



Passion for packaging



Manual

lipBio

Compostable & Natural
tableware and food containers

TO GET THINGS STRAIGHT...

compostable or biodegradable ?

These two terms, often confused for synonyms, in fact have a substantial difference that must be known in order to avoid errors when making **separate waste collection**.

The difference lies in time. **A biodegradable element is in fact not automatically compostable.**

To clarify, let's start from the definition: **biodegradable** is defined as any material that can be broken down by bacteria, sunlight and other natural physical agents into simple chemical compounds such as water, carbon dioxide and methane. A process that involves a multitude of materials, and that can be of long degradation, depending on the material. However, the European norm EN 13432:2002 establishes that to be defined as biodegradable, a product must decompose to 90% within **6 months**.

Instead, it is defined **compostable** (transformable into compost, a natural fertilizer) that material which is not only biodegradable but also disintegrating and whose decomposition process takes place in **less than 3 months**.

biobased %



BIOBASED= made wholly or to a significant part from biomass, renewable (non-fossil) resource. Just because a plastic product is biobased does not necessarily mean the product is biodegradable or compostable

TO GET THINGS STRAIGHT...

EN 13432

The European norm **EN 13432** is a harmonized standard of the European Standardization Committee relating to characteristics that a material must possess in order to be able to define itself biodegradable or compostable. The term "compostable" refers to rules related to the non-toxicity of the decomposed material if dispersed in nature.

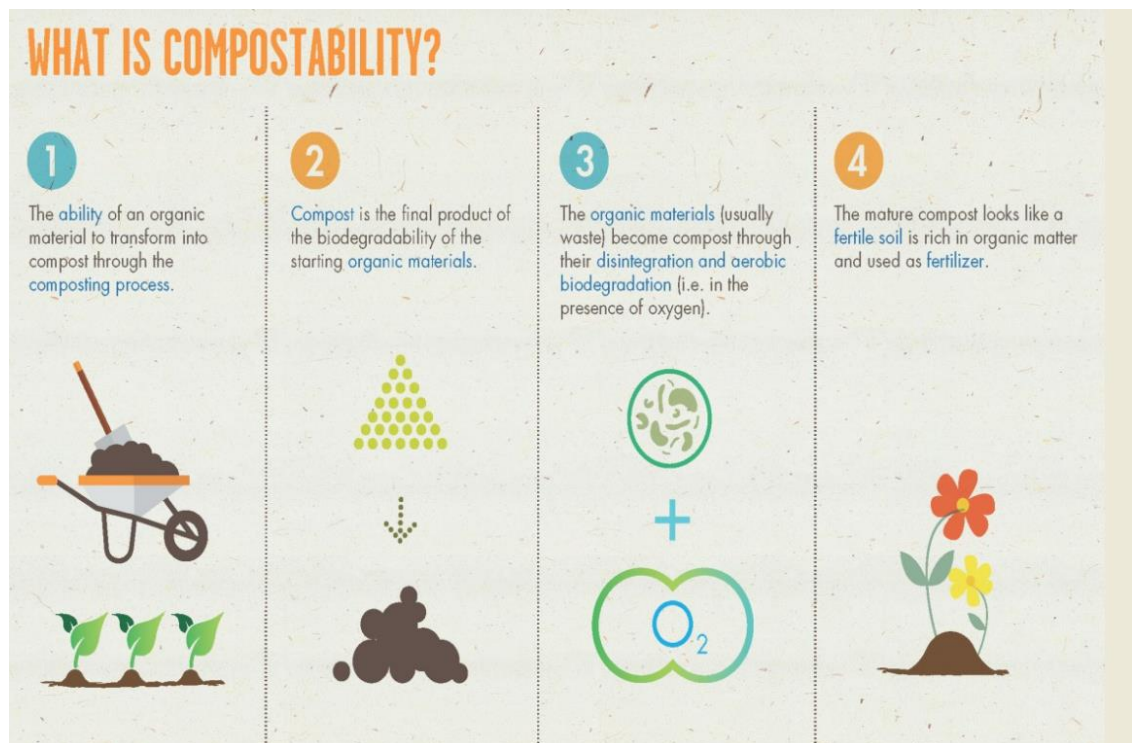
According to EN 13432, a **material to be defined as "compostable", must have the following characteristics:**

- degrade at least 90% in 6 months if subjected to an environment rich in carbon dioxide
- if in contact with organic materials for a period of 3 months, at least 90% of the mass of the material must be made up of fragments smaller than 2 mm
- the material must not have negative effects on the composting process
- low concentration of heavy metals added to the material
- pH values within the established limits
- saline content within the established limits
- concentration of volatile solids within the established limits
- concentration of nitrogen, phosphorus, magnesium and potassium within the established limits



TO SPECIFY...

