naku®
AUS NATÜRLICHEM KUNSTSTOFF

# YOUR ALTERNATIVE TO PETROLEUM-BASED PLASTIC PACKAGING

**BOTTLES · BAGS · PROJECTS · BIOPOLYMER FILMS**

*Natural - Renewable - Compostable*

August/2025 V4

www.naku.at

"For us, the merging of nature and technology is not a contradiction, but an important foundation for our work. The idea of sustainability should not stop at packaging, and waste should not remain with the generation that creates it. Because: Even plastic can be natural."

**DI Mag. Johann Zimmermann,**
**Managing Director of NaKu**

Ute and Johann Zimmermann decided very early on to use the core term "natural plastic" – today's short form "NaKu" – because they considered organic food too unsuitable. At that time, there was a clear division of Bioplastics are not yet available and there is no definition of how these plastics should be named precisely. The name was found, now only a first product had to be developed from bioplastics. In short – the now well-known NaKu-Sackerl was born.

**Mag. Ute Zimmermann**
**Commercial Management**

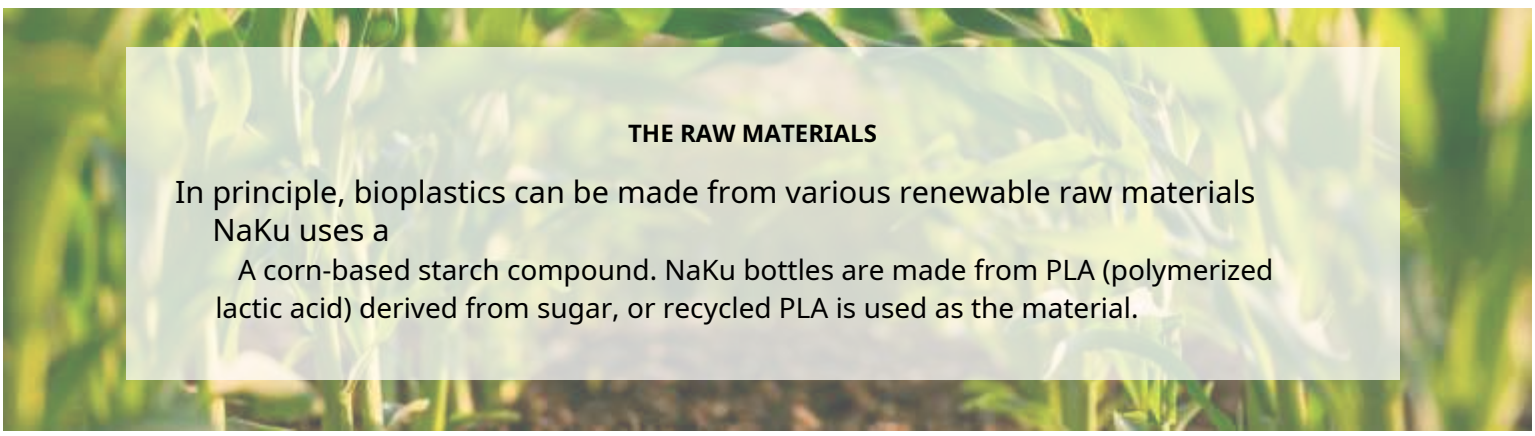
# ABOUT NaKu

## Made of natural plastic

**EXPERTISE. PIONEERING SPIRIT.**

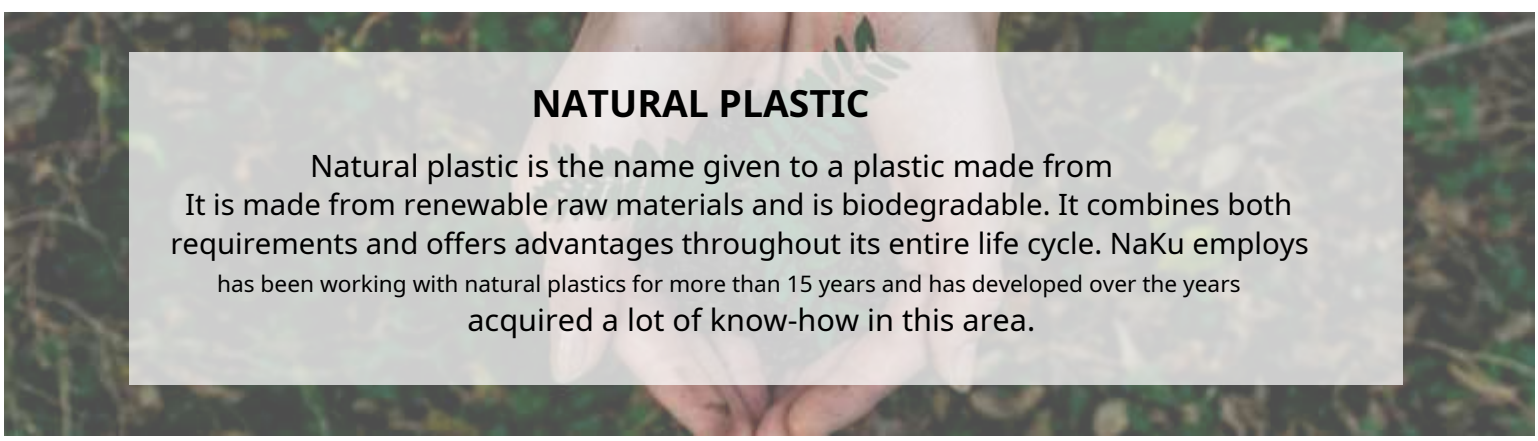
### AND A GOOD PORTION OF PASSION.

Ute and Johann Zimmermann have been committed to natural plastics since 2007. In that year, Johann and his wife Ute founded the company NaKu to develop plastics that will protect people and nature from the flood of plastic.
Protect. NaKu is the petroleum-plastic-free alternative to conventional plastics!



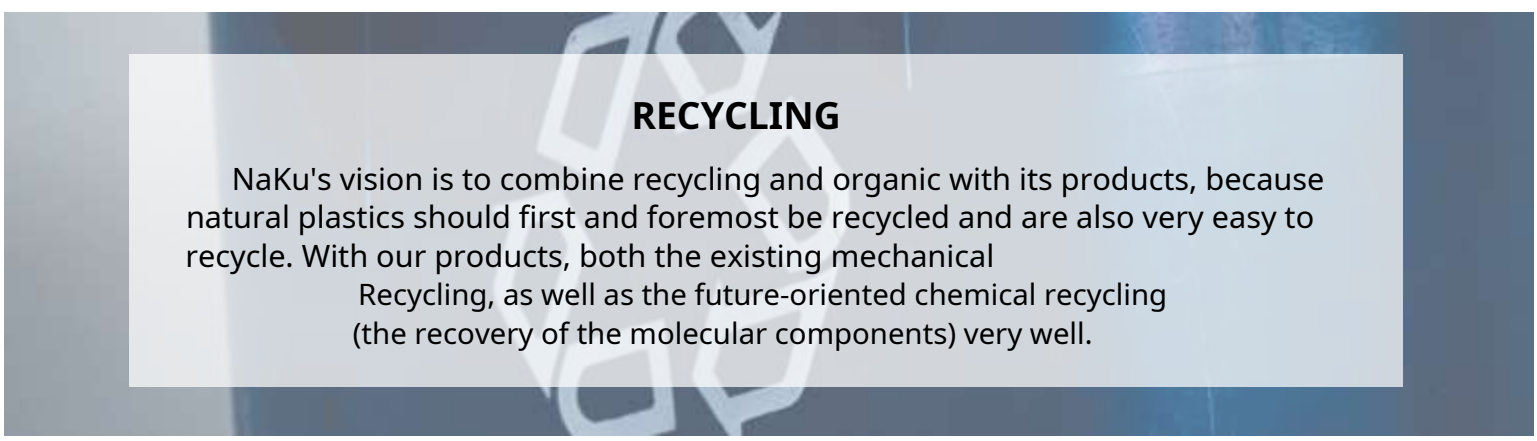
**THE RAW MATERIALS**

In principle, bioplastics can be made from various renewable raw materials
NaKu uses a
A corn-based starch compound. NaKu bottles are made from PLA (polymerized lactic acid) derived from sugar, or recycled PLA is used as the material.



### NATURAL PLASTIC

Natural plastic is the name given to a plastic made from
It is made from renewable raw materials and is biodegradable. It combines both requirements and offers advantages throughout its entire life cycle. NaKu employs
has been working with natural plastics for more than 15 years and has developed over the years
acquired a lot of know-how in this area.



### RECYCLING

NaKu's vision is to combine recycling and organic with its products, because natural plastics should first and foremost be recycled and are also very easy to recycle. With our products, both the existing mechanical
Recycling, as well as the future-oriented chemical recycling
(the recovery of the molecular components) very well.

# BIOPLASTIC

Bags • Bottles • Projects • Biopolymer film

# CONTENTS



***Nature and plastic – a contradiction?***

**It works with NaKu!**

**NaKu products fulfill their purpose while protecting our environment.**

**Packaging material has never been so sustainable. From the selection of natural raw materials, through the production of products (bottles, Bags, foils, etc.) to recycling and composting.**

# NaKu B2C & B2B online shop

## Convenient shopping around the clock

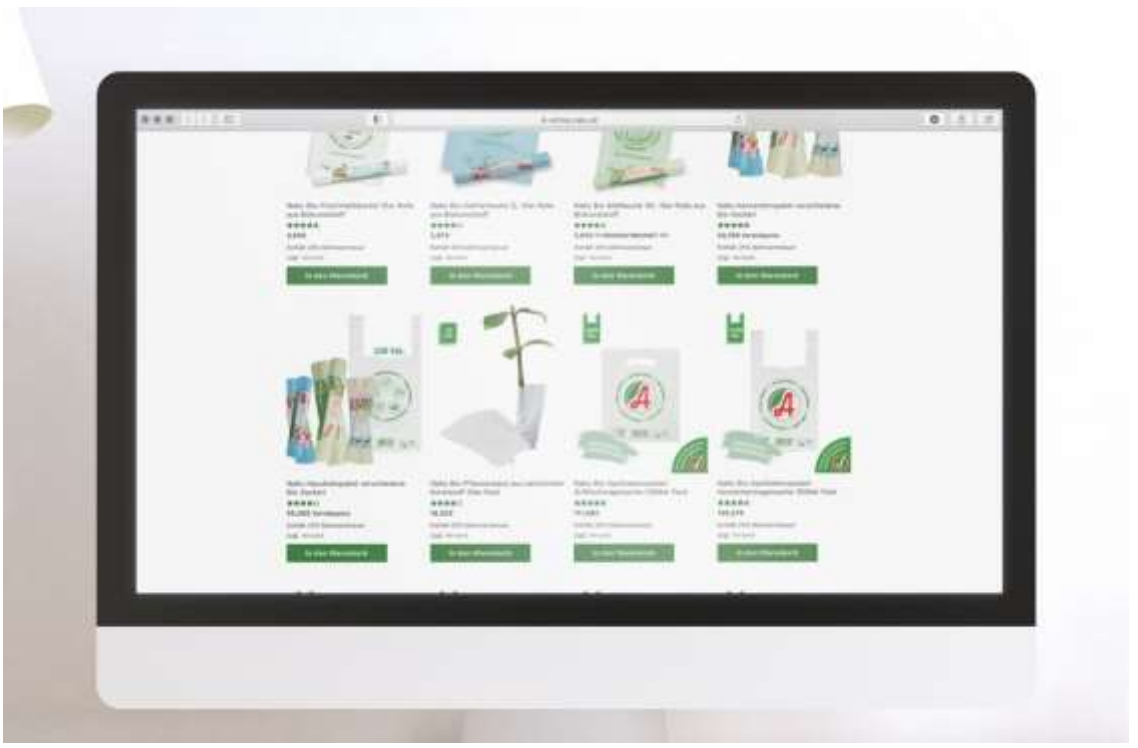
Order directly

All NaKu standard products made of bioplastics are available in our webshop.

