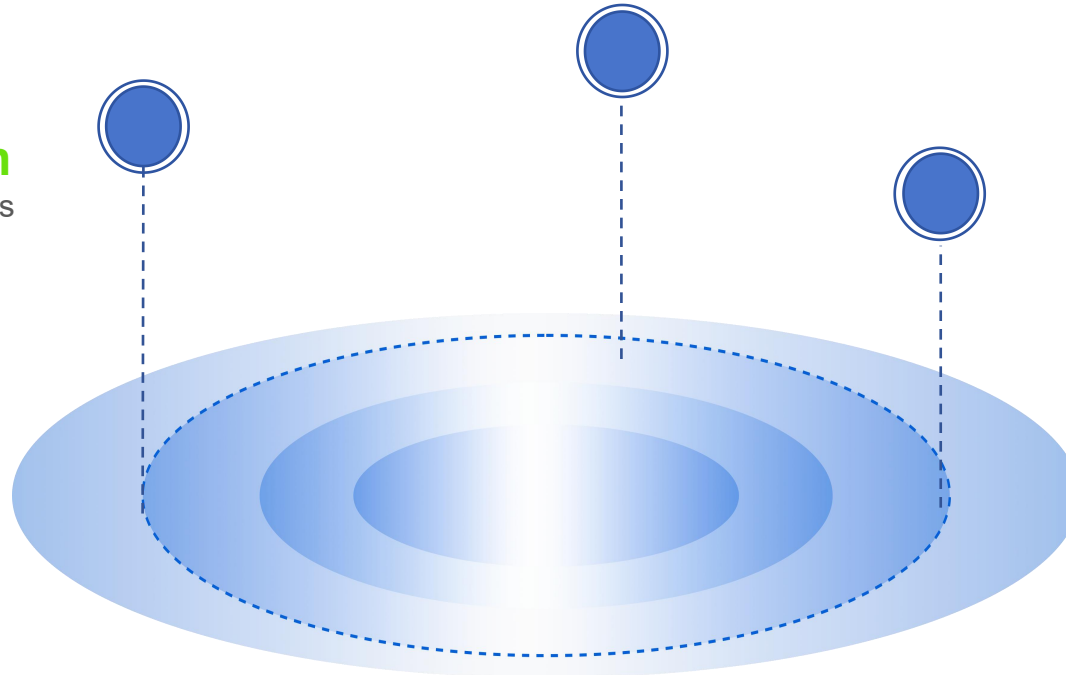
Adopting green products can enhance a brand's sense of social responsibility, bringing good reputation and green brand image.

## Win Consumer Recognition and Trust

Guiding consumers towards environmentally friendly consumption expands the product market.

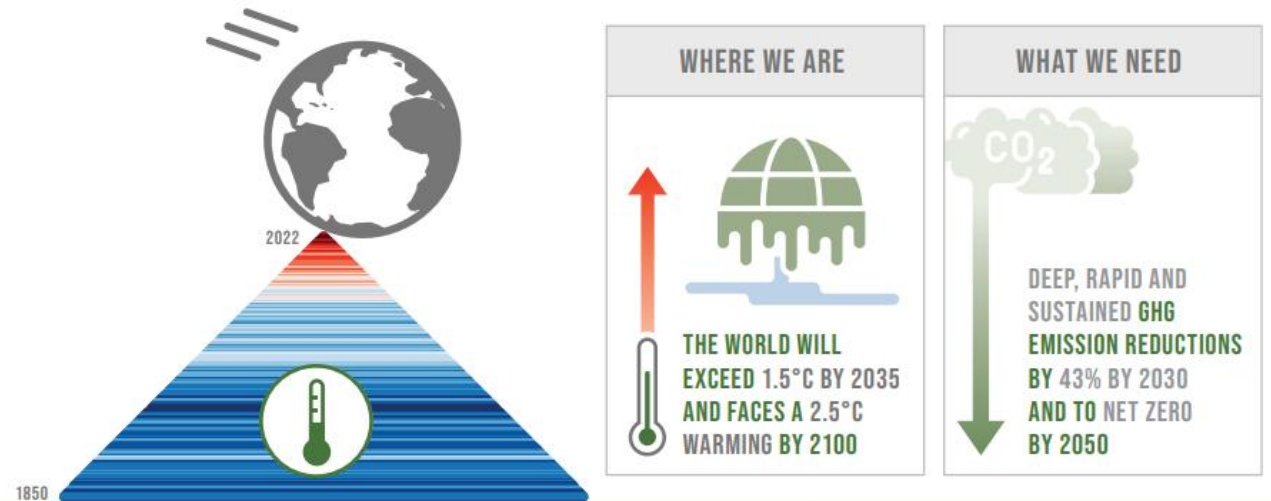
## Increase Product Value

As awareness of environmental protection increases, so does the demand for eco-friendly products. Using environmentally friendly materials enhances the competitiveness of products.