COMPOSTABILITY'



Source of chart WWW.MATERBI.COM

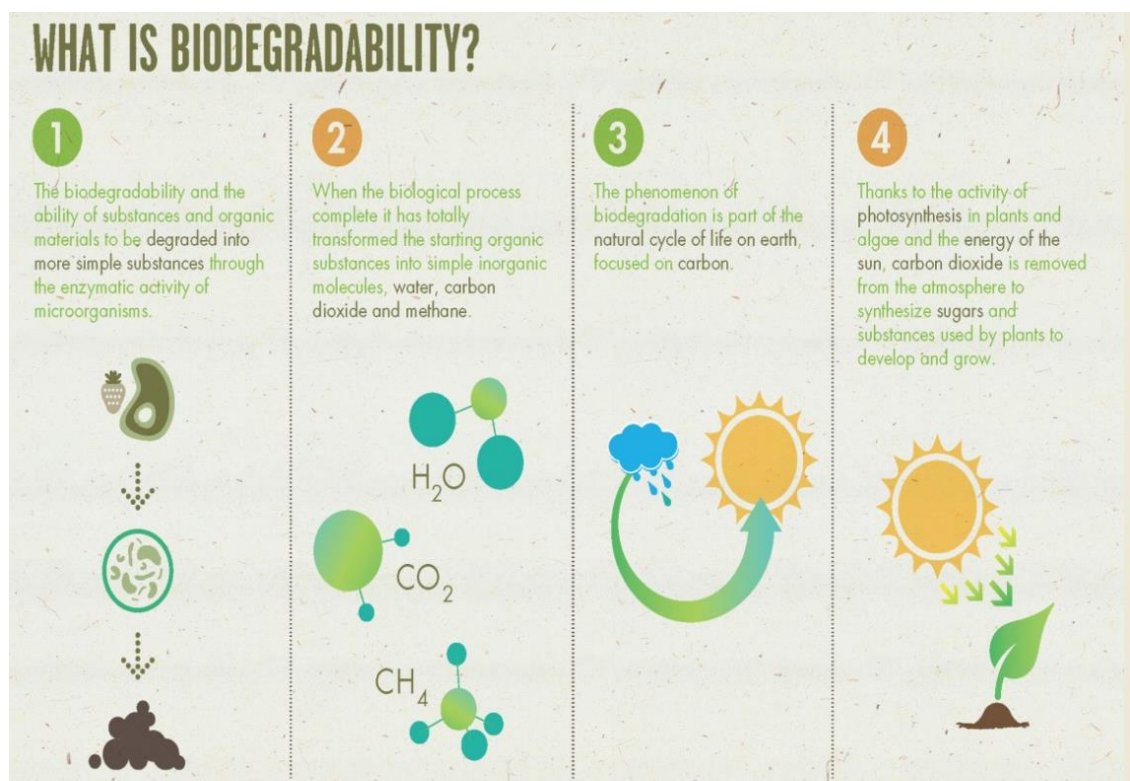
COMPOSTABLE



DECLARED **COMPOSTABLE PRODUCTS** SHOULD REPORT ON THE PACKAGE THE LOGO OF THE COMPOSTABILITY CERTIFICATION AND ITS LICENSE NUMBER.

TO SPECIFY...

BIODEGRADABILITY



Source of chart WWW.MATERBI.COM

EN 13432



The **European Norm EN 13432**, harmonized by the European Committee, determines the characteristics that a material must possess in order to be defined biodegradable and/or compostable. The term "compostable" refers to rules related to the non-toxicity of the decomposed material if dispersed in nature.

TO SPECIFY...

