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API Applicazioni Plastiche Industriali Spa

GREEN STAR
EXPECTATIONS AND PERSPECTIVES FOR THE YEARS TO COME

Venezia, 9 -10 Dec 2013



- API was founded in 1956 by Sergio Brunetti
- 110 employees, € 43 mln. of turnover, 40% Export
- In 1977 the company moved to its current location in Mussolente, in northern Italy, (70 Km from Venice)



Main areas of business

- Footwear & Sporting Goods
- Automotive & Engineering
- Packaging & Medical



PRODUCT RANGE

- TPE
- TPU - PU
- MASTER-BATCHES
- **BIOPLASTICS**



PRODUCTS



- TPE



- TPU

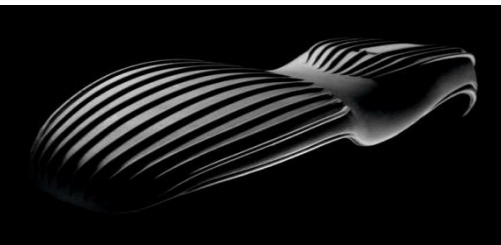


- PU



- MASTERBATCHES

- BIOPLASTICHE



BIOPLASTICS



2006

2013



Sustainability!

BIOPLASTICS ?





WORLD CHANGING

A USER'S GUIDE FOR THE 21ST CENTURY

- Political
- Economic
- Social
- Technological
- Environmental changes

have raised several questions....



**Unwrap and throw
away?**

**Ethics towards
Future generations**



People have started wondering if things today are as environmentally efficient
as they could be





Bioplastics drive the evolution of plastic



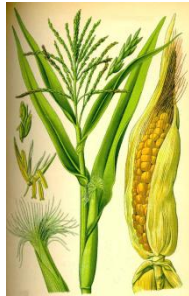
The European Bioplastics Association defines bioplastics as:

- **Biodegradable plastics** that respect all the criteria on the scientifically recognized standards for the biodegradability and compostability of plastic products (EU13432/EN 14995 and US ASTM D6400 standards)
- **Bio-based plastics** (Plastics from renewable raw materials even if not biodegradable)

API has been a member of European Bioplastics since 2009.

The logo for the European Bioplastics Association. It features the word 'european' in a small, orange, sans-serif font, positioned above the word 'bioplastics' in a larger, green, sans-serif font. The 'b' in 'bioplastics' is stylized with a small leaf-like shape.

BIOBASED BIOPLASTICS

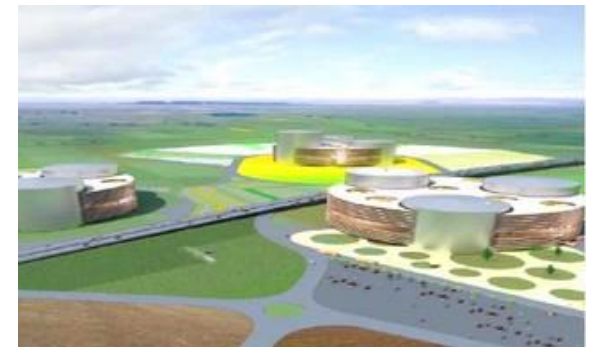
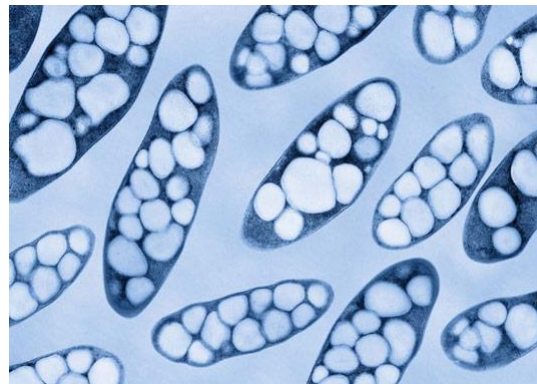


What are biobased plastics?

*With the term bio-based reference is made to the "renewable **origin**" of the raw materials.*

Bb-plastics are polymers for which the carbon is derived from renewable BIOMASS SOURCES e.g. vegetable fats and oils, sugar, starch or from the activity of microorganisms.

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Bio-refinery

Biobased plastics can
help to solve the
problem of
greenhouse gas
emissions



Greenhouse Gases



Costs of climatic change



Global warming

biobased plastics
contribute saving
fossil resources
and reduce pollution



Water and soil pollution



apilon52bio®

GREENTPU
BIOBASED BIOPLASTICS



GREEN PROJECT



- ✓ Completely disassemblable
- ✓ PVC free
- ✓ TPU from renewable origin
- ✓ ECO packaging



Shell: **apilon52bio®**

Cuff: **apilon52bio®**

Frame: Alu 6060 extruded



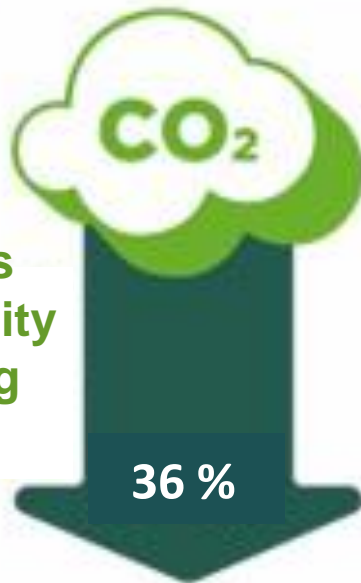
LCA Study

according to the **LIFE CYCLE ASSESSMENT** based on ISO 14040 -14043 : 2006

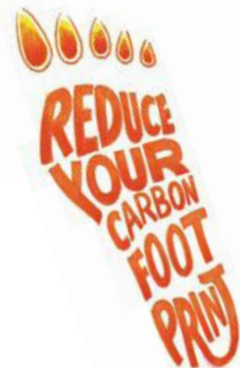
apilon52bio®

REDUCES

Greenhouse gas
emission intensity
(Global Warming
Potential) GWP



