NUREL BIOPOLYMERS

inzea® BIOPOLYMERS

SINGLE-USE SOLUTIONS

THE SUSTAINABLE CHOICE

A SUSTAINABLE ALTERNATIVE TO SINGLE-USE PLASTIC MATERIALS

Single-use plastics are among the **most widely consumed** products worldwide. Items such as straws, disposable cups, cutlery, plates and coffee capsules are practical and convenient, but their **environmental impact is significant**.

Once discarded, most of these plastics are **difficult to recycle**, often contaminated with food residues, and usually **end up in landfills** or as persistent waste in the environment.

INZEA® offers **a new generation of compostable biopolymers** designed to **replace conventional plastics** in these everyday items. Our grades combine **functionality**, **safety** and **sustainability**, ensuring that **performance** is never compromised while **reducing the environmental footprint**.

The footprint of single-use plastics on our environment

INZEA® FOR SINGLE-USE APPLICATIONS:

BIODEGRADABLE AND COMPOSTABLE

INZEA® grades naturally break down in composting environments, ensuring a safe end-of-life with no persistent waste.

CERTIFIED COMPOSTABILITY

INZEA® grades are certified by TÜV AUSTRIA with OK compost INDUSTRIAL, guaranteeing compostability in both industrial and household conditions.

FOOD CONTACT

Certified safe under EU and FDA regulations, INZEA® biopolymers can be used in direct contact with food and beverages without risk.

VERSATILE PROCESSING

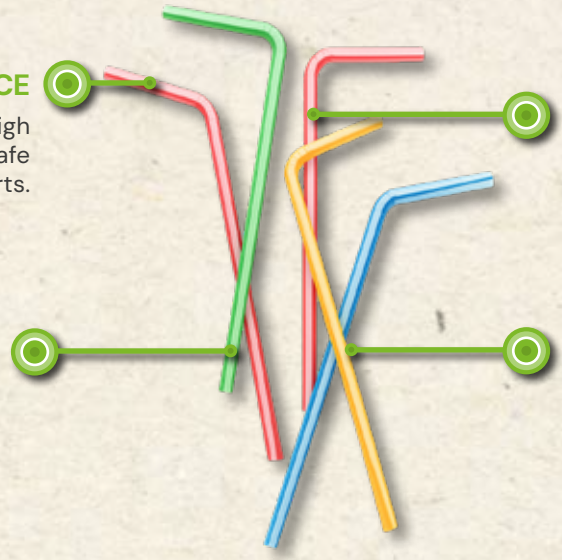
INZEA® can be transformed using standard plastics technologies, including extrusion, injection moulding or thermoforming.

REPLACING CONVENTIONAL PLASTICS

Engineered to match the performance of polyolefins, PS or PP, INZEA® enables sustainable substitution.

STRAWS, STIRRERS & ICE-CREAM SPOONS

The use of single-use items such as **straws**, **stirrers** and **ice-cream spoons** is often essential, whether in hospitals and care centres, in children's milk bricks, or in leisure and hospitality. However, conventional plastic versions of these products can take **up to 500 years to degrade**, while **paper alternatives often fail during use**, bending or disintegrating in contact with liquids.



HEAT RESISTANCE

Grades like F2 HTS withstand high temperatures without deforming, safe even for hot drinks and frozen desserts.

SUSTAINABLE END-OF-LIFE

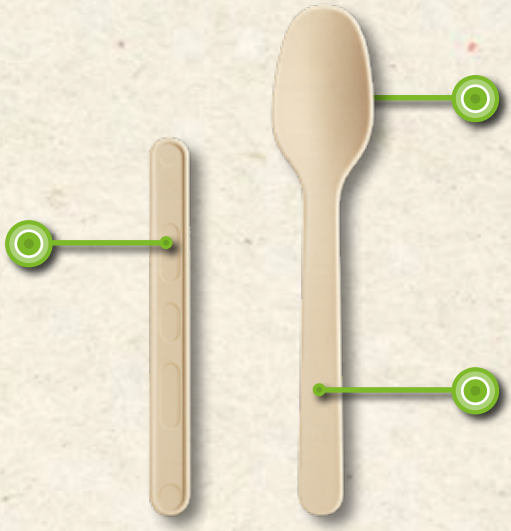
Certified grades available with OK compost INDUSTRIAL (F38, F2 HTS 451) and OK compost HOME (F18CH).