# What can we do in the face of global climate issues?

Climate change is caused by human activities and threatens life on earth as we know it. With rising greenhouse gas emissions, climate change is occurring at rates much faster than anticipated. Its impacts can be devastating and include extreme and changing weather patterns and rising sea levels.



Source: <https://www.un.org/>

To address global climate warming, we must implement strategies that reduce carbon emissions, such as consistently utilizing eco-friendly materials and resources, which lower our environmental impact, and enhancing energy efficiency, which conserves power and reduces greenhouse gas emissions. These initiatives are crucial for mitigating climate change and ensuring a sustainable future.

## Action Now

We will take a “small action” + “big plan” approach to put environmental protection into practice and create a series of eco-friendly 3C accessories that truly meet the needs of society and the expectations of consumers. We invite you to participate in this green action and practice brand social responsibility and sustainable development together.

## MPT Green Program

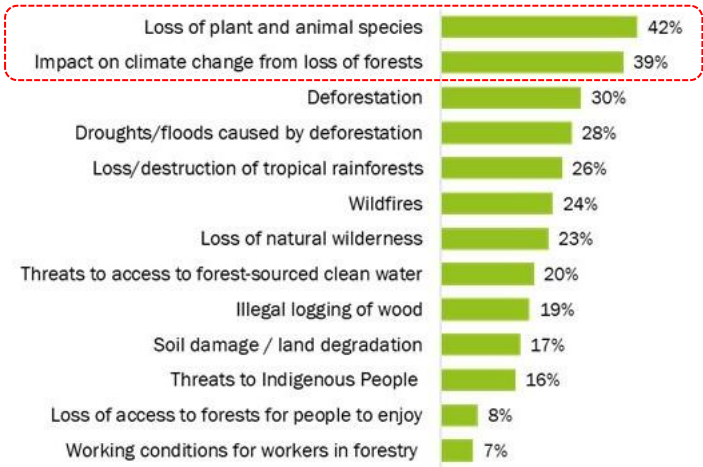
**Materials:** We insist on using eco-friendly raw materials.

**Production:** We possess full-chain environmental system that encompasses production, packaging, and transportation.

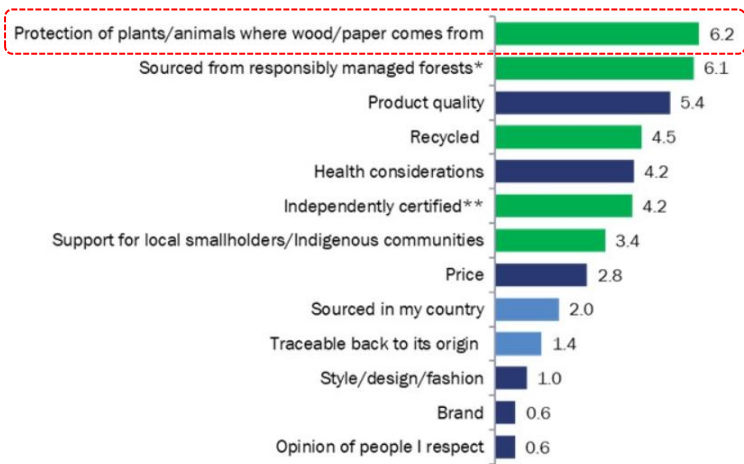
**Time:** Calling on employees to participate in environmental actions.

# What influences consumers' purchasing decisions? What issues are they concerned about?

Most Concerning Global Issues Select in Top Three, Global, 2021



Motivators: Max Diff Analysis, Importance Score, Global, 2021



Sources: <https://fsc.org/en>

## 2021 Global Consumer Research Reveals Escalating Concerns about Climate Change and Threats to Forest Biodiversity

Consumers' sustainability concerns also appear to increasingly influence their shopping choices, with more than 86 percent of consumers try to avoid products that damage biodiversity and about seven in ten want to choose products that do not contribute to climate change.

