

BIODEGRADABLE
SOIL CERTIFIED

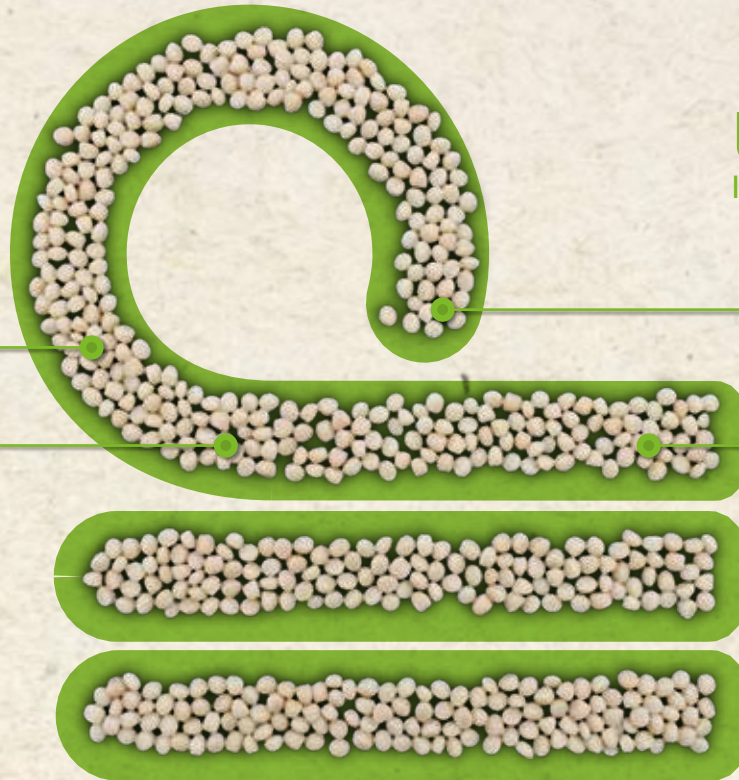
COMPOSTABLE
INDUSTRIAL, HOME

BIOCONTENT
UP TO 100%

**EXTRUSION &
INJECTION**

INZEA[®] BIOPOLYMERS

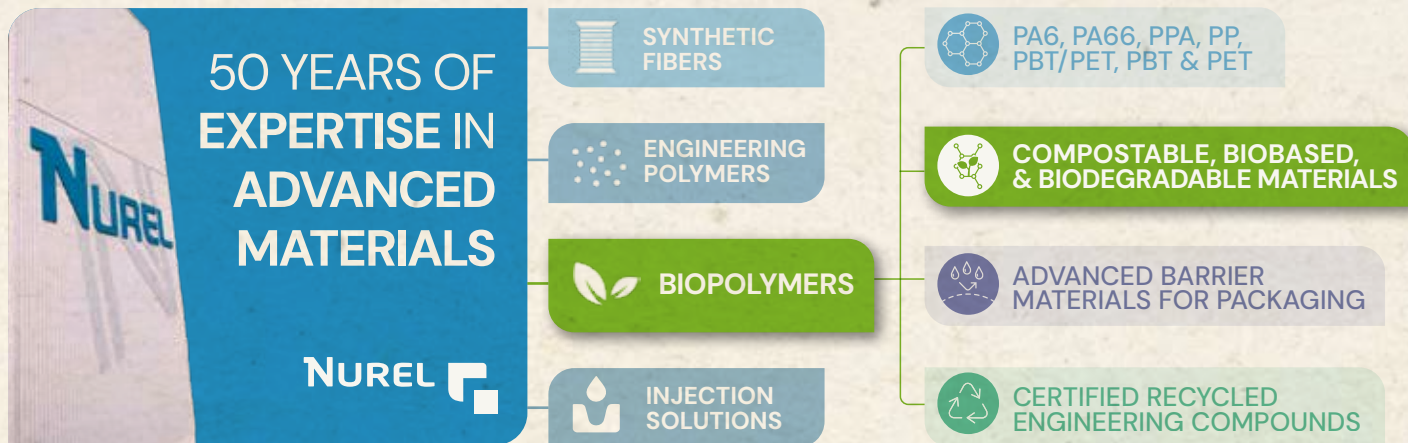
PRODUCT PORTFOLIO





**INZEA® BIOPOLYMERS ARE
COMPOSTABLE,
BIODEGRADABLE, BIOBASED
& SUITABLE FOR FOOD CONTACT**

INTRODUCING NUREL BIOPOLYMERS



NUREL'S SUSTAINABILITY MILESTONES

AT NUREL, WE OPERATE WITH **100% RENEWABLE ENERGY**, 30% OF WHICH COMES FROM **SELF-PRODUCTION**

SGS has recently certified that **100%** of the energy used in our **production center** comes from **renewable resources**, saving **10.991.760 kg of CO₂** to the atmosphere.