Our new special shop for B2B customers offers you as a company many advantages in addition to the features of our B2C shop.

- **Display of net prices**
- **Display of quantity/discount scale/tiered prices**
- **Special bioplastic products only for B2B**
- **Order history**
- **Possibility to order marketing material**
- **Special B2B promotions**
- **Download area for B2B information material**
- **Optional purchase on account**
- **In development: Shipping tracking & PDF invoice archive**

To make our support even more convenient for you and to offer you even more diverse and time-independent contact options in addition to telephone, email, and contact form, we are currently working on integrating a powerful chat and chatbot solution.



**TIP!**

Stay up to date with our newsletter
and register right here!


BIO
BIO GEFRIER-BEUTEL
BIO FRISCH-HALTE-BEUTEL
KÄSESCHLAFSACK
2L

# ORGANIC BAG

## The right bag for every purpose

Order directly

# Organic food storage bags

## Keeps food fresh longer


Breathable and water-resistant organic bag made from corn starch. Keeps bread, vegetables and fruit fresher for longer and is reusable as
Organic waste bags can be used.

Rots within a few weeks in compost according to DIN EN 13432.

A natural and environmentally friendly product from Austria – from
natural plant-based plastic. A valuable contribution to reducing $CO_2$emissions and therefore climate-friendly.

This organic food storage bag keeps food such as bread, vegetables, and fruit fresher for longer. It's a perfect way to take an active role in combating food waste, simply and easily! And what could be better than always having fresh fruit and vegetables in your
to have a refrigerator?

In a study conducted by BOKU (University of Natural Resources and Life Sciences), apples, mangos, tomatoes, chanterelle mushrooms, lettuce, bread, and rolls were stored in three different ways: openly, in conventional plastic bags, and in NaKu organic bags. The results are clear. Bread, for example, lasts more than twice as long in NaKu organic bags than when stored openly and also retains its flavor compared to plastic bags. Apples retain their flavor particularly well when stored in NaKu organic bags. The situation is similar for lettuce and other foods.**Study by BOKU** can be found on our website for further reading.

- **Compostable – 100% biodegradable**
- **Based on strength**
- **Environmentally friendly**
- **Stays fresh up to twice as long**

**Roll of ten fresh-keeping bags in practical packaging**

**Width: 210 + 2x55 mm side gusset**
**Length: 400 mm (incl. handle)**
**Thickness: 25µm**
**Capacity: 6 liters**

**Item no.: R-FB003**
**GTIN: 9120041370021**

# Organic freezer bags

## Pollutant-free freezing

Order directly

The NaKu organic freezer bag is perfect for your kitchen. This breathable and water-resistant, corn-based organic bag from NaKu is the perfect container for freezing your food.

Keeps food fresh longer. Freeze bread, meat, vegetables, and any kind of food.

NaKu organic freezer bags are 100% compostable and free of pollutants and heavy metals – they decompose within a few weeks in the compost according to DIN EN 13432.

**10-roll**

**with practical outer packaging**

**Width: 210 mm**
**Length: 300 mm**
**Thickness: 25µm**
**Capacity: 2 liters**

**10-roll item no.:**
R-GB004
**GTIN:**
9120041370083

**Pack of 100 loose Art.No.:**
FlaB-GB004-100

**10-roll**

**with practical outer packaging**

**Width: 210 mm**
**Length: 450 mm**
**Thickness: 25µm**
**Capacity: 4 liters**

**10-roll item no.:**
R-GB004-L
**GTIN:**
9120041370854

**Pack of 100 loose Art.No:**
FlaB-GB004-L-100

Healthy product made from bioplastic based on renewable & GMO-free plants. A valuable contribution to Reduction of $CO_2$emissions and therefore climate-friendly.

- **Compostable – 100% biodegradable**
- **Based on corn starch**
- **Environmentally friendly**
- **Can be labeled over the entire surface**

**10-roll and 100-pack**

# Cheese sleeping bag

## for optimal cheese enjoyment

Order directly

With the NaKu cheese sleeping bag – an organic bag made from cornstarch specifically for cheese – you can optimally package cheese at your cheese counter. The NaKu cheese sleeping bag ensures optimal cheese enjoyment and a long-lasting cheese experience. This breathable and water-resistant corn-based cheese bag is the ideal container for hygienic cheese storage in your kitchen!

The cheese bag not only preserves the quality of the cheese, but also keeps it optimally fresh. The NaKu cheese sleeping bag features a light yellow design and is conveniently fully labelable. The translucent color also makes it easy to identify which cheese is packed in the cheese sleeping bag.

No more worrying about contact between the cheese and conventional packaging. With our cheese bag made from GMO-free corn starch, this is no longer an issue!

A natural and environmentally friendly product made from natural plastic/bioplastic based on renewable raw materials (plant-based). A valuable contribution to reducing $CO_2$emissions, climate-friendly, no formation of microplastics.

Rots within a few weeks in compost according to DIN EN 13432.

**10-roll**

**with practical outer packaging**


**Width: 210 mm**
**Length: 300 mm**
**Thickness: 25µm**
**Capacity: 2 liters**

**10-roll item no.:**
R-KS006
**GTIN:**
9120041370816

**Pack of 100**

**for the cheese trade, loose**

**Width: 210 mm**
**Length: 300 mm**
**Thickness: 25µm**
**Capacity: 2 liters**

**Pack of 100 loose Art.No:**
FlaB-KS006-100

**OPTIMAL ZUM VERPACKEN AN IHRER KÄSETHEKE**

HOME OK compost TÜV AUSTRIA HOME S1026

OK compost TÜV AUSTRIA INDUSTRIAL S1026

- **Maintains the cheese aroma optimally**
- **Odor reducing**
- **Based on strength**
- **Reusable, multiple uses**
- **Compostable – 100% biodegradable**
- **Environmentally friendly**
- **Can be labeled over the entire surface**

# Organic garbage bags

## The practical helper in the household

Order directly

This compostable (DIN 13432) organic waste bag based on corn starch is perfect for collecting and disposing of your organic waste in your kitchen The organic waste bags are extremely tear-resistant and easily hold up to Transport to the organic waste bin.


The organic waste bags are breathable to prevent strong odors and are water-resistant so nothing leaks out.
NaKu organic waste bags decompose in the compost within a few weeks according to DIN EN 13432.

A natural and environmentally friendly product made from plant-based bioplastic. A valuable contribution to reducing of the $CO_2$emissions and therefore climate-friendly.

# Residual waste bags/cosmetic bags

## The little everyday hero for bathroom and household

Order directly

Our small 10-liter residual waste bag is ideal for cosmetic bins and other small waste containers. The perfect solution for residual waste in small Quantities – whether at home, in the office or on the go.


Thanks to its high tear resistance, the bag remains stable even when worn. The breathable structure reduces odors, while moisture and Water resistance prevents liquids from leaking out.

Whether cosmetic waste, household waste, animal bedding, hotel rooms or camping – the bag is versatile and particularly practical for small Households or on the go.

The NaKu residual waste bags decompose in a few weeks on the compost (DIN EN 13432). A valuable contribution to reducing $CO_2$ emissions and for climate protection.

- **Compostable – 100% biodegradable**
- **Environmentally friendly**
- **GMO-free**
- **Odor reduction**
- **Lace-up carrying handles**

**10-roll organic waste bags / residual waste bags with practical outer packaging**

**Width: 210 + 2x70 mm side gusset**
**Length: 450 mm (incl. handle)**
**Thickness: 20 µm**
**Capacity: 10 liters**

**Art.No.: R-BB005 (organic waste bag)**
**Art.No.: R-BR005 (residual waste bag)**

OK compost TÜV AUSTRIA INDUSTRIAL S1026

HOME OK compost TÜV AUSTRIA HOME S1026

Order directly

# Organic all-purpose bags

## Wear – Keep fresh – Rot

**The NaKu organic all-purpose bag can do three important things:**

**Wear – Keep fresh – Rot!**

This organic all-purpose bag can also keep food like fruit, vegetables, and bread fresher longer, reducing waste from spoiled food!

This organic bag can be used as a biowaste bag at the end of its lifespan—it will decompose completely in the compost heap! The environment will be happy!

The NaKu organic all-purpose bag is available in a household-friendly pack of 100.


- Made from natural plastic based on plants/corn starch
- Environmentally friendly and reusable
- Particularly breathable
- Innovation Award Winner of the State of Lower Austria
- Rots within a few weeks in compost according to DIN EN 13432.

**Organic all-purpose bags**

Width: 210 + 2x55 mm side gusset

Length: 400 mm (incl. handle)

Thickness: 25µm

Capacity: 6 liters

Packaging: 100 pieces

Item no.: HT001-100

GTIN: 9120041370038

# Organic carrier bag

## Approved for trade

**This renewable and compostable NaKu organic carrier bag can also be used in Austria for distribution to customers in stores.**

The lightweight carrier bag is not subject to the Austrian plastic bag ban, as it is still permitted to be sold as a lightweight, biodegradable carrier bag. This bag is also approved for sale in retail stores in Germany.

The NaKu organic carrier bag has three major advantages: Carrying – Keeping fresh – Rotting!

This organic carrier bag, available in two sizes, not only serves as a carrying function but also keeps food such as fruit, vegetables, and bread fresher for longer, reducing waste from spoiled food!

At the end of its lifespan, it can be used as a biowaste bag – it decomposes completely in the compost (DIN 13432). The environment is happy!

- **Natural raw materials**
- **Regionally produced**
- **Organically packaged**
- **Stays fresh longer**
- **Compostable – 100% biodegradable**

OK compost TÜV AUSTRIA INDUSTRIAL S1026

HOME OK compost TÜV AUSTRIA HOME S1026

**Organic carrier bag small**
Width: 210 + 2x55 mm
side fold
Length: 400 mm (incl. handle)
Thickness: max. 15µm
Packaging unit: 1500 pieces
Item no.: HT003g
GTIN: 9120041370748

**Organic carrier bag large**
Width: 240 + 2x70 mm
side fold
Length: 500 mm (incl. handle)
Thickness max. 15µm
PU: 2000 pieces/item no.: HT004g
GTIN: 9120041370779
PU: 100 pieces/item no. HT004-100

**INDIVIDUELL BEDRUCKBAR!**

**The organic carrier bag can also be customized with your company logo printable!**

**Minimum print runs:**
**Small: 30,000 pieces**
**Large: 20,000 pieces**

Order directly

# Organic pharmacy bags

## The solution for pharmacies

The special NaKu bioplastic bags for pharmacies offer you and your customers many advantages, and by using them, you are making a significant contribution to our shared environment! The NaKu pharmacy bags are available in two versions: as a small bioplastic bag. in handle hole design and in the larger version as a so-called “shirt carrying bag”.