When asked about influences on their purchases of wooden products, protecting animals and plants and sourcing from sustainably managed forests were among consumers' biggest motivators - nearly on par with product quality; while for paper or card products, these motivators were even higher than product quality. Consumers' belief in their own potential impact is also growing.

### Q:Please indicate to what extent you agree or disagree with the following statements around shopping sustainably

Answers are a combination of "agree" and "strongly agree" responses

	Generation Z	Young Millennials (age 23-26)	Core Millennials (age 27-32)	Mature Millennials (age 33-36)	Generation X	Baby boomers
I choose products with a traceable and transparent origin	47%	59%	60%	62%	56%	48%
I buy from companies that are conscious and supportive of protecting the environment	49%	60%	61%	58%	53%	47%
I intentionally buy items with eco-friendly packaging or less packaging	48%	55%	60%	55%	55%	51%
I am buying more biodegradable/eco-friendly products	48%	56%	59%	58%	52%	47%
When shopping for products, I check the labeling/packaging for sustainability certifications	47%	57%	58%	53%	51%	43%

**Base:**Generation Z(1,360),youngmillennials(933),core millennials1,588,mature millennials (919)generation X(848); baby boomers(925)

**Note:** The greatest generation (the oldest group) is not shown,because the base is too low.

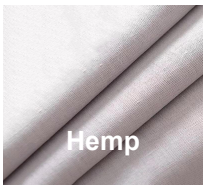
**Source:** June 2021 Global Consumer insights Pulse Survey





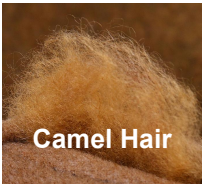
# Catalog of Fabrics Made from Eco-friendly Materials

## // PLANT FIBERS

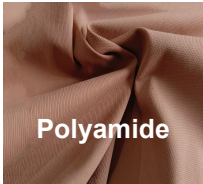
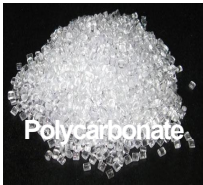


## // ANIMAL FIBERS

Many animal feathers and down are natural fibers composed of keratin, which are 100% biodegradable and do not cause pollution to the oceans or land.



## // RECYCLABLE WASTE

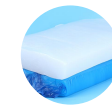
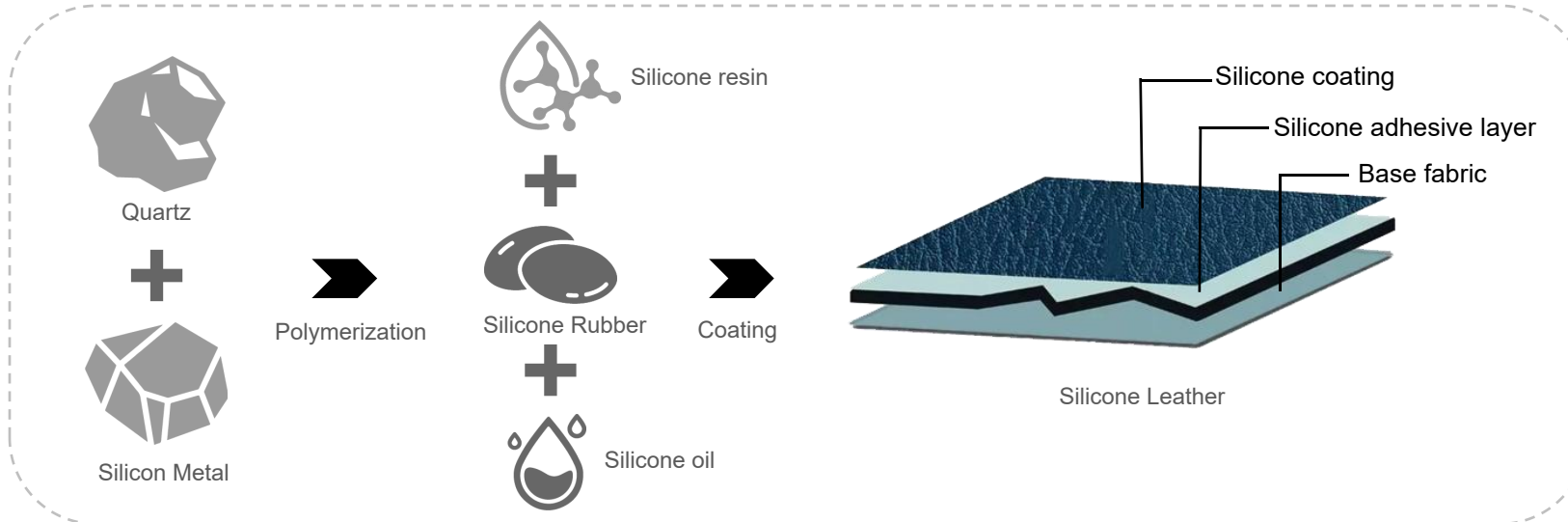