28,310
SOLAR PANELS
Over an area of
93,000 m²



16,560
MWH
Produced
per year



11.85
MWP
Total installed
capacity



10
MWH
Energy
storage



11,000
TONNES
Of CO₂ saved



TOTAL INDEPENDENCE
From conventional
electricity sources

INZEA | THE SUSTAINABLE CHOICE

BIODEGRADABLE, COMPOSTABLE, BIOBASED & SUITABLE FOR FOOD CONTACT

With an eye on sustainability and in anticipation of market trends and future environmental regulations, NUREL is committed to a new range of renewable and compostable bio-based biopolymers: **INZEA®**, our **response to our customers' demand for more sustainable plastic materials**.

INZEA range can be **processed by injection or extrusion using conventional equipment**.

Thanks to **optimal mechanical properties and processing parameters similar to conventional polymers**, INZEA is the sustainable solution to **replace conventional petroleum-based plastics** such as polyolefins or styrenics.

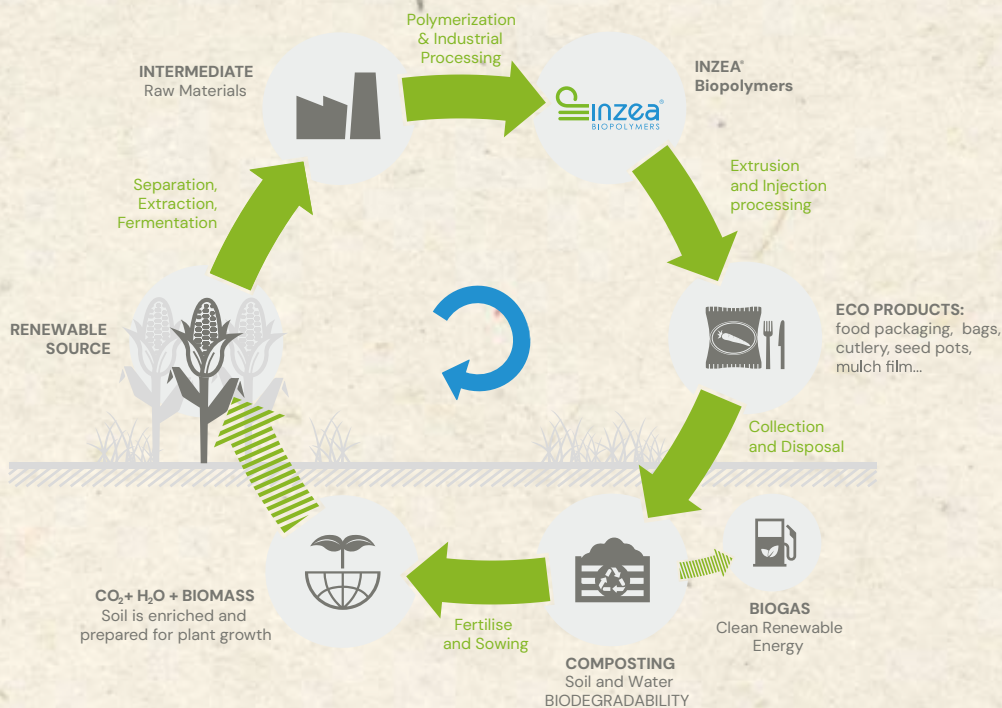
INZEA biopolymers are **compatible with standard fillers, additives and biopolymer-based master batches**.

BACK TO NATURE

INZEA is **obtained from renewable sources**. Thanks to its technology, raw materials and intermediate products are converted **eco-designed products** using bio-based and compostable biopolymers from the INZEA range.