**reef hole design**

width: 210 mm

length 300mm

cke: max. 15µm

PE: 2000 pcs.

Item No.: GLT003 Apo white

TIN: 9120041370762

**chen execution**

: 210 + 2x55 mm

fold

: 400 mm (incl. handle)

max. 15µm

500 pieces

. : HT003 Apo white

9120041370755

**INDIVIDUELL BEDRUCKBAR!**

**The NaKu organic bags can also be individually printed with your pharmacy logo.**

**Version from 21,000 pieces**

**Grip hole version from 40,000 pieces**

This renewable and compostable bag may also be used in Austria for distribution to customers in stores. It is not subject to the Austrian
Plastic bags are banned, as they can still be used as lightweight, biodegradable carrier bags.

- Cheaper than paper bags & more moisture-resistant
- Natural plastic made from renewable raw materials
- Better $CO_2$-Balance sheet as a plastic or paper bag
- Compostable
- GMO-free & free from pollutants and heavy metals

# Sausage bag

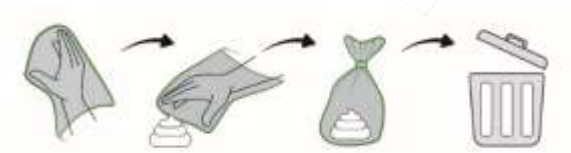
## Dog poop bags made from bioplastic

The NaKu sausage bag is a sustainable dog poop bag made from bioplastic and is produced on the basis of starch. This dog poop bag is made from renewable, biodegradable resources - the optimal and sustainable solution for a "bag for poop".

Dog poop bags are often simply left lying around in nature, which leads to the formation of microplastics in the environment. Even though the NaKu organic dog poop bag is biodegradable, do not dispose of this dog poop bag in the wild! It should be burned for hygiene reasons. If the NaKu dog poop bag does enter the environment, no persistent microplastics are created during decomposition.

Although dog excrement is an organic material, it should not be disposed of in the compost or organic waste bin, as dog excrement can contain components that are not good for the compost for health reasons. Therefore, please dispose of these in the residual waste.

The thermal recycling of NaKu organic dog waste bags is more environmentally friendly than incinerating conventional dog waste bags. This is because CO2 is bound during the growth phase of the raw material—the plants.

- **Practical, functional and environmentally friendly dog waste bag**
- **Suitable for all commercially available dog waste bag dispensers**
- **Odor-reducing, leak-proof and durable**
- **Reducing the petroleum-plastic waste mountain**
- **The alternative to conventional dog poop bags**
- **Biodegradable and compostable according to DIN 13432**

**Width:**200 mm
**Length:**350 mm incl. punch
**Thickness:**15 µm
**Pressure:**black with one-sided NaKu standard print
**Material:**OK Compost
**Packaging unit:**Pack of 100

OK compost TÜV AUSTRIA INDUSTRIAL S1026

HOME OK compost TÜV AUSTRIA HOME S1028

Order directly

# Organic insert bag

## Optimal freshness for your organic box

**This ensures that your harvested organic fruit and vegetables in your organic box retain optimal freshness!**

From packaging to delivery to enjoyment by your customers, a lot of time passes. Deliver your products with optimal freshness with the NaKu organic insert bag.

The NaKu organic liner bag is made from starch. Like most other NaKu organic products, it is fully biodegradable and decomposes in compost within a few weeks according to DIN EN 13432. The NaKu organic liner bag is available in two sizes, each packaged in 1,000 bags.

**Organic liner bag for 2 bowl crates** Width: 385 mm (+2x150mm side fold), Length: 600 mm

Thickness: 20µm

Packaging unit: 1000 pieces

Minimum order quantity 30,000 pieces.

Item no.: SB001

OK compost TÜV AUSTRIA INDUSTRIAL S1026

**Organic liner bag for 3 bowl crates** Width: 625 mm (+2x200mm side fold), Length: 600 mm

Thickness: 20µm

Packaging unit: 1000 pieces

Minimum order quantity 25,000 pieces.

Item no.: SB002

INDIVIDUELL BEDRUCKBAR!

**The insert bag is also individually with Your company logo printable!**

# More organic bags

Order directly

## Organic plant bag

Organic plant bag made of natural plastic based on corn starch. Plants can be easily grown in this bag and then planted in the soil together with the bag. Due to the biodegradability of the natural plastic, the bag slowly decomposes on its own.

- Biodegradable
- Water retention: ensures permanent moisture at the roots
- Water permeable (make a small hole in the bottom of the bag): no risk of Waterlogging
- Air permeable: roots are not hindered from growing

Width: 100 mm
Height: 185 mm
Thickness: 45µm
Packaging: 50 pieces
Item no.: PF001

## Organic garment bag – packaging without pollutants

The special NaKu garment bags made of bioplastic for dry cleaners, dry cleaners, and laundries offer you and your customers many advantages!

NaKu Bio Garment Bags made from bioplastics are made from natural, GMO-free, and rapidly renewable raw materials, are 100% compostable, and free of pollutants and heavy metals. By using NaKu garment bags, you are making a significant contribution to our shared environment and climate!

The NaKu organic garment bags can also be individually printed with your logo!

- Biodegradable
- Guaranteed free from harmful substances
- Special sizes possible

Dimensions: 625 mm wide Minimum order quantity: Depending on size and weight from about 10,000 pieces. Item No.: KS001

Order directly

# Rebags - cotton bags

## With freshness inlay made of bioplastic

Umbeuteln helps you organize your everyday life without disposable packaging. The various bags are made of organic cotton with a bioplastic freshness inlay. This special inlay keeps snacks, fruits & vegetables, etc. fresher for longer. They are washable and reusable.

To clean, simply turn the inlay inside out and wipe it with a sponge or cloth. Please be careful when packing food with sharp edges.

Collaboration with a German sewing factory allows Umtüten transparency and flexibility. In addition to fair wages, suitable working models are offered for everyone. The Tüüten are spun, woven, dyed, printed, and hand-sewn in the Münsterland region, all within a 100-km radius.

In the**Snack-Tüüt – snack bag**It can hold up to four sandwiches, croissants, or your daily vegetable snack. It's therefore ideal for traveling, shopping, or at work. Foods that need to be refrigerated can also be stored in the snack bag in the refrigerator.

The**rebag market-tüüt – market bag**is the sustainable market bag for fruit and vegetables, for example, with a NaKu freshness inlay made of bioplastic. This keeps fresh fruit and vegetables fresh on the way from the market.


- Ideal for transporting snacks
- Vegetable inlay keeps snacks fresh longer
- For up to 4 sandwiches
- Cotton from controlled organic farming
- Wipeable freshness inlay made of natural plastic based on corn starch
- Dimensions: 17 x 21 x 10 cm

- For transporting and storing fruit, vegetables and bread
- For up to 15 apples, 1 head of lettuce or 2 loaves of bread
- Fabric made from recycled jeans and organically grown cotton

- Wipeable freshness inlay made of natural plastic based on corn starch
- Dimensions: 40 x 30 cm (plus 10 cm base)

# Individual organic bags

## Your printing & dimensions

All NaKu organic bags are marked with the NaKu logo and can also be individually printed for orders above a certain quantity (depending on the product).

The banderol of the NaKu rolls can be individually printed for orders of 1000 pieces or more and offers space for your logo, your philosophy or can be used to advertise your campaign!

There is a one-time plate creation fee for custom printing. Up to four colors can be printed. Delivery time is 5-8 weeks after the plate has been approved.

Single-sided, high-resolution digital printing and custom sizes are also available upon request. We're happy to assist you with any further questions or to discuss your individual requirements and preferences.

**Special dimensions**
*Upon request.*

**Individual printing**
*Ask about the minimum order quantity.*

**High-resolution Digital prints**
*Upon request.*

**Delivery time**
*5-8 weeks after Release.*


**Number of colors**
*Pressureup to 6 colors.*


HT002/HT004


HT001/HT003


Handle-hole carrying bag

Mehr Info

# NaKu barrier tape made of bioplastic

Everyone is familiar with barrier tape, as its uses are so diverse. Whether at sporting events, in road construction, in the construction industry, or for rescue organizations, barrier tape is a quick and easy way to mark and cordon off areas in a very short time.

After use, barrier tape should be collected and disposed of properly. Unfortunately, this doesn't always happen, and pieces of barrier tape often end up in the wild. With conventional barrier tape, this poses a problem for our environment, creating microplastics. These tiny petroleum-based plastic particles are not only ingested by animals when they eat, but microplastics entering the soil and waterways also pose a health risk to humans.

The clear advantage of NaKu barrier tape made of bioplastics, in addition to its production based on renewable, plant-based raw materials, is its decomposability. If left in the natural environment, NaKu barrier tape made of bioplastics will decompose, preventing permanent microplastic leaching into the soil, as is the case with conventional barrier tapes.

- **Based on strength**
- **100% biodegradable**
- **environmentally friendly**
- **no formation of permanent microplastics**
- **tear-resistant**

## The 100% biodegradable NaKu barrier tape made of bioplastic is ideal for e.g.:

- Green Events
- Sports events
- Concerts/major events
- Emergency services, fire departments, police, etc.
- Construction industry/road construction
- Film companies/film shoots
- Forestry operations/reforestation areas

**INDIVIDUELL BEDRUCKBAR!**

On special request we can use the NaKu barrier tape from Bioplastic also with Your individual printed.
Minimum order quantity:
200 rolls

**The NaKu barrier tape made of bioplastic, produced from renewable raw materials/plants, is available in the standard version:**

**Width:**75 mm
**Length:**approx. 500 m / roll
**Thickness:**45 µm
**Pressure:**light green with
single-sided NaKu standard printing

**Material:**OK Compost HOME

# „Täuschung bei Biosackerl – NaKu klärt auf.“




VS.


**GEFÄLSCHTES BIOSACKERL**

**ECHTES BIOSACKERL**

More info

# DANGER!

## Plastic bag ban & fake organic bags

**Since January 1, 2020, conventional plastic bags made from petroleum have been banned in Austria. However, biodegradable organic bags are still permitted.**

Counterfeit "bio-bags" are increasingly appearing on the Austrian market. They are labeled as biodegradable plastic, but in reality are not—a clear deception! Apparently, companies, and ultimately consumers, are being duped.

The supposedly biodegradable bags are usually made of polyethylene, a much cheaper raw material derived from petroleum. As can be seen in this picture, the alleged biodegradability is deliberately emphasized, but there is no certification.

However, bags approved for retail sale require a certificate such as the OK Compost seal from TÜV Austria. But even here, you can be deceived, as there are also bags with fake TÜV seals.

When fake organic bags are on the market, it becomes difficult for laypeople to distinguish them from the real ones. That's why we**on our website a guide** created for self-testing at home.

With three very simple methods, you can quickly find out whether the bag you are testing is made of biodegradable plastic or just conventional plastic.