## // BIO-BASED LEATHER/POLYMERS



# Eco-friendly Materials Production and Application Process

Quartz or metallurgical silicon is chemically reacted to produce cyclosiloxanes, which polymerize to form silicone rubber. The silicone rubber is coated onto the surface of a substrate to create organic silicone leather.



100% Silicone



Fiber cloth

## // SILICONE LEATHER

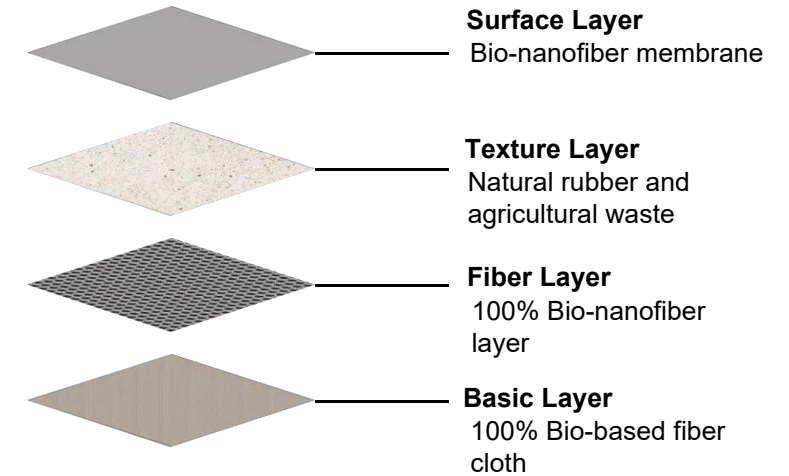
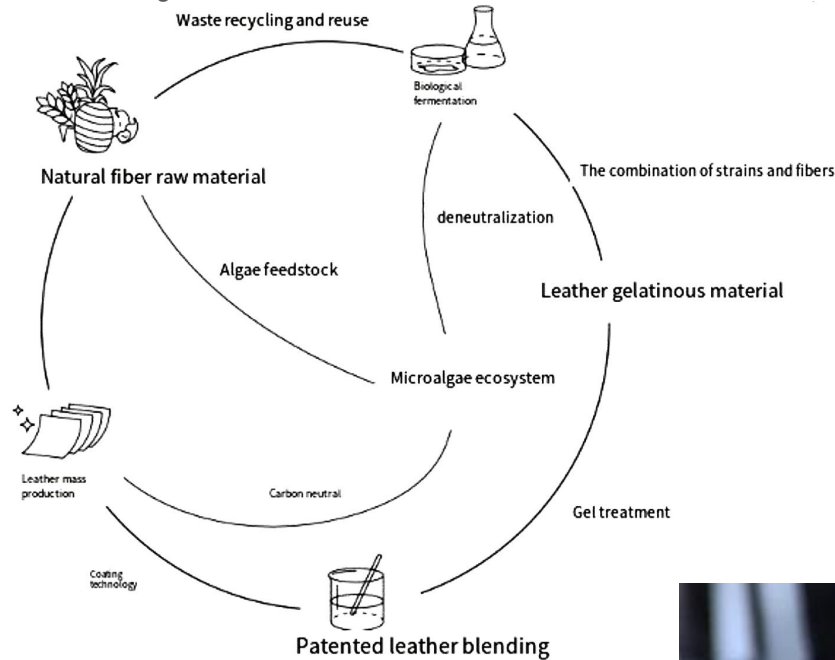
Organosilicon is derived from silicon-based materials such as quartz sand and silicon ore, which have relatively low water consumption, energy consumption, and carbon emissions. Many materials in the production process can be recycled and reused, including the degradation and regeneration of waste liquids, and the recycling of PET to create fiber-based fabrics.





# Eco-friendly Materials Production and Application Process

By selecting mycelium strains and cultivating them through bio-fermentation to produce a gelatinous fiber membrane, and then increasing the crystallinity to make this layer dense and rigid. Natural rubber and other materials are incorporated into the fiber layer to enhance elasticity. Agricultural waste is added to give the leather its distinctive texture.