RIGID OR FLEXIBLE OPTIONS

Available in different grades, such as F38 for flexible or corrugated straws, offering reliable performance across applications.

FOOD CONTACT SAFETY

Compliant with EU and FDA regulations for all types of beverages and foods.



SAME USABILITY AS PLASTICS

With INZEA®, single-use items maintain the same usability as conventional plastics while being fully compostable.

CERTIFIED COMPOSTABILITY

After use, products can be composted together with food residues, ensuring the same usability as plastics but with a sustainable end-of-life.

MECHANICAL STRENGTH

Excellent durability and rigidity, with grades such as F2 HTS 100 offering superior resistance for cutlery.

CATERING TABLEWARE

Catering services, takeaway businesses and events require a wide range of disposable products, including plates, cutlery and tableware. Traditionally, these products have been made from plastics that are difficult to recycle, especially after coming into contact with food.

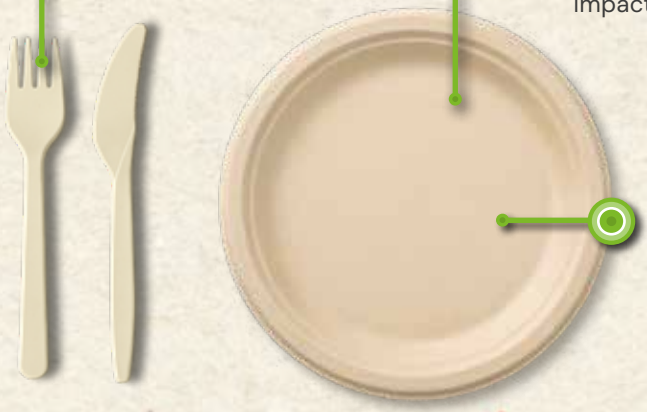
INZEA® biopolymers are a sustainable alternative to replace conventional polyolefins in these applications.

SAFE TO USE

Flexible grades such as F38 available to reduce the risk of fork tines breaking and choking hazards.

FULLY COMPOSTABLE

Collected together with organic waste, reducing the environmental impact of catering disposables.



THERMAL RESISTANCE

Different levels of heat resistance with grades such as F2 HTS range & F29 HT10.

STANDARD PROCESSING COMPATIBILITY

INZEA® grades can be processed by injection moulding, extrusion or thermoforming, offering practicality for converters.

GREASE & LIQUID RESISTANCE

Suitable for different types of foods, maintaining performance without leaks or deformation.

MECHANICAL STRENGTH

Rigid and resistant, ensuring reliable use in a wide range of catering applications, with grades such as F2 HTS

PAPER CUPS WITH COMPOSTABLE COATING

Paper cups are one of the **most common single-use items worldwide**. However, they are often coated with **polyethylene (PE)** to provide **liquid resistance**, which makes them **non-recyclable together with paper**. This plastic–paper combination results in billions of cups ending up in landfills or incineration every year, as they cannot be properly recycled.

INZEA® biopolymers provide a sustainable coating for cardboard cups, combining **protection**, **safety** and **compostability**.

BARRIER TO LIQUIDS & GREASE

Provide excellent impermeability, ensuring durability and preventing leaks.

SUITABLE FOR HOT & COLD DRINKS

Perform reliably with both hot beverages and cold refreshments.

COMPOSTABLE WITH FOOD WASTE

Certified for compostability together with food waste in industrial facilities.

RECYCLABLE WITH ORGANIC WASTE

Compatible with organic waste recovery streams, reducing landfill disposal.