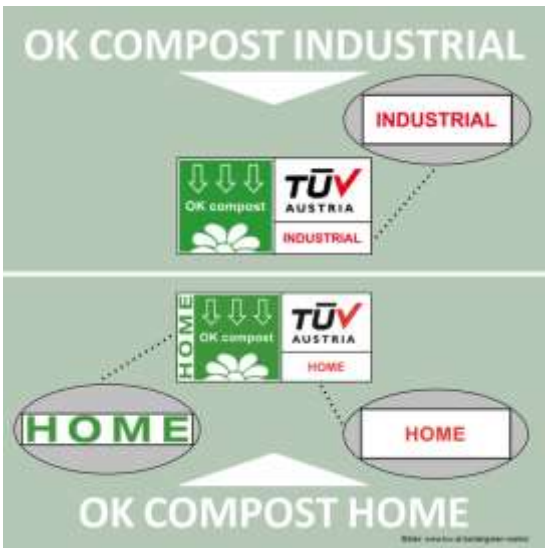

**How compostability is faked. Deception with organic bags. NaKu sheds light on it.**

# THE OK COMPOST SEAL

## What the OK compost seal means

**What do the different seals mean?**

We're often asked what "OK compost Home" means. Many of you may have even seen the "OK compost" seal on organic bags. We explain here what the different "OK compost" seals actually mean.




The seal is awarded by TÜV Austria. There are two versions. The "OK compost INDUSTRIAL" seal is awarded if the product is biodegradable in an industrial composting facility. This applies to the entire product, including additives such as printing inks. Products bearing this seal must comply with the DIN EN 13432 standard.

**OK compost INDUSTRIAL**
DIN EN 13432 is a European standard that defines the requirements for compostability according to OK compost INDUSTRIAL. Products wishing to carry this seal must pass the following tests:

- Chemical testing: Limit values for pollutants such as heavy metals must be observed
- Biodegradable in aqueous medium: 90% of the organic material must be completely degraded to $CO_2$ after six months be dismantled.
- Composting: after three months of composting, no more than 10% of the original mass may remain.
- Influences on composting: There must be no negative impacts on the entire composting process.
- Ecotoxicity test: The composted material is tested for its effect on plant growth.

In effect, this seal guarantees that the material will be at least 90% degraded within 90 days in an industrial composting facility and that it will not have any negative impact on the compost. Note: It may take longer than 90 days in a home compost bin.

**OK compost HOME**
The OK compost HOME seal is also based on the EN 13432 standard. Therefore, the same requirements as for INDUSTRIAL must be met. Due to the lower temperatures, home composting takes longer than in an industrial composting facility. The OK compost HOME seal is therefore intended to guarantee compostability at home in your own garden. All technical requirements are tested to determine whether the product will biodegrade in home compost or not.

In fact, unlike the INDUSTRIAL seal, this seal guarantees that the material will be decomposed by at least 90% within six months in a representative home compost heap. The composting process understandably takes longer at room temperature.

# PLA/rPLA BOTTLES

## The right bottle for every purpose

# PLA/rPLA bottles

## 120% sustainable! The alternative!

Order directly

The 120% sustainable NaKu Bio bottle is the ideal container for beverages! It contains no harmful plasticizers such as bisphenol A, phthalates, or antimony. It is made from 100% plant-based raw materials/PLA plus 20% recycled PLA made from natural plastic (PLA – polymerized lactic acid), or in other words: from plants and lactic acid.

The NaKu PLA/rPLA bottle is also biodegradable! Furthermore, the NaKu PLA/rPLA bottle made of bioplastic is 7% lighter than a comparable PET bottle! This means that, in addition to all other environmentally friendly aspects, $CO_2$ is also reduced during transport.$_2$saved.

The NaKu Bio-Bottle's lifespan is just like that of a regular PET bottle, as long as it doesn't come into contact with microorganisms that would decompose it. This doesn't usually happen in everyday life, so don't worry—the PLA/rPLA bottle is guaranteed to stay watertight in your bag!

The cap is made of BioPE, not PLA/rPLA like the bottle itself. This means the cap is made from renewable resources, but unfortunately, it is not (yet) compostable.

Note: The PLA/rPLA bottle is not dishwasher safe! Max. operating temperature: 55°C

Compostable according to DIN 13432

**PLA/rPLA bottle 150 ml**
Height: 115 mm
Diameter: 48 mm
Neck finish: 38mm 3starter
Weight: 20.5 g
Item no.: FL-NA-150
Item no.: FL-NA-150-21B-KT (box)

**PLA/rPLA bottle 250 ml**
Height: 138.5 mm
Diameter: 55 mm
Neck finish: 38mm 3starter
Weight: 19.5 g
Item no.: FL-NA-250
Art.No.: FL-NA-250-21B (pallet)
Art.No.: FL-NA-250-21K (carton)

**PLA/rPLA bottle 500 ml**
Height: 193.5 mm
Diameter: 65 mm
Neck finish 38mm 3starter
Weight: 26 g
Item no.: FL-NA-500
Art.No.: FL-NA-500-25B (pallet)
Art.No.: FL-NA-500-25K (carton)

*frei von konventionellem Plastik/kein Plastik auf Erdölbasis

**Look**
Transparent and shiny

**Mechanical properties** High strength, 7% lower density than PET – lighter

**Chemical resistance**
Suitable for contact with food, refillable bottle, recyclable

**Temperature resistance** Maximum operating temperature 55°C

Standard 150ml, 250ml and 500ml bottle
Any other desired shape on request.

**Available as:**
- Bottle without cap
- Bottle with extra bio PE cap

**Minimum order quantities:**
Unique piece
Cardboard goods
range
**Delivery:**upon request

For larger order quantities, the bottle is also available with a sleeve or colored. Custom bottle geometries are available for orders of 25,000 or more.

# Individual PLA bottles

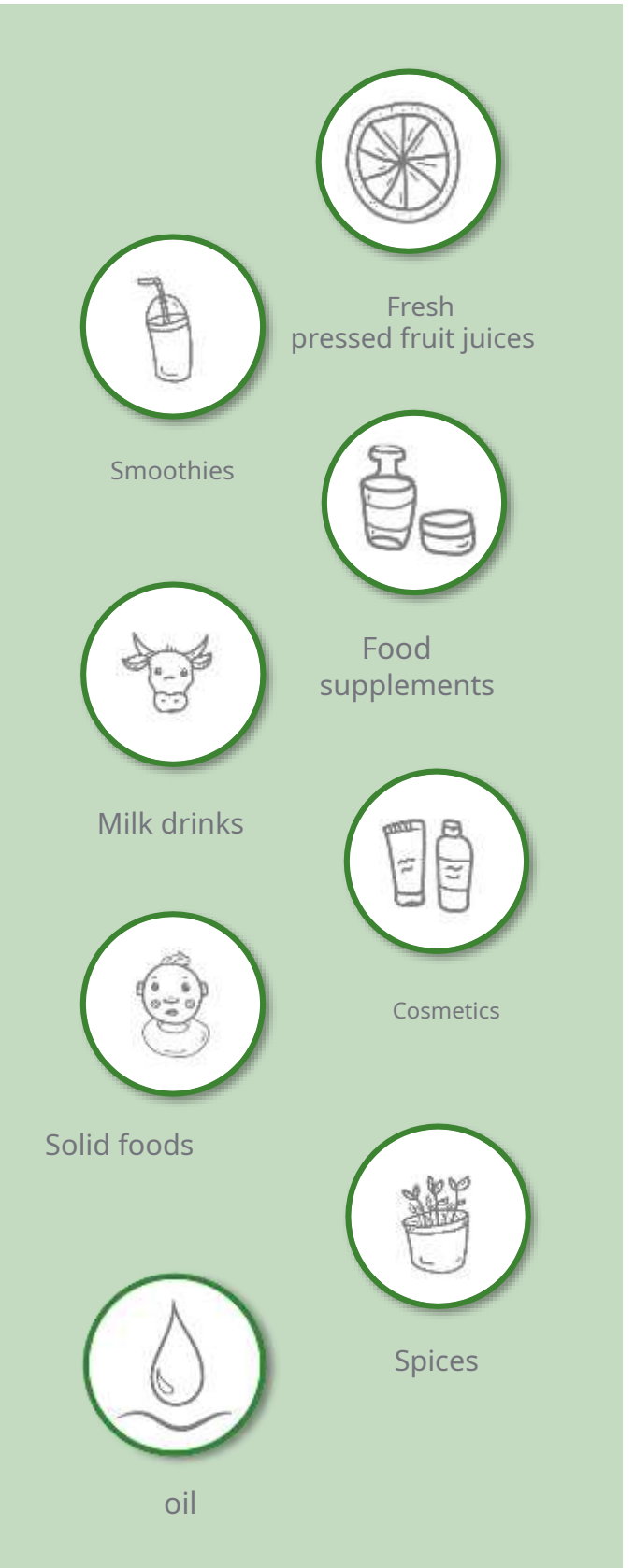
## Your bottle geometry

**Let us tailor your individual NaKu PLA/ rPLA bottle.**

Tailored to your needs: We are also happy to produce NaKu PLA bottles and PLA cans with special customization requests.

Upon request, we can provide a quote for your desired geometry. The minimum order quantity for customers with custom geometries is 25,000 units per order. For larger order quantities, the bottle can also be colored. Sleeving is also possible.

We will be happy to help you with any further questions or to clarify your individual wishes and ideas.



# NOT PLASTIC WATER

## Nature in your hands

More info


**Unbelievable but true:**There's nothing but nature in this bottle! Petroleum-based plastic? – Not a chance! Because the NaKu bottle is made from 100% natural plastic (PLA), which is made from plants or lactic acid. This makes it fully recyclable and even biodegradable. (DIN 13432)

Minimum order quantity: 5 cartons (60 PLA bottles 330ml)
Order gradation: 5 cartons, 1 pallet each
(108 cartons of 12 PLA bottles 330ml WILDALP spring water)
Item No.: Carton: NPW-330ml/Pallet: NPW-330ml-Pal


Composting of the bottle in industrial compost (at 60°C) within 35 days according to DIN EN 13432 (standard requires <90 days)