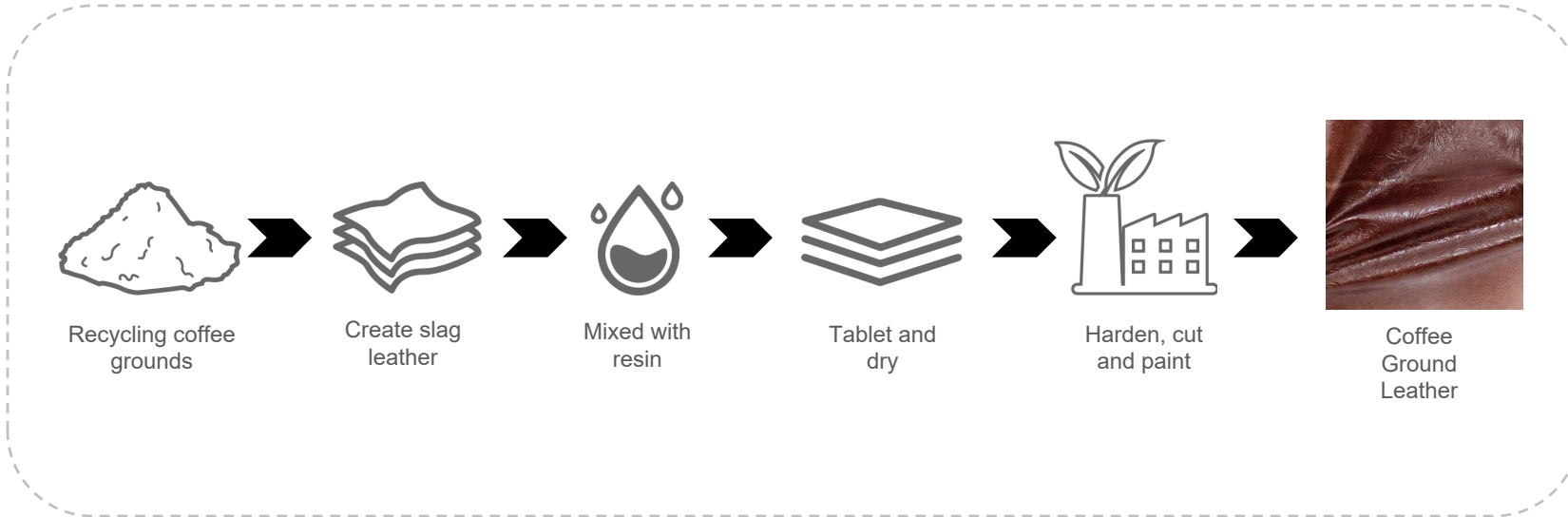
## // MYCELIUM LEATHER

Mycelium is the renewable root structure of mushrooms. With its durability and toughness, mycelium leather is perfect to replicate the real leather in a variety and textures for making handbags, wallets, phone cases and etc.



# Eco-friendly Materials Production and Application Process

Recycle waste coffee grounds to create a crust, mix them with resins and other materials in specific proportions, then press them into thin sheets and dry them. The surface is treated with modifications such as hardening, cutting, and coloring.



15% Coffee ground



40% Water-based PU



45% Recycled polyester

## // COFFEE GROUNDS

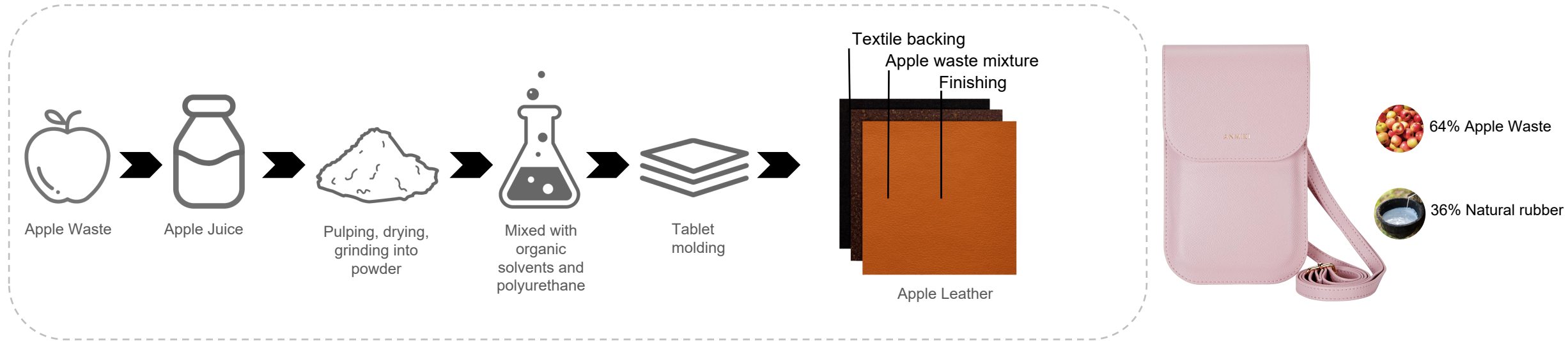
Coffee grounds boast eco-friendly properties, being biodegradable and rich in nutrients. As a sustainable raw material, they can be repurposed for composting, reducing waste, and reducing environmental footprint.