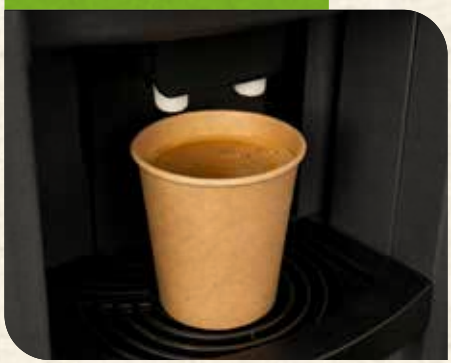
EXTRUSION COATING

Compatible with INZEA grade F16C, developed specifically for this application.

APPLICATIONS:

TAKEAWAY COFFEE CUPS

VENDING MACHINE CUPS



EVENT AND FESTIVAL CUPS

COFFEE CAPSULES

Coffee capsules have revolutionized the way consumers enjoy beverages. Yet, when produced from **aluminium or polypropylene**, they create **waste that is difficult to manage**, frequently **ending up in landfills** or **contaminating organic waste** streams.

With INZEA®, capsules offer a convenient and **fully compostable solution** that **preserves** coffee (or tea) **flavour** while **protecting the environment**.

Millions of aluminium and plastic capsules end up in landfills every year, creating a growing environmental challenge.

OPTIMUM EXTRACTION

Allow perfect extraction in the machine, ensuring beverage quality.

COMPOSTABLE

Capsules designed to biodegrade under industrial composting conditions, reducing waste.

CLEAN & EFFICIENT

Avoid cleaning processes, saving both water and energy.

AROMA & FRESHNESS PRESERVATION

Maintain the aroma, flavour and freshness of coffee or tea when combined with an appropriate barrier material, such as Enoxite® Barrier.

THERMAL RESISTANCE

INZEA® F2 HTS 451 withstands extraction temperatures without deforming.

PROCESSING VERSATILITY

- Grades available for injection moulding, co-injection and thermoforming
- Different levels of rigidity to meet customer requirements
- Can be combined with ENOXITE® oxygen-barrier materials for extended shelf life

CERTIFICATIONS

TÜV Austria OK compost INDUSTRIAL

Guarantees that a material is **compostable in industrial composting facilities** under controlled conditions. It is based on the European standard **EN 13432**, recognised for industrial compostability.

- **≥ 90 % biodegradation** within **6 months at 58±2°C with a 50-60% RH.**
- **Disintegration:** less than 10% of fragments >2 mm after 12 weeks.
- **No negative impact** on final compost quality (eco-toxicity, plant growth).
- **Heavy metal and chemical safety limits** must be respected.

FOOD CONTACT

All INZEA® grades comply with **EU Regulation 10/2011** for **Food Contact**, considering restrictions on food type and use. NUREL is also **FSSC 22000** certified, ensuring good manufacturing practices and food safety.

BIOBASED CONTENT

The biobased content of INZEA® biopolymers is measured by **BETA** under **ASTM D6866**, using radiocarbon analysis to distinguish renewable from fossil carbon, providing reliable third-party data for sustainability claims.

AVAILABLE GRADES:

	RIGIDITY	TEMPERATURE RESISTANCE	FOOD CONTACT	COMPOSTABILITY	APPLICATIONS
INZEA F18CH	•	•	OK	HOME, INDUSTRIAL	Straws
INZEA F38	•	•	OK	INDUSTRIAL	Flexible straws, cutlery
INZEA F2 HTS 451	•	••	OK	INDUSTRIAL	Straws with thermal resistance, coffee capsules, cutlery, cups
INZEA F29 HT10	••	•• ••• With annealing	OK	INDUSTRIAL	Stirrers & Ice cream spoons, plates, cotton bud sticks
INZEA F2 HTS 100	•••	•	OK	INDUSTRIAL	Cutlery
INZEA F16C	–	•	OK	INDUSTRIAL	Extrusion coating

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