# VIENO organic sunflower oil

## Natural enjoyment without petroleum plastic

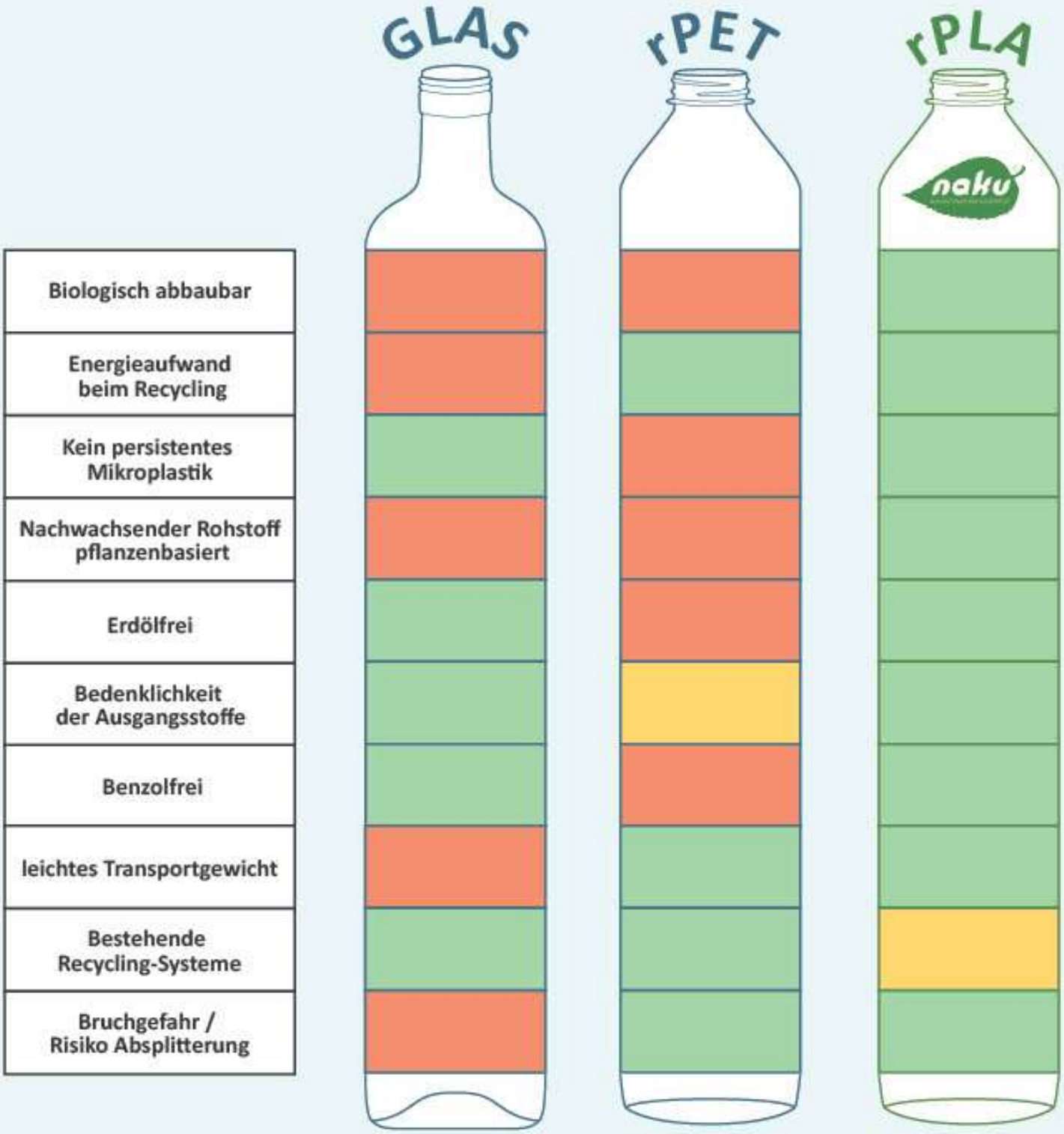
More info


**VIENO Organic Sunflower Oil – Quality and Packaging**
To keep healthy cooking oils with a high content of unsaturated fatty acids fresh for a long time, the material of the packaging or bottle is crucial. PLA packaging more than holds its own when compared to PET bottles.

A recent study conducted by a research team at the University ViennaThis study concluded that bioplastic bottles made of PLA not only protect cooking oil from oxidative deterioration to a similar extentnot only preserve the quality of PET bottles, but also produce fewer substances that impair taste and odor.

# MATERIALVERGLEICH

## Pro und Contra



# 120% sustainable!

## The petroleum-plastic-free alternative!

**Can something be more than 100% sustainable?**
The new NaKu bottle made of PLA/rPLA (bioplastic) achieves this feat: 100% plant-based raw materials/PLA plus 20% recycled PLA guarantee natural and absolutely petroleum- and plastic-free drinking pleasure.

By combining plant-based raw materials with resource-efficient recycling of bioplastics, NaKu has come a step closer to its vision of a sustainable yet practical plastic bottle.

# Recycling of bioplastics

More info

**Recycling of bioplastics – sustainable, resource-saving**

NaKu's vision is to combine recycling and organic production with its products. Natural plastic should be given priority for recycling because it is ideally suited for this purpose. Even though the quantities are currently very small, the goal is to combine the two key disciplines of sustainability—regrowth and recycling.

Our products enable both physical and chemical recycling. Sorting on conventional PET sorting systems, as well as recycling and, in the final step, the recovery of the molecular building blocks, work very well.

**Physical recycling:**In physical recycling, used bottles are first cleaned and then shredded into small pieces called flakes. These flakes are melted and formed into pellets from which new bottles can be made.

**Chemical recycling:**In contrast, chemical recycling breaks down the bottle material into its molecular components. These are then reassembled (repolymerized) to create a fresh raw material that is used to make new bottles. This depolymerization means recycling raw materials and is easier for us with lactic acid to avoid any loss of quality.

These two recycling methods offer effective ways to extend the life cycle of plastic products and use resources sustainably. A large portion of our bottles currently consist of at least 20% chemically recycled bioplastic.

# PET BOTTLES

## Science - Studies - State of the art

**From the median:How much microplastic and nanoplastic do we ingest by drinking from PET bottles?**

Naixin Qian's team at Columbia University in New York obtained conventional 1-liter plastic water bottles from three different US supermarkets and examined them for nanoplastics. Each of these PET bottles contained approximately 240,000 plastic fragments. Unlike PET bottles, we don't ingest permanent microplastics when drinking from bioplastics.

**New study on the shelf life of cooking oils:**
**What happens when oil goes rancid?**

Researchers at the University of Vienna conducted a study to examine the shelf life of sunflower oil in various bottles, including the bio-based NaKu bottle.

We all know the pungent smell of rancid oil. Learn what happens to oil when it goes bad and what's important to make it last longer on our website!

**New study on health and cooking oils: Are PET bottles a concern?**

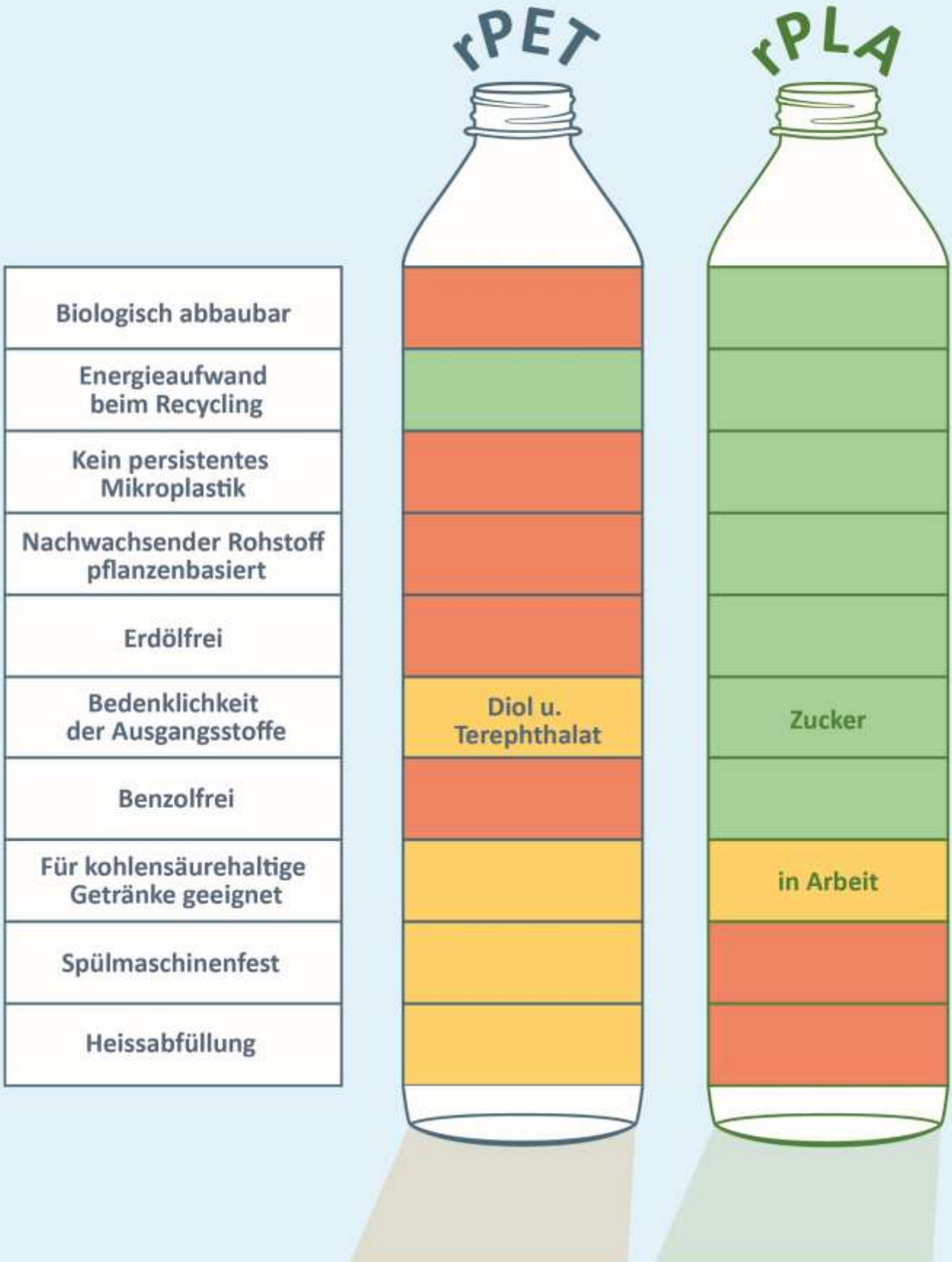
The new study by the University of Vienna also found that the PET bottle releases carcinogenic benzene into the oil over the storage period.

The researchers in this study analyzed the stored sunflower oil for benzene after 56 days and measured a concentration in the samples stored in PET bottles that was 140 times higher than permitted for drinking water.

In comparison to the PET bottle, the NaKu bottle tested in this study is made of completely natural materials (sugar as the starting material), which is why no harmful substances can be released from the bottle.

# Gibt es etwas Grüneres als rPET?

## rPET und rPLA im Vergleich



# PLA CANS

## The right can for every purpose

Order directly

# PLA/rPLA CANS/BIO CANS

## The multi-purpose cans made of bioplastic

**The environmentally friendly can made from renewable/plant-based raw materials.**

**Petroleum-plastic-free packaging!**The resealable NaKu organic container made of PLA/rPLA is ideal for ice cream, but is also suitable for food supplements, powders, tablets, spices, pasta, and many other food products. We can produce labels with your individual imprint for both the lid and the organic container.

Our containers are made from plants and lactic acid. They contain no harmful plasticizers such as bisphenol A, phthalates, or antimony and are made from 100% bioplastic (PLA/rPLA), or in other words, from plants and lactic acid. This protects the environment and is also very good for us humans, as no potentially harmful substances are released upon contact with food!

The NaKu Bio-Can's lifespan is just like that of a conventional can made of petroleum-based plastic, as long as it doesn't come into contact with microorganisms that would decompose it. However, this rarely happens in everyday life, so don't worry—the Bio-Can is guaranteed to stay leak-proof!

While oil is becoming increasingly scarce and expensive, natural resources offer a renewable source of raw materials.