# Eco-friendly Materials Production and Application Process

The leftover residues, such as peels, from apple juicing are processed into pulp, which is then dried and ground into a fine powder. This powder is subsequently mixed with organic solvents and polyurethane. The resulting blend is spread out, dried, and calendared to form the desired shape.



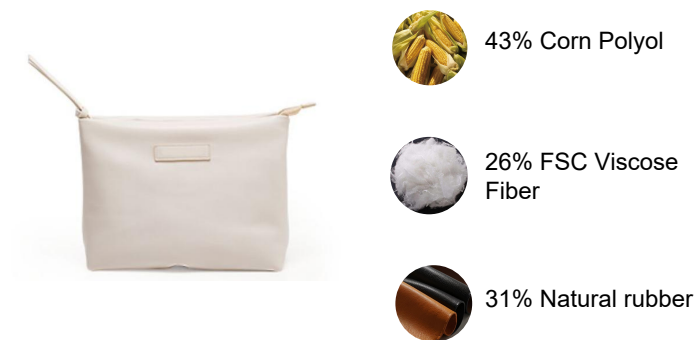
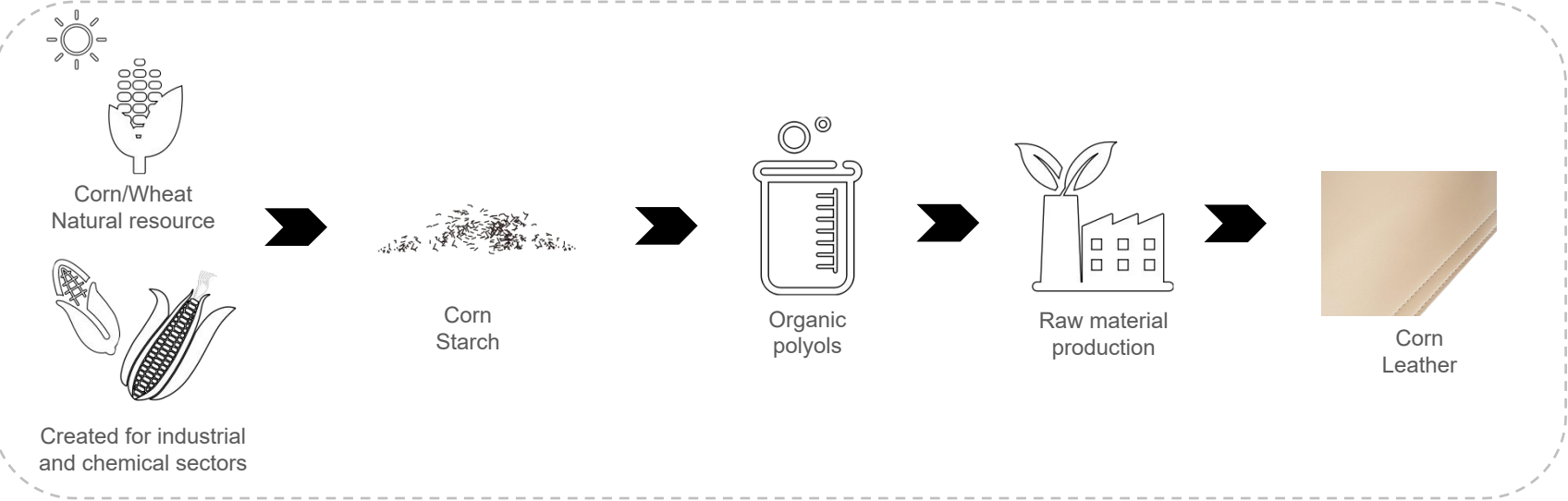
## // APPLE SKIN

A large amount of apple waste such as skins, cores, stems and seeds are effectively used. AppleSkin has soft and delicate touch and excellent quality compared to genuine leather. Naturally thick, durable, breathable and UV resistant, it is suitable for making bags and shoes.