The INZEA product range is **designed to reintegrate into nature** through waste management, such as **industrial composting, home composting or through biodegradation** in soil, water or anaerobic digestion.

In biodegradation, the action of microorganisms **turns the materials into CO₂, H₂O and biomass**, revitalizing the soil and preparing it for future natural symbiosis. **New plants will grow and their life cycle will restart**.



INZEA® is **biodegradable and compostable** according to EN13432.



INZEA® is **bio-based** with **high renewable content**.



The INZEA® range is **suitable for food contact**.

ONE RANGE, MANY SOLUTIONS

INZEA includes both **flexible** and **rigid grades**, available in various formulations tailored to specific processing methods and performance needs. The range supports traditional plastic processing technologies such as **blown film, cast film, injection and blow molding, filament, and thermoforming**.



UP TO 60%
BIOBASED CONTENT



THERMAL
RESISTANCE



BARRIER
SOLUTIONS



COMPOSTABILITY:
HOME & INDUSTRIAL



BIODEGRADATION
IN SOIL



TRANSPARENCY



SEALING
PROPERTIES



FOOD
CONTACT



WIDE PORTFOLIO
RIGID & FLEXIBLE

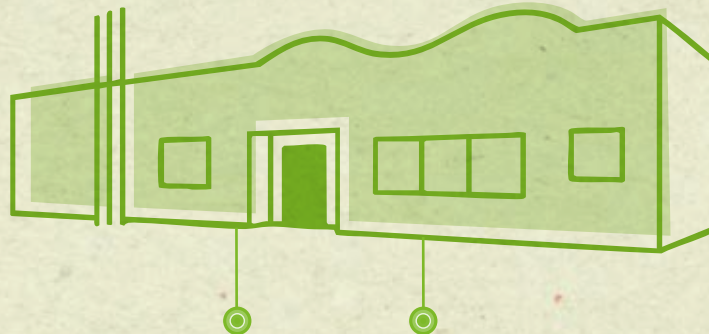
TAILOR-MADE SOLUTIONS

The requirements of INZEA's various applications are as diverse as the industries from which they originate. INZEA offers **customised solutions** for **each of your applications**. Every application is unique. At NUREL we work together with our customers to **adapt the different grades** of our existing products and to **develop tailor-made solutions**.

Thanks to **several years of experience** and **continuous investment in R&D**, at NUREL Biopolymers we are able to adapt and design biopolymers to **suit** all kinds of **production conditions**, product **requirements** and **biodegradability legislations**.

OUR R&D CENTER FOR NEW ADVANCED MATERIALS

At NUREL, we operate a **state-of-the-art Innovation Center** fully equipped for the development of **advanced packaging materials**. This cutting-edge facility enables us to accelerate innovation and deliver **high-performance, high-quality solutions** tailored to the needs of the packaging industry.



EQUIPMENT

PILOT **POLYMERIZATION PLANT**
2 COMPOUNDING EXTRUDERS PILOT SCALE
2 MONOLAYER BLOWN EXTRUDER
CAST & THERMOFORMING PILOT LINE
BLOWN 7 LAYERS COEXTRUDER
INJECTION LINE

MATERIAL CHARACTERIZATION

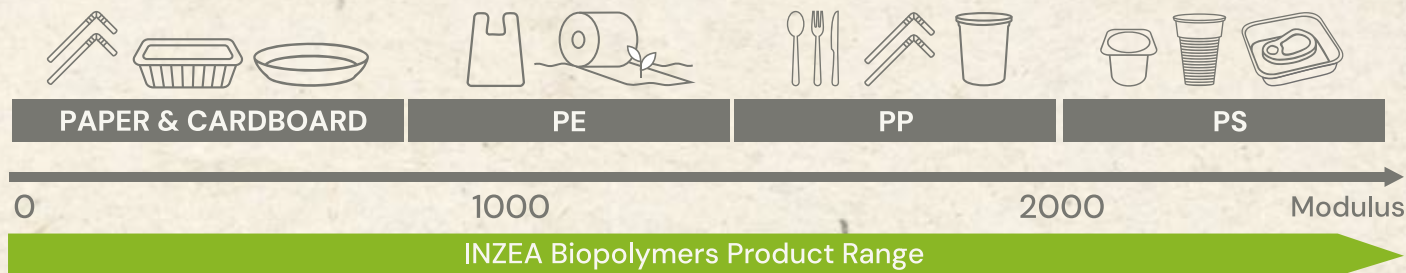
MECHANICAL: STRESS AT BREAK, TEAR & PUNCTURE RESISTANCE, ETC
OPTICAL: HAZE & COLOR
PERMEABILITY: WVTR & OTR
THERMAL: DSC, AUTOCLAVE
CHEMICAL: HPLC, FTIR