- **from renewable raw materials**
- **Can and lid can be labeled**
- **Washable with warm water, but not dishwasher safe (max. 55°)**
- **Versatile & reusable**

*Let us tailor your individual NaKu PLA/rPLA container.*

**PLA/rPLA can 500**
Volume: 525 +/- 12 ml
Weight: 40.9 +/- 1g g
Dimensions: 114 mm high
Diameter: max. 87.5 mm
Thread: 82 mm Twist Off
Art.No.: DO-NA-525

**PLA/rPLA can 325**
Volume: 334 +/- 6 ml Weight: 25.1 +/- 1 g Dimensions: 69.9 mm high Diameter: max. 87.23 mm Thread: 82 mm Twist Off Art.No.: DO-NA-334

**PLA/rPLA can 150**
Volume: 162 +/- 7 ml Weight: 14.4 g +/- 0.5 g Dimensions: 70 mm high Diameter: max. 60.6 mm Thread: 53 mm Twist Off Art.No.: DO-NA-162

# Test tube/sample tube

## made of bioplastic/PLA

Order directly

The NaKu bio-test tube/bio-sample tube made of PLA/bioplastic is the ideal environmentally friendly container for a wide variety of applications – completely free of petroleum-based plastic! It contains no plasticizers such as bisphenol A, phthalates, or antimony and is made of 100% natural plastic (PLA/rPLA), or in other words: from plants and lactic acid.

Biotest tubes/biosample tubes are very durable due to their particularly thick material. The special wide neck shape makes filling easier.

The wide rim allows the biotubes to be optimally hung in the stand.

Screw cap with
The biotest tube can be sealed with a tamper-evident ring.

Delivery is in a pack of 10, including screw cap with Originality ring.

If you require larger quantities or other geometries of PLA/bioplastic test tubes, please contact us.

The PLA test tubes are not dishwasher safe! The maximum operating temperature is 55°C.

- **Made from plant-based raw materials/PLA**
- **100% biodegradable**
- **Compostable**
- **Pollutant-free**
- **No permanent microplastics**
- **Extra large filling opening**
- **Filling quantity up to the retaining ring: approx. 28 ml**
- **Outer diameter: approx. 24 mm**
- **Diameter at widest point of neck: approx. 36 mm**
- **Outside height without closure: approx. 96 mm**

The cap is made of BioPE, not PLA like the bottle itself. This means the cap is made from renewable resources, but unfortunately, it is not (yet) compostable.

- As sample tubes for sample sticks
- For collecting and transporting food samples
- Rock samples & rock pieces from mineral collectors or gold prospectors
- For filling spices & salt
- For storing liquids
- For collecting/storing plant seeds
- For collecting insects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# Biopolymer films

## Biofilm based on starch & sugar

Further information

# Biopolymer film

## The film made from plant-based raw materials

Biopolymer film is ideal for applications where stronger paper or conventional petroleum-based plastic films need to be replaced in an environmentally friendly and sustainable way, and biodegradability and composting are important considerations. This also applies to applications where the product may intentionally or inadvertently enter the environment.


The biopolymer film is ideal for applications where long-term and medium-term use is required and/or where water resistance or humid environmental conditions are important.

Biopolymer film is based on rapidly renewable plant-based raw materials (sugar and starch), whereas paper is made from slow-growing trees.

**Why a film made of bioplastic**

The production and energy requirements for paper production are many times higher than those for the production of biopolymer film. The paper production process itself—with all its additives, bleaching, and drying processes—also takes longer, and enormous amounts of water are required for paper production. Biopolymer film contains no chemical additives.

Conventional films (e.g., for plastic labels and plastic product labels) are made from petroleum. This is neither environmentally friendly nor sustainable. If such film products enter the environment, they decompose and produce persistent microplastics that are hazardous to both animals and humans. Such films are also usually contaminated with pollutants.

**The biopolymer film is the starting material for countless applications**

- **(Clothing labels**
- **Loop labels/loop labels**
- **Carrying handles and**
- **Stick-on labels and price labels and picture cards**
- **Tree protection covers**
- **door hanger**
- **Label cards**
- **Billboards & advertising banners and much more...**

- From rapidly renewable, plant-based raw materials
- Pollutant-free
- Industrially compostable according to DIN 13432
- No formation of permanent microplastics
- Easy to write on and print on
- Water-resistant, dimensionally stable & tear-resistant
- Less energy consumption than in the production of paper
- No sizing is required (necessary with conventional paper, otherwise it cannot be written on)
- Locally produced – made in Austria

# Organic labels

## Especially for sustainable gardening

### For soils and plants without microplastics

Further information

Everyone is familiar with them, as the uses of stick-on and loop labels are so diverse. They're a quick and easy way to quickly label plants in pots or beds, or even to mark prices—and they're completely environmentally friendly, too, as they're made from bioplastics based on rapidly renewable resources.

The bioplastic stick-on labels and loop labels are reusable, waterproof, and withstand various weather conditions, whereas paper decomposes in the rain. They are also compostable according to DIN 13432.

**Ideal for environmentally conscious and sustainable companies**

The clear advantage of bioplastic stick-on and loop labels is their biodegradability, in addition to their production from rapidly renewable, plant-based raw materials. Unlike conventional PVC products, they do not leave behind any permanent microplastics in the soil, which also prevents plants such as vegetables from absorbing microplastics from the soil as they grow.

PVC stick-on labels and loop labels decompose into microplastics. And no one wants these in the soil, in the plants themselves, or in the compost. This risk doesn't exist when using organic labels, as they are biodegradable and don't leave behind any lasting microplastics.

There are also insert labels and loop labels made of paper. The production and energy requirements for paper production are many times higher than for bioplastic production. The paper production process itself, with all its additives, bleaching, and drying processes, also takes longer, and enormous amounts of water are required for paper production.

- From rapidly renewable, plant-based raw materials
- pollutant-free
- compostable according to DIN 13432
- No formation of persistent microplastics
- Easy to write on and print on
- water-resistant, dimensionally stable & tear-resistant
- Reusable
- Locally produced – made in Austria

BEDRUCKT UND UNBEDRUCKT LIEFERBAR

# Sugar card

## Sugar instead of PVC

Further information

The card is a product that is only used for a relatively short period of time. The environmental aspects and the advantages of a card made from renewable raw materials (bioplastic) are obvious.

From blank white cards to customized cards—everything is possible! Of course, also with barcodes, chips, and much more.

Did you know that conventional cards are still made of PVC? In Austria alone, 70 million cards are needed annually. One card weighs approximately 5 grams—so we're talking about 350,000 kilograms of PVC annually.

**The $CO_2$Sugar card balance sheet**
The production of the sugar card produces 50% less $CO_2$ compared to PVC cards. This applies to the card itself without including the antenna/chip. Compared to PVC, PLA as a raw material results in a $CO_2$Savings of 75%.

**The material of the sugar card**
The sugar card is made of sugar and starch. It already contains 15% recycled bioplastic.

**The compostability of the sugar card**
The map material is compostable according to DIN 13432. The compostability of the entire map depends on the built-in antenna technology and the printing inks used.

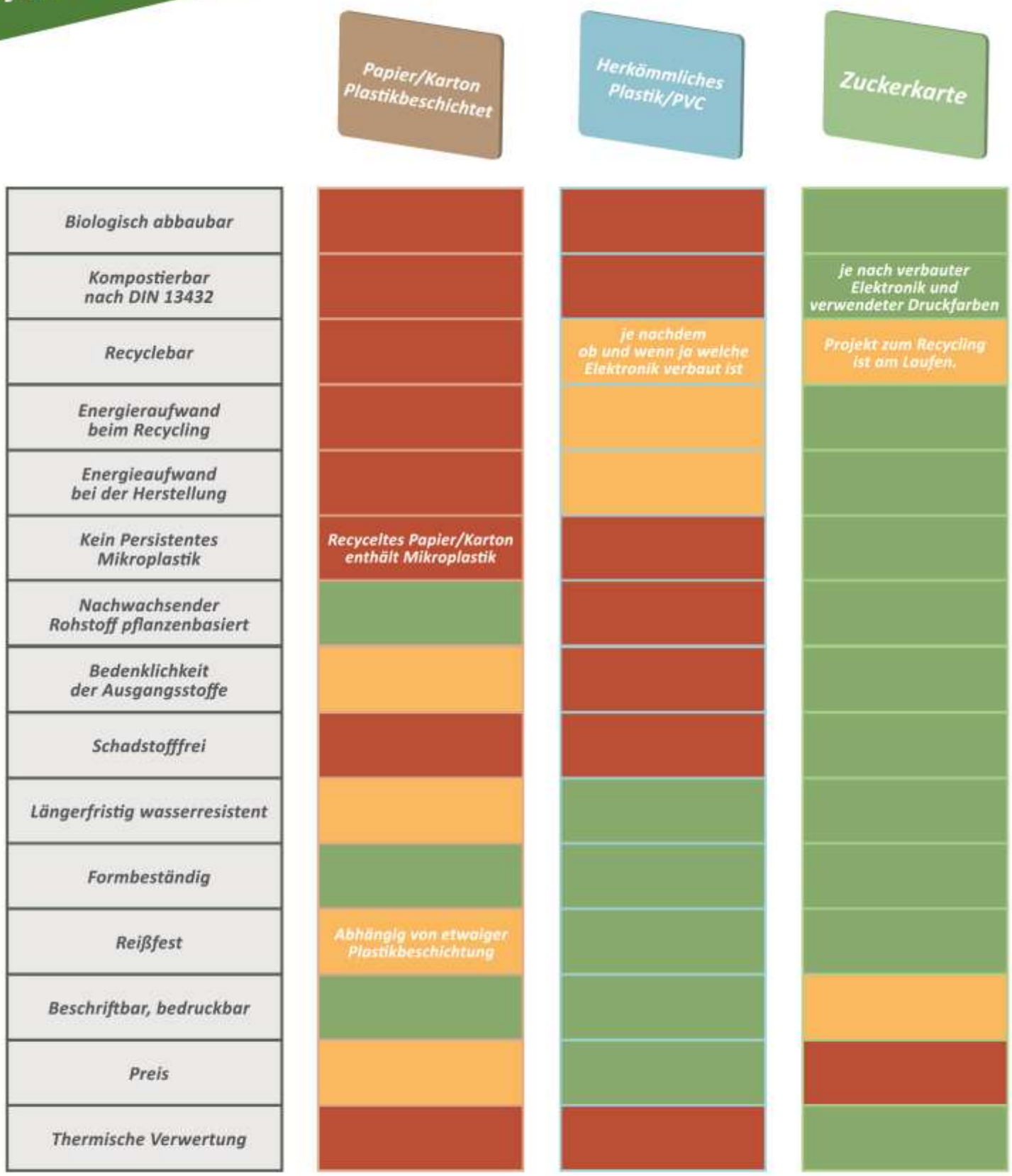
**The recyclability of the sugar card**
A project to recycle the card is underway. A minimum of approximately 1 ton of material is required for recycling. Based on a card weight of 5 grams, this equates to approximately 240,000 cards. Other bioplastic products can also be recycled.