BIODEGRADABILITY

WHAT IS BIODEGRADABILITY?

5

Through the food chain, matter and energy pass from the plants to herbivores and from these to carnivores. On the death of plants and animals, microorganisms feed on the organic material with processes requiring biodegradation releasing water and carbon dioxide into the atmosphere, closing the loop.



6

By mimicking these natural processes, the organic waste from human activities can be removed by biodegradation; it is possible to identify the ideal environment in which the phenomenon may develop better, in a length of the process time that is both industrialized and compatible with the rate of production of organic waste.



7

In nature, all organic waste has its biodegradation time: straw and wood will take more time than starch and cellulose. In cold and dry environments, the biodegradation processes will be slower than in hot and humid conditions.



8

The rate of biodegradation is influenced by the chemical nature of the substance or material and by the environment. The environments of industrial composting and anaerobic digestion provide for high rates of biodegradation.

Source of chart WWW.MATERBI.COM

EN 13432



The **European Norm EN 13432**, harmonized by the European Committee, determines the characteristics that a material must possess in order to be defined biodegradable and/or compostable. The term "compostable" refers to rules related to the non-toxicity of the decomposed material if dispersed in nature.

TO SPECIFY...

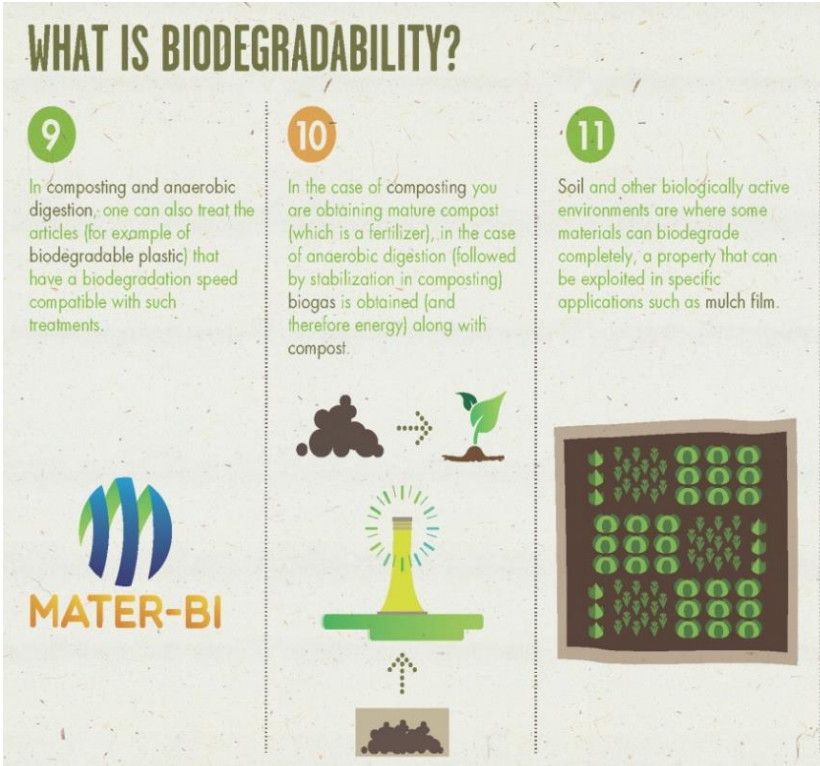
BIODEGRADABILITY

WHAT IS BIODEGRADABILITY?

9 In composting and anaerobic digestion, one can also treat the articles (for example of biodegradable plastic) that have a biodegradation speed compatible with such treatments.

10 In the case of composting you are obtaining mature compost (which is a fertilizer), in the case of anaerobic digestion (followed by stabilization in composting) biogas is obtained (and therefore energy) along with compost.

11 Soil and other biologically active environments are where some materials can biodegrade completely, a property that can be exploited in specific applications such as mulch film.



The infographic features three numbered points (9, 10, 11) explaining biodegradability. Point 9 is accompanied by the logo for MATER-BI, which consists of three stylized vertical bars in blue and green above the text 'MATER-BI'. Point 10 includes a diagram showing a pile of dark organic matter on the left, a dashed arrow pointing to a small green plant growing from a mound of soil on the right. Below this, a yellow flame-like shape rises from a green base, with a dashed arrow pointing up to a pile of dark organic matter. Point 11 is accompanied by an illustration of a square mulch film with a grid of circular holes, each containing a small green plant seedling.

Source of chart WWW.MATERBI.COM

COMPOSTABLE MATERIALS...

BIOPOLYMERS

PLA

Polymers are large organic molecules made up of units that recurs along the carbon chain: they can be natural (BIOPOLYMERS) or synthetic (SYNTHETIC POLYMERS).

PLA (Polylactic Acid) is a biopolymer that derives from 100%renewable resources of vegetable origin (from corn or cassava starch, sugar cane or beet) that are used to obtain sugar molecules.

Starch (glucose) is extracted from plants and thanks to the action of enzymes and through hydrolysis glucose is converted into dextrose. Microorganisms activate dextrose fermentation to obtain lactic acid. A patented process transforms lactic acid into lactide monomer.

The polymerization process binds these monomers forming a polylactide polymer chain. The final form is PLA granules



 ingeo™

The PLA INGEO® that ILIP uses for the realization of its compostable products is supplied by

 NatureWorks

COMPOSTABLE MATERIALS...

BIOPLASTICS

MATER-BI®

MATER-BI is an innovative material created by NOVAMONT and is part of a family of completely biodegradable and compostable bioplastics used for the realization of solutions and products for everyday life with reduced environmental impact. Mater-Bi consists of a blend of different components, some of which are from renewable resources.

MATER-BI contains:

- CORNSTARCH. Novamont declares that it is not genetically modified, is cultivated in Europe with traditional agricultural practices, and that no deforested land or virgin soils are used for its production.
- VEGETABLE OILS. Novamont declares that the vegetable oils used to produce the main raw materials of third-generation MATER-BI derives from non-transgenic crops other than palm and soy, which require little irrigation.
- MINERAL FILLER



MATER-BI®



Mater-bi is not a polymer but a Compound whose percentage of biobased biopolymers is around 50%. ILIP BIO tableware made of Mater-Bi has a high temperature resistance and can also be used for hot drinks and foodstuff up to a temperature of 90°C (heat-sealable plates).

I MATERIALI COMPOSTABILI...

BIOPLASTICS

GAIA BIODOLOMER®

Biodolomer® is a high-quality mineral filled biomaterial compostable and biodegradable, containing renewable resources.

Bio
dolomer®

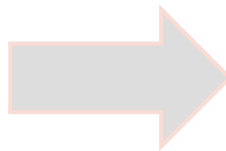


GAIA
BioMaterials - for a humane world

*Biodolomer® is certified compostable according to the EN13432 standard

Renewable materials in Biodolomer®:

- Calcium carbonate
- Sugar cane
- Rape seeds



Why calcium carbonate?

Calcium carbonate contributes to the earth's natural fertility, that is why GAIA adds calcium carbonate in BIODOLOMER®.

Calcium carbonate contains traces of minerals like silica which also improves growth. Silica gives nutrition, mechanical strength, and resistance against fungal diseases.

In 2016, Gaia BioMaterials, in a joint partnership, received EU funds from the LIFE programme for a 30 MSEK project in order to show how fossil-based and energy intensive plastics and packaging materials can be replaced by Gaia BioMaterials renewable and biodegradable biomaterial Biodolomer®



GAIA - BIODOLOMER



ILIP BIO cutlery made from BIODOLOMER® have a high temperature resistance and can also be used for hot foodstuff up to a temperature of 70°.

BIODEGRADABLE MATERIALS...

RAW MATERIAL FROM RENEWABLE SOURCES

CELLULOSE PULP



Cellulose is one of the most important polysaccharides. It consists of a large number of diglucose molecules joined together by a β -glycosidic bond. It is mainly contained in vegetables. The raw material used for the production of ILIP Bio pulp plates is bagasse, the sugar cane fiber.

CARDBOARD

Paper is a material consisting mainly of vegetal raw materials, joined by felting and dried. Paper can be coated, with compostable plastic, or uncoated "free from plastic".



WOOD



The wood used for the production of ILIP Bio wooden cutlery is birch from responsibly managed forests.

PRODUCT FEATURES...

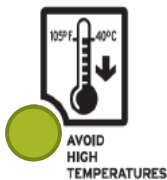
RESISTANCE TO TEMPERATURES

Bio dolomer [®]	PLA	CUPS, PLATES, CUTLERY, BOWLS, DESSERT PLATE, FILMLID, CONTAINERS	for cold food at room temp. or at max. 40 °C
	C-PLA	CUTLERY & COFFEE STIRRER	90°C 5 min.
	GAIA	CUTLERY	80°C 15 min.
	WOOD	CUTLERY	80°C 15 min.
	CARDBOARD	CUPS, PLATES FOOD PACKAGING	90°C 30 min. 100°C < 1h
MATER-BI	HP High Performance	PLATES - 13g & 14g CUP 200ml <i>eco-design light-weight</i>	70°C 2 h
	HP High Performance	CUP 80ml, PLATES 16g, BOWL, CUTLERY PIZZA PLATE	80°C 15 min.
	HP High Performance	HEAT-SEALABLE PLATES 18g & 22g	90°C 1h
	PULP	PLATES, SOUP BOWL, CONTAINERS, TRAYS	100°C 30 min.

PRODUCT FEATURES...

INSTRUCTIONS FOR SHIPMENT AND STORAGE OF PLA PRODUCTS

PLA products are sensitive to high temperatures. During the summer period it is necessary to consider the transports in insulated trucks and their storage in warehouses with suitable temperatures.



- **AVOID HIGH TEMPERATURES**

- Mark out on the boxes "product sensitive to temperature"
- Always specify the routes, shipping times, delivery dates in order to effect transports in the coolest parts of the day
- Choose insulated covers or refrigerated means of transport
- Stock under 105°F/40°C



- **DO NOT LEAVE UNDER THE DIRECT SUNLIGHT**

- Mark out on the boxes "product sensitive to sunlight"
- Plan just-in-time deliveries for packaging of fruit and vegetables



- **STOCK ON LOWER RACKS**

- Always stock in the cooler places of the warehouse
- Open the mean of transport immediately after arrival
- Do not stock near spotlights or heating points
- avoid stocking under metallic roofs or in places lacking in air circle



- **HANDLE WITH CARE**

- Do not leave the product loaded for long periods
- Choose the truck and shipping accessories with adequate insulated roofs
- Load and ship during the coolest part of the day
- Place the material in ad adequate place immediately after its delivery
- Ship and stock in white corrugated cartons

THE CERTIFICATIONS...

BIODEGRADABLE PRODUCTS

CARDBOARD, PULP AND WOOD

Materials of natural origin, such as wood, wood fiber, starch, paper pulp...and relevant packaging made from these materials, are considered "biodegradable" without the need of further tests or certificates.

For example, products made of cellulose pulp (bagasse) or uncoated cardboard are included in this definition. Instead, plates and cups coated with compostable plastic, do NOT fall into the category mentioned above and must be subjected to the European norm EN 13432.



THE CERTIFICATIONS...

COMPOSTABLE PRODUCTS



The Seedling logo is a reliable label for compostability. Along with the certification number printed on the product, the logo provides transparent information on the disposal of the packaging, thus gives assistance in the purchase of the product. The certification process is offered by the Belgian certifier TÜV Austria Belgium and by the German certifier DIN CERTCO.



The brand mainly known in Italy meets the needs of the members of CIC (Italian Composting Consortium) to clearly identify compostable products. Along with the license number the mark allows you to identify compostable materials and products.

INDUSTRIAL COMPOSTABLE



The certifiers issue the **INDUSTRIAL COMPOSTABLE** certification for products that meet the requirements of the **European Standard EN 13432 of 2002** in industrial composting processes (60°C and 90% Relative Humidity). To obtain the certification, the product must meet stringent requirements set by the standard and must be subjected to accurate laboratory analysis.

THE ILIP LICENCES

COMPOSTABLE PRODUCTS OF OWN PRODUCTION

**CUPS, PLATES &
CONTAINERS
IN PLA**



ILIP S.R.L.
007-P1096

**Cup 80cc
Mater-Bi®**



ILIP S.R.L.
137-P1096

PLATES IN M-BI



ILIP S.R.L.
140-P1096

CUPS IN PLA



compostabile
7P0118

**CONTAINERS IN
PLA**



compostabile
7P0103

**CUPS & PLATES
PLA & M-BI®**



compostabile
7P0646

PRODUCT FEATURES...

COMPLIANCE WITH FOOD CONTACT REGULATIONS OF PLA, MATER-BI® and BIODOLOMER®

**COMPLIANCE WITH
FOOD CONTACT**
GLOBAL OR SPECIFIC
MIGRATION ANALYSIS



INTENDED USE
Internal tests simulate
the intended use of
finished product that
must maintain its
mechanical features and
original geometry

ILIP BIO PRODUCTS IN PLA:
based on their intended use, temperature
and conditions of use of products in PLA are
max. 40°C or room temperature for
prolonged periods of time.

ILIP BIO PRODUCTS Biodolomer:
based on their intended use, temperature
and conditions of use of the products are
80°C for 15 minutes.

**ILIP BIO HIGH PERFORMANCE
PRODUCTS (Mater-bi):**
based on their intended use, temperature
and conditions of use of HP products are
70°C for 2 hours (lightweight & ecodesing) -
max. 80°C for 15 min. and max. 90°C for a
period less than 1h.

ILIP Bio



The use of **compostable and renewable** materials
makes IlipBio the most advanced solution in terms of
quality and **environmental sustainability** with the
guarantee and the security of compliance to the norms of
compostability and food contact.

PRODUCT FEATURES...

COMPLIANCE WITH FOOD CONTACT REGULATIONS OF PULP, CARDBOARD & WOOD

COMPLIANCE WITH FOOD CONTACT

GLOBAL OR SPECIFIC
MIGRATION ANALYSIS



INTENDED USE

Internal tests simulate the intended use of finished product that must maintain its mechanical features and original geometry

ILIP BIO PULP PRODUCTS:

based on their intended use, temperature and conditions of use of products made of pulp are max. 100°C for 30 minutes.

ILIP BIO PRODUCTS

MADE OF CARDBOARD:

based on their intended use, temperature and conditions of use of products made of paperboard and wood are max. 90°C for max. 30 min.



ILIP BIO PRODUCTS MADE OF WOOD:

based on their intended use, temperature and conditions of use of products made of paperboard and wood are max. 80°C for max. 15 min.

CARDBOARD



Cardboard is a material consisting mainly of vegetal raw materials, joined by felting and dried. Cardboard can be coated, with compostable plastic, or uncoated "free from plastic".

DISPOSAL OF THE PRODUCT AFTER ITS USE...

END OF LIFE: DIFFERENCES BETWEEN PLASTICS AND BIOPLASTICS



ILIP & BIOPLASTICS



Since 2004 Ilip has been converting **bioplastics** to make packaging and containers to serve and pack fresh food products. All these items are **certified** and comply with **the European standard EN13432**. The life of these products ends with **organic recycling** (industrial composting) when appropriate and available and the result of this process is **compost**.

PACKAGING & ENVIRONMENTAL LABELING

CLEAR INFORMATION CONFORM TO REQUIREMENTS

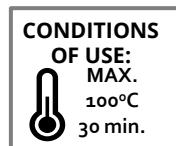
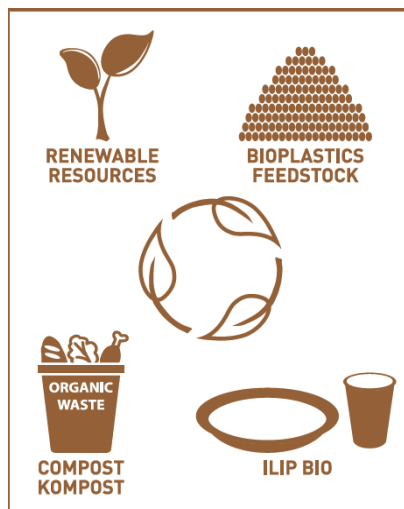
Our goal is to provide correct, clear and compliant information to Italian and European regulations so that the consumer can make his conscious choice in purchasing the product.

DIFFERENZIARE I RIFIUTI / WASTE SORTING	
Che cos'è? / What is it?	Dove smaltire / Where to dispose of?
FILM CONFEZIONE PACKAGING FILM 2 HD-PE	RACCOLTA PLASTICA PLASTIC WASTE
CONTENITORE CONTAINER 21 PAP	RIFIUTO ORGANICO* ORGANIC* WASTE
*Verifica con il tuo Comune o gestore locale le modalità di conferimento e raccolta dei rifiuti. *Check with your municipality or local waste manager how to deliver and collect waste.	



*UNI EN 13432:2002

**PRODUCED
IN ITALY**



What is the mandatory environmental labeling?



The legislative decree n. 116 of 2020 introduced the obligation of environmental labeling for packaging. The standard obliges manufacturers to apply an environmental label on all packaging that is placed on the market, to facilitate collection, reuse, recovery and recycling. But it will also provide information to consumers on the correct destination.

PACKAGING

DESIGN OF THE PACKAGING



labels & film



PACKAGING

DESIGN OF THE PACKAGING
PLATES MADE OF MATER-BI

flat plate

eco-design



deep plate

eco-design



light-weight



Distinctive packaging

HIGH
PERFORMANCE



PACKAGING

DESIGN OF THE PACKAGING

labels & film



CERTIFICATIONS & MEMBERSHIPS



BRCGS CERTIFICATE

<p>Certificate No.: 35186-2008-ABRC IOP-ITA-ACCREDIA</p>	<p>Initial Audit date: 2008-06-18 Audit date: 2023-01-09</p>	<p>Certificate expiry date: 2024-02-25 Next audit, regardless of whether it is announced or unannounced, must occur before this date: 2024-01-14</p>
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This is to certify that the processing activities of

ILIP S.r.l.
 Production site: Via Castellfranco, 52, 40053 Valsamoggia, loc. Bazzano (BO) Italy
 Warehouse: Via Castellfranco, 66/68, 40053 Valsamoggia, loc. Bazzano (BO) Italy

BRCGS site code: 1954055

has been found to conform to the standard:
**GLOBAL STANDARD for PACKAGING MATERIALS
 ISSUE 6: AUGUST 2019**

Audit programme: announced

The certificate is valid for the following scope:
Extrusion and thermoforming of containers, lids, trays, fruit nest trays for food packaging and disposable tableware (plates, glasses) made in PP, PET, PS, RPET/PE, compostable biopolymers. Subcontracted activities: off-set decoration of plastic cups and handles; punnets handle application; packing of plastic cups (one single piece per bag), application of pad and bubble pad in punnets.

Manufacturing Category: **04 - Rigid plastics**
 Including additional modules: **No**
 Exclusion from scope: **Factored goods**
 Achieved grade: **AA**
 Auditor number: 22358

Place and date:
Vimercate (MI), 2023-02-15





ACCREDIA
ASSOCIATION OF ACCREDITED BODIES

ISSUE 01 2014 ISSUE 01 2014
 BSI 01 012 B ISO 9001:2015
 ISO 9001:2015

MEMBER IN FULL AS OF 2013 SUBJECT TO SUCCESSFUL REGISTRATION, LOCAL, NATIONAL, EUROPEAN, AND GLOBAL LEVELS. THE ASSOCIATION OF ACCREDITED BODIES (ACCREDIA) IS A MEMBER OF THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO).

For the issuing office:
DNV - Business Assurance
 Via Energy Park, 14 - 20871 Vimercate (MI) - Italy

Sabrina Bianchini

Sabrina Bianchini
 Management Representative





Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid. Any changes in the product shall immediately be reported to DNV Business Assurance Italy S.r.l. in order to verify whether this Certificate remains valid. This certificate remains the property of ACCREDITED UNIT: DNV Business Assurance Italy S.r.l., Via Energy Park, 14, 20871 Vimercate (MI), Italy. Tel: 039 68 96 905.
 Website: www.dnv.com/assurance
 If you would like to feedback comments on the BRCGS Standard or the audit process directly to BRCGS, please contact toll.brcgs.com.
 Visit brodatree.com to validate certificate authenticity.



ILIP MEMBER / PARTNERSHIPS





Passion for packaging



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