SUSTAINABLE MATERIAL REPLACEMENT

REPLACING CONVENTIONAL PLASTICS WITH A VERSATILE BIOPOLYMER RANGE

INZEA offers a wide portfolio of biopolymers specifically developed to **replace conventional plastics** in a broad range of applications. From single-use items to complex packaging solutions, INZEA provides a sustainable alternative with the added benefit of **biodegradability** or **industrial compostability**.

Designed to match the performance of traditional polymers, INZEA materials are suitable for products where **recycling is challenging** or where **environmental impact must be minimized**. Whether it's food-stained packaging or agricultural films, INZEA allows for **effective end-of-life management**, including composting.



VERSATILITY FOR EVERY APPLICATION

REPLACING CONVENTIONAL PLASTICS WITH A VERSATILE BIOPOLYMER RANGE

FLEXIBLE GRADES

Transparent & flexible packaging
Paper lamination and coatings
Mulch films and shrink films
Thermoformed single-use items



RIGID GRADES

Renewable content from 40% to 85%
Hospitality disposables (cups, plates, cutlery, trays). Coffee capsules and food containers. Agricultural items like clips or plant pots.



HIGH TEMPERATURE

INZEA high temperature grades withstand up to 156°C, making them suitable for microwave, dishwasher, and hot food applications.



MARKETS & APPLICATIONS



FRUIT LABELS



FRUIT LABELS



RIGID CAPSULES



TEA BAGS



COFFEE & TEA



MARKETS & APPLICATIONS



COFFEE PADS



CLIPS & FASTENERS



AGRICULTURE



TWIDES



MULCH FILM

PACKAGING

**PAPER
SUBSTITUTION**



LAMINATION



PAPER-LIKE



COATING



MESHES



SHRINK



BARRIER



3° GENERATION

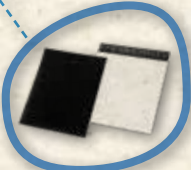
BAGS



NON-LEAK



RETAIL &
BOUTIQUE



MAILING &
COURRIER



FRUIT &
VEGETABLES

TESTS & CERTIFICATIONS

TÜV AUSTRIA OK biobased



According to the American Society for Testing and Materials (ASTM), a biobased material is an organic material in which carbon is derived from a renewable resource via biological processes.

ASTM has set a standard method to calculate the level of biobased carbon included in a resin. **Inzea** product range is partially biobased and complies with USDA Certified Biobased Product Certification based on **ASTM D6866** Standard.

TÜV AUSTRIA OK compost HOME



To guarantee complete biodegradability in a garden compost heap. It refers to products that compost at lower temperatures.

The product has to comply with the following requirements:

- 90% of biodegradation in maximum 12 months at 20–30°C.
- Material with a size greater than 2mm must be <10% after 6 months.
- Study and tests of eco-toxicological effects in higher plants.

TÜV AUSTRIA OK compost INDUSTRIAL



This label guarantees compliance with **EN 13432** and **ASTM D6400-12**, international standards for compostability in industrial composting facilities.

The product has to comply with the following requirements:

- 90% of biodegradation in maximum 6 months at 50±2°C with a 50–55% RH.
- Material with a size greater than 2mm must be <10% after 3 months.
- Chemical analysis of final compost and tests of eco-toxicological effects.

Mulch Film | OK biodegradable SOIL



EN 17033 is the first European standard regarding the characteristics that biodegradable mulch films must have to comply with the requirements of soil biodegradability, ecotoxicity in plants and earthworms.

SimaPro

Life Cycle Assessments

NUREL currently undertakes life cycle analysis of all our products under SimaPro software, according to the most recognized international standards.



**SUSTAINABILITY STARTS
WITH THE RIGHT
MATERIAL CHOICE**