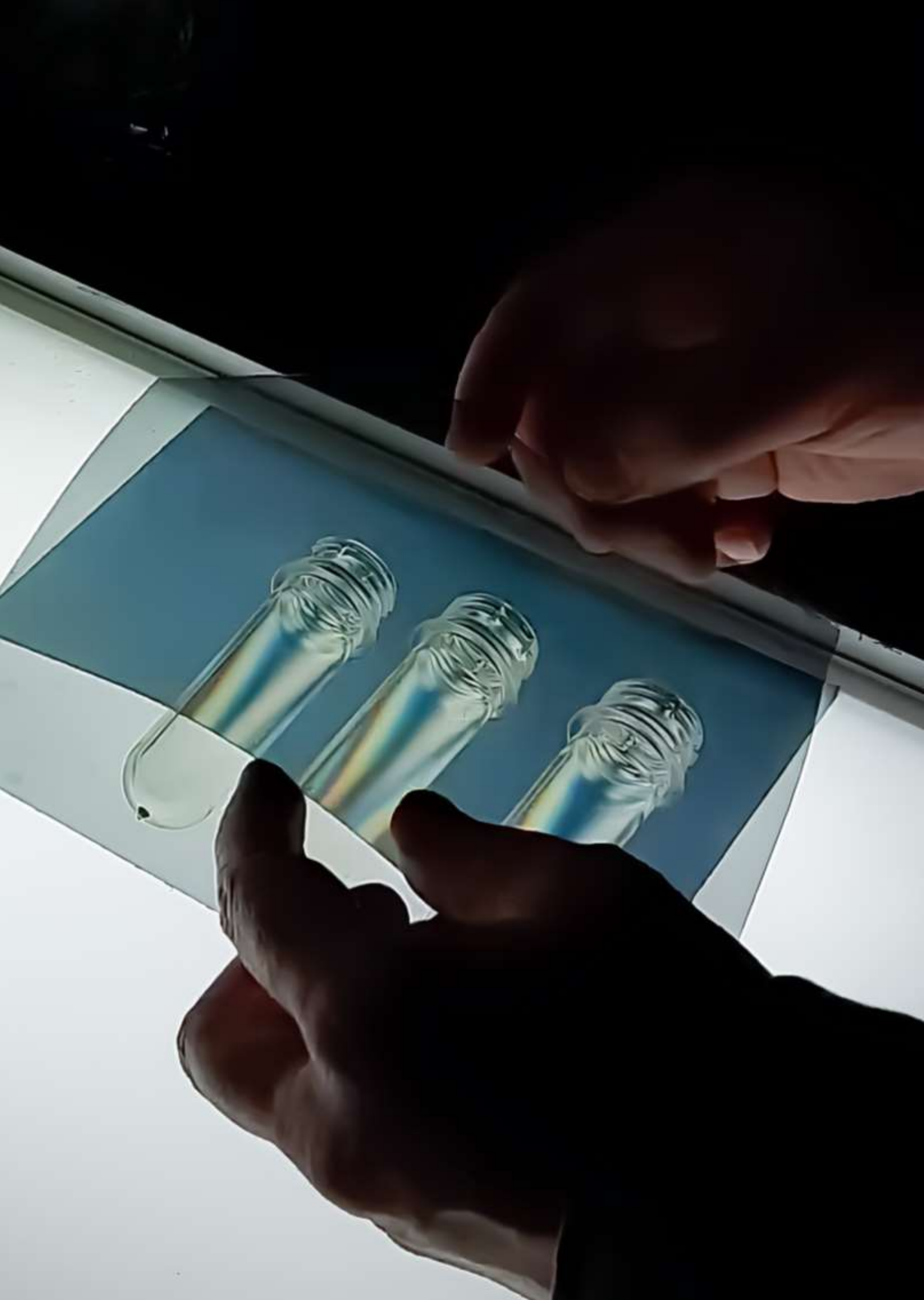
PVC 2,1 kg $CO_2$
PLA 0,51 kg $CO_2$
rPLA 0,19 kg $CO_2$
Äquivalent pro kg Material

BEDRUCKT UND UNBEDRUCKT LIEFERBAR

- Renewable raw materials
- Lower $CO_2$Footprint compared to PVC cards
- Compostable & recycling project underway
- Water-resistant, dimensionally stable & tear-resistant
- Card technically tested according to CQM, ISO 7810 & 10373
- Easy to write on and print on
- Regionally produced

# Materialvergleich von Kartenprodukten





# PROJECTS

## Your idea – our joint project

made of bioplastic

# art project

## Ants made of bioplastic

More info

**Art project by Julia Bugram with NaKu**

Julia Bugram's Ant Project is an art project that takes place in public spaces. Children glue bioplastic ants onto school paths, squares, etc. to explore public spaces.

To ensure that the ants do not pose a threat to the environment when exposed to weather conditions, they are made of bioplastic.

**Why does NaKu Ants made of bioplastic?**

My special projects are made from bioplastics. From NaKu. Here we manufacture children's toys, packaging for natural cosmetics, and much more.

# Biopackaging

## Replaceable cartridge made of bioplastic

More info

**Natural cream packaged in petroleum- and plastic-free packaging!**The interchangeable cartridge made of bioplastic – which contains the natural cream – is inserted into the freemee cosmetics cream jar made of fine wood and glass.

When the cream is empty, simply replace the bioplastic cartridge.

# Your idea

## Our joint bioplastics project

### We also realize your project
### made from our bioplastic!

As can be seen from the example of the bioplastic interchangeable cartridge for the freemee cosmetics cream jar, even very complex components

Individual components made of bioplastics are possible. Small components made of bioplastics can be manufactured using our strengths. With our expertise, your packaging project can be realized without pollutants and without using raw materials.

In the field of bioplastics, the material quality is higher than with conventional plastics. With us, it's possible!

**Do you also have a**

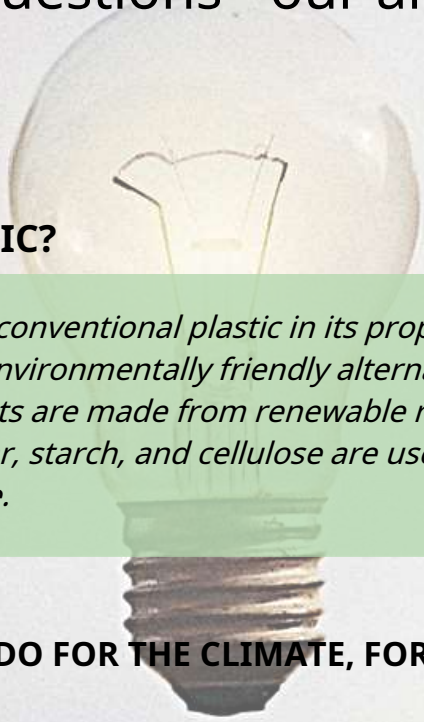
**that they are made of bioplastic**

**Then take with you**

More info

# FREQUENTLY ASKED QUESTIONS

## Your questions - our answers



### WHAT IS NATURAL PLASTIC?

*Natural plastic is very similar to conventional plastic in its properties, but is made from plants and therefore offers an environmentally friendly alternative to petroleum products. At NaKu, most products are made from renewable raw materials and are completely biodegradable. Sugar, starch, and cellulose are used instead of styrene, terephthalate, and vinyl chloride.*

### WHAT DOES THE NAKU BAG DO FOR THE CLIMATE, FOR EXAMPLE WITH REGARD TO $CO_2$?

*Processing NaKu granulate requires similar amounts of energy as processing conventional plastics. Due to their compostability and the fact that the raw material is made from renewable resources, natural plastic carrier bags currently have a better carbon footprint than the same items made from conventional plastic.*

### Are any other chemicals added during processing? If so, which ones?

*Only materials that meet the strict requirements of DIN EN 13432, the current standard for biodegradable materials, are added. After our products decompose, they produce Grade A compost, the best nutrient for new plants.*

### CAN YOU CERTIFY GMO-FREE AND CONTAMINANT-FREE?

*It is very important to us that the starch used in our products is free from genetic engineering. The only drawback: all the advantages (GMO-free, $CO_2$-saving production, food-safe, biodegradable, etc.) of our product unfortunately still result in higher production costs.*

# WORTH KNOWING

## Information on bioplastics

More info

# ENERGY GLOBE

## NaKu planting bag made of bioplastic

**NaKu was awarded as winner in the Earth category at the Energy Globe Austria and was also nominated for the 22nd Energy Globe World Award!**

This was the result of the specially developed**Organic plant bag** for the Kenyan reforestation project “Books for Trees” of the HBLFA Gartenbau Schönbrunn for people and the environment and won in the Earth category!

Thanks to the "Books for Trees" reforestation project of the Schönbrunn University of Applied Sciences and Arts, forests in Kenya are being reforested to prevent further land erosion caused by previous deforestation. The ban on plastic bags in Kenya put a stop to this reforestation project.


***We are especially proud of our nomination for the 22nd Energy Globe World Award in the Earth category. The international jury***
***all 5 continents under the chairmanship of Maneka Gandhi from a total of around 3,000 Submissions from more than 180 countries selected.***

The challenge for NaKu was therefore to develop a sustainable and cost-effective bioplastic-based planting bag solution in the shortest possible time. Together with HBLFA Gartenbau Schönbrunn, we developed a bioplastic planting bag that ensures a continuous water supply to the roots, thus optimizing plant growth.

The bioplastic planting bag decomposes quickly without leaving behind microplastics. Different formulations, geometries, and thicknesses were tested for optimal growth and ease of handling.

The newly developed organic planting bag is now being tested on a large scale in various climate zones in Kenya. The first 30,000 trees are already being planted in NaKu planting bags in Kenya! The organic planting bag is very easy to use, and it eliminates steps that are necessary with conventional plastic planting bags. This makes the work much easier.





naku®
AUS NATÜRLICHEM KUNSTSTOFF

# Awards



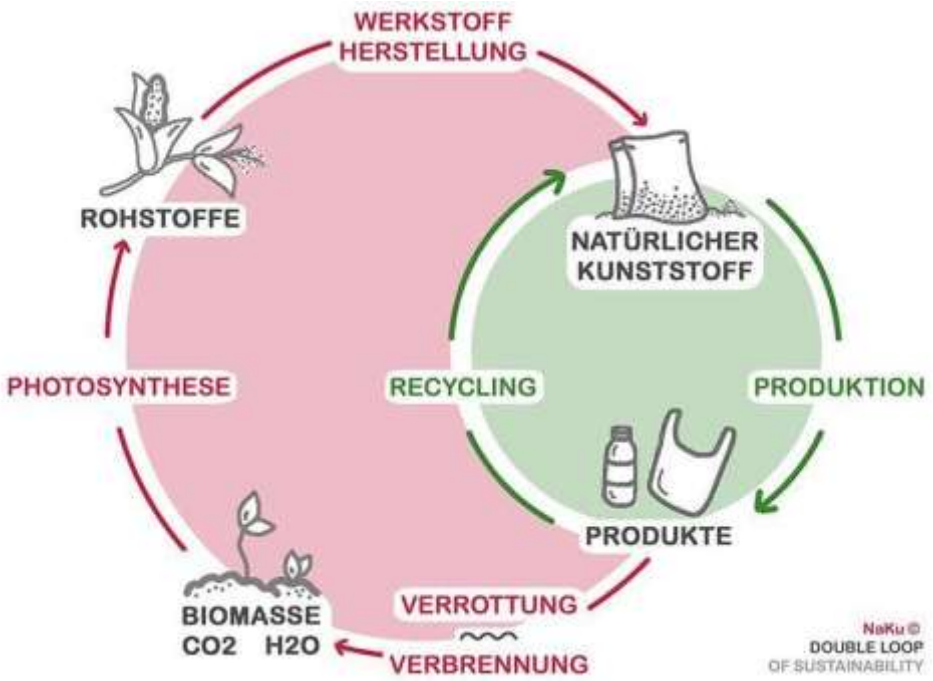

More info

# The NaKu cycle

## Nature and plastic – a contradiction?

NaKu products fulfill their purpose while protecting our environment.

Packaging materials have never been so sustainable – from the selection of natural raw materials, through the production of the products (bottles, bags, etc.), to recycling and composting.




NaKu's vision is to combine the recycling cycle and the biological cycle with its products, because natural plastic should first and foremost be recycled and is also very easy to recycle.

With our products, both existing mechanical recycling and future-oriented chemical recycling (the recovery of molecular components) work very well.

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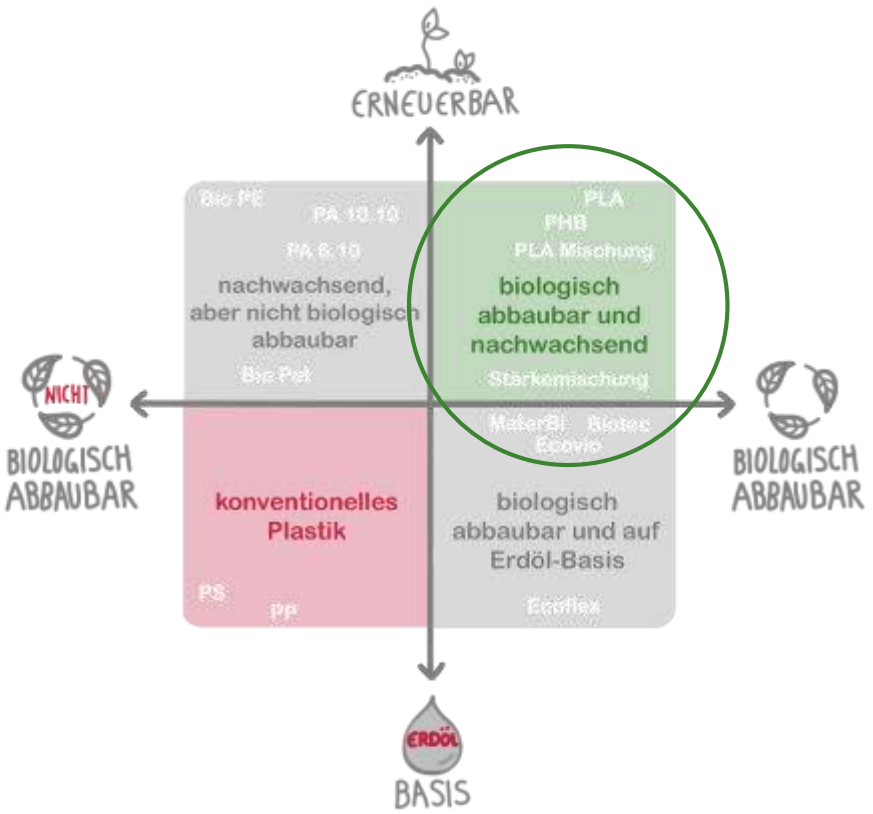
k

# The plastic cross

## Nature and plastic – a contradiction?

More info

Natural plastics find a wide range of applications in industry due to their good degradability and high biocompatibility. Everyday products with a shorter service life are particularly suitable. The use of natural plastics ranges from bottles, shopping bags, films, cups, party tableware, disposable products, hygiene articles, self-dissolving sutures, fruit,




Natural plastic is the term used for plastics made from renewable raw materials and biodegradable. It combines both requirements and offers advantages throughout its entire life cycle. NaKu has been working with natural plastics for more than 15 years and has acquired extensive expertise in this field over the years.

Modern technology enables the production of various bioplastics. These can be obtained from domestically grown crops such as potatoes, corn, or grains. Bio-based plastics obtained in this way are very similar to conventional materials and can be processed using the same technologies and machinery.

The crucial difference, however, is that if our natural plastic is exposed to a combination of heat, moisture and bacteria over a long period of time, it will rot completely.

This means that NaKu products made from natural plastic can be disposed of with the plastics recycling after use or even composted. However, even our 100% biodegradable products shouldn't be simply thrown away carelessly. Our products therefore don't burden future generations with mountains of plastic waste.

NaKu's goal is to use this environmentally friendly and resource-saving technology of bioplastics to create everyday products with a high level of development. Natural plastics are thus usable for everyone.

More info

# 2022 – 15 years of NaKu

## From pioneer and visionary to Globe Award

### How it all began – the first thoughts

When Ute and Johann Zimmermann's children were still small (Moritz is currently in the middle of his high school graduation, and Johann Jr. is already at university), their parents had to justify how much single-use plastic a family of four actually throws away in the trash and why everyone is participating in a system that is so clearly headed in the wrong direction. So the search began for whether there really was no alternative.

Johann Zimmermann first encountered the then-new plastic (lignin-based bioplastic) back in 1999/2000. Both Zimmermanns were fascinated by the fact that a 100% bio-based, renewable material existed, even though it smelled and was sticky, and even for specialists, it was difficult to get anything out of the machine.

### The path to self-employment and company founding - 2007

Ute and Johann Zimmermann have always wanted to start their own business since 1994. The decisive factor in finally taking this step was some inspiration from friends and Johann Zimmermann's then-boss, who knew about this long-held wish.

### The naming and the first product

No sooner said than done – the question now arose: what should the company actually be called? Ute and Johann Zimmermann decided very early on on the core term "natural plastic" – today's abbreviation "NaKu" – because they felt that "organic" was too inappropriate. At that time, there wasn't yet a clear classification of bioplastics, nor was there a definition of what these plastics should be called.

The name had been found, and now only the first product made of bioplastic remained to be developed. In short – the now familiar NaKu bag was born.

Over the following years, new bioplastic bags were added to this initial version. Some were organic carrier bags in various sizes and thicknesses, while others were designed for specific household purposes, such as organic freezer bags, organic fresh-keeping bags, and organic garbage bags. Innovations such as the bioplastic garment bag for dry cleaners and the NaKu planting bag followed.

### The first years

Life isn't always easy as a visionary and pioneer. The years up to 2017 were challenging for NaKu. NaKu was repeatedly attacked with the same arguments: bioplastics aren't organic at all, bioplastics aren't a renewable resource, NaKu is just greenwashing. Bioplastics are made of genetically modified plants, etc.

There was strong opposition to this new material, especially in the plastics industry. Even though the general public never saw it as black and white, but rather as more of a gray area, the question quickly arose within the plastics industry: If THEY at NaKu are making the good plastic, what are we doing?

But there were also other reservations about bioplastics. Ute Zimmermann reports: "The use of biodegradable products requires that one deals with the consequences of the product
It presupposes how seriously I take sustainability. Is it a fig leaf for better marketing, or is it part of my corporate philosophy?

Johann Zimmermann says from experience and many conversations: "Price was and is the main reason for deciding against a product made of natural plastic. If our materials cost the same as conventional PET, it would be a clear choice for our customers to opt for the organic version.

This has also led to many of those with whom we developed products together ultimately deciding otherwise."

## Succeed with perseverance and confidence in your own products

But it wouldn't be Johann and Ute Zimmermann if they let this headwind stop them. They persistently developed the aforementioned products, and recyclable and compostable bottles made from PLA followed. A study on the freshness-preserving properties of NaKu bags was conducted at the University of Natural Resources and Life Sciences (BOKU) in Vienna in 2009, and it was proven that food stays fresh longer—a topic more relevant than ever today when it comes to food waste.

In the following years, NaKu bioplastic products won numerous awards, including the Genius Award, the Clusterland Award, the ÖGUT Environmental Award, the Lower Austria Innovation Award, the DAPHNE Environmental Technology Award, and many more. The crowning achievement was the 2021 victory at the Energy Globe Award Austria in the soil category for the NaKu bioplastic planting bag, which was developed together with the HBLFA Gartenbau Schönbrunn for the Book for Trees project in Kenya.

## NaKu in the Corona years

The last few years, marked by the coronavirus pandemic, have presented a significant challenge for every company. However, NaKu has used this time for time-consuming new product developments and customer projects. One particularly technically challenging customer project was the bioplastic interchangeable cartridge for a sustainable, reusable jar (made of wood and glass) for freemee cosmetics' natural cosmetics. Furthermore, NOT PLASTIC WATER was developed with WILDALP. A unique product, spring water from the Gesäuse region, bottled in a special NaKu PLA bottle. This is the first time that plastic-free
Drinking pleasure possible.

## And so it goes on

Johann and Ute Zimmermann have been giving lectures on bioplastics at universities, schools and conferences for many years.

Raising awareness and sharing their long-standing expertise in bioplastics is a particular concern for them. Counterfeit bio-bags are now increasingly appearing on the market – a clear deception by retailers who, due to the plastic bag ban, are now only allowed to sell lightweight and degradable carrier bags made of bioplastic. Here, too, education and information are needed, and appropriate informational videos have been produced.

Very intensive work is being done at the NaKu Double Loop and on bioplastics and their
To better position the product's recyclability. Previous test runs for recycling bioplastic bags have been positive. Initial test productions using recycled PLA for bottles have also been promising.

## 2022 – A milestone: The 120% sustainable NaKu PLA/rPLA bottle is launched

The new NaKu rPLA bottle is made from 100% plant-based raw materials and already contains 20% recycled PLA.

### 2023 – Study by the University of Vienna

The new study by the University of Vienna also found that the PET bottle compared with the NaKu PLA bottle releases carcinogenic benzene into the oil over the storage period.

In comparison to the PET bottle, the NaKu bottle tested in this study is made of completely natural materials (sugar as the starting material), which is why no harmful substances can be released from the bottle.

***"For us, the combination of nature***
***and technology are not a contradiction,***
***but the only way to save life***
***to secure the long-term future of this planet.***
***The idea of sustainability should not be***
***Stop packaging and leave waste with***
***the generation that creates it.***
***Because plastic can also be natural."***

**DI Mag. Johann Zimmermann**

Note on our own behalf: You can find information on the topics discussed at www.naku.at
further information.

# YOUR CONTACT

## Your personal contact for

Projects, Technical Management, Sales

## Get in touch – Contact us!

You need special organic bag dimensions
or bag printing?
Are you looking for special bottle containers?
You would like to test an existing or new product
made from natural plastic?

**Then contact us with your ideas and wishes!**

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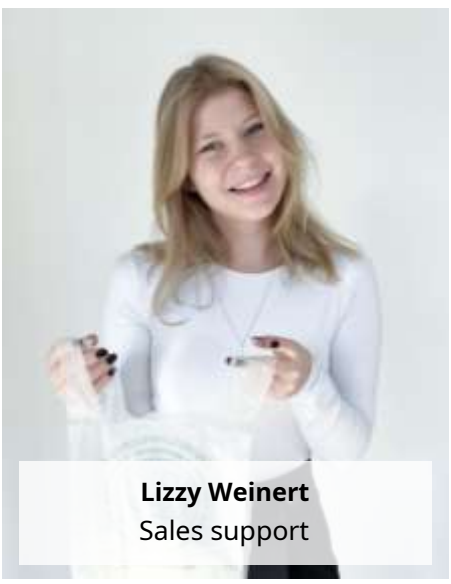

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