# Eco-friendly Materials Production and Application Process

Collect corn waste (such as stalks, cobs, and husks generated after corn processing), extract corn starch, hydrolyze or convert it into glucose using enzymes, ferment glucose into propylene glycol with the help of microorganisms, use propylene glycol as a raw material to synthesize polyurethane (PU), and then mix the bio-based PU with other components to apply onto the substrate surface to form bio-based leather.



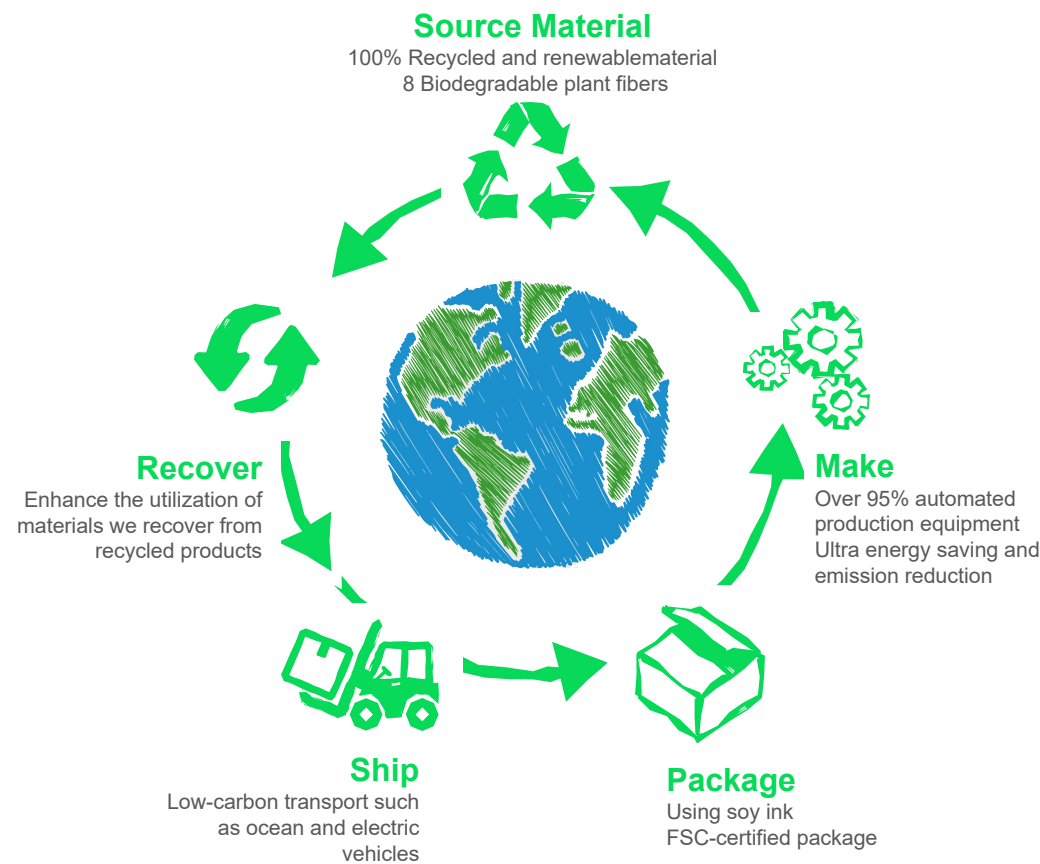
## // CORN SKIN

For a long time non-edible corn hab been used as biofuel and other uses to replace oil-based materials. CornSkin contains 43% of polyols coming from corn grown for industrial end-use, processed into ethanol and its by-products.



# Full-chain Environmental Production

Full-chain environmental production is crucial for reducing our ecological footprint. It promotes sustainable resource use, minimizes waste, and lowers carbon emissions across product lifecycles, fostering a greener economy and healthier planet.



A plastic bottle can be made into a mobile phone case made of RPET(Recycled Polyester)



The life cycle stage PCF results of recycled TPU phone case

Stage	Value	Unit
Raw material stage	0.012	kg CO <sub>2</sub> eq
Manufacturing stage	0.131	kg CO <sub>2</sub> eq
Packaging stage	0.000	kg CO <sub>2</sub> eq
Transport stage	0.005	kg CO <sub>2</sub> eq
waste and recycle stage	0.022	kg CO <sub>2</sub> eq
total	0.169	kg CO <sub>2</sub> eq

## Carbon Footprint



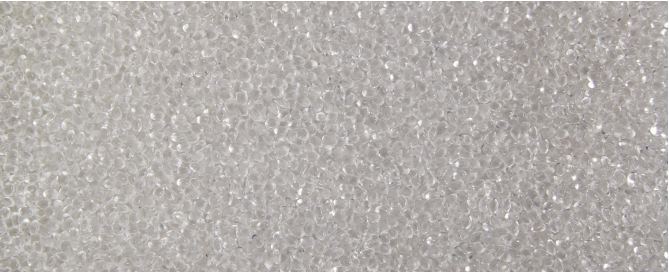
The PCF report shows the life cycle of product is divided into five stages: the raw material acquisitive stage, the processing stage, the transport stage, the use stage, waste and recycle stage. The model of carbon emission is established according to the consumption and emission of various substances in the life. After calculations, we tracked that the lifecycle carbon emissions of our TPU phone case is merely 169g.





# Catalog of Products Made from Eco-friendly Materials

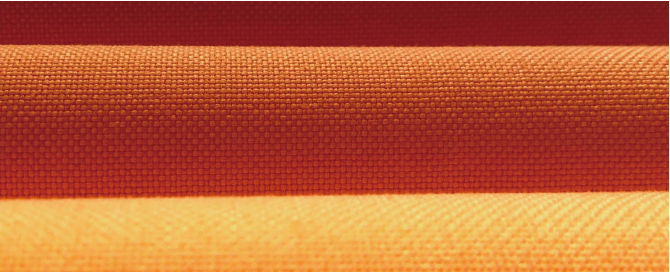
## Thermoplastic Polyurethane (TPU)



### Features:

With excellent high tension, high tensile strength, toughness, cold resistance, aging resistance, mold resistance, water resistance, it is a mature environmental protection material. And flexible, the phone case made of TPU material cushioning, can effectively prevent falls.

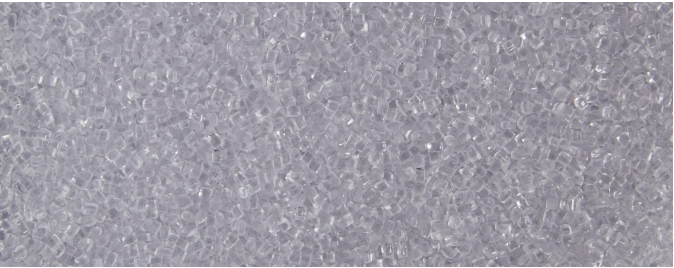
## Recycled Polyester (RPET)



### Features:

RPET products are recyclable, saving energy, oil consumption and reducing CO2 emissions. For every pound of recycled RPET fabric, 61,000 BTU of energy can be saved, which is equivalent to 21 pounds of CO2.

## Polycarbonate (PC)



### Features:

It has better transparency, abrasion resistance, corrosion resistance, and anti-drop and shock resistance.

## Polyurethane (PU)



### Features:

Polyurethane has good physical properties, bending resistance, good softness, tensile degree and breathability, with the same texture as leather but more durable than leather, has been a large number of alternatives to fiberglass insulation materials, wood, traditional rubber products.



# Catalog of Products Made from Eco-friendly Materials

## Cork Leather



### Features:

Cork leather has good water resistance, scrub resistance, oil resistance, wear resistance, natural environmental protection, and non-toxic characteristics.

## Washed Kraft Paper



### Features:

Washed paper has toughness, stiffness, abrasion resistance, water resistance, and dry cleaning.

## AppleSkin



### Features:

It is slightly lighter, softer and finer, and less prone to aging.

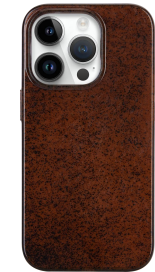


## Coffee Grounds



### Features:

Injectable molding, coffee scent, sturdy and durable, light and wearable.







7-10<sup>th</sup>  
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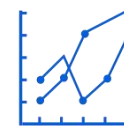




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Marketing proposal



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Multi-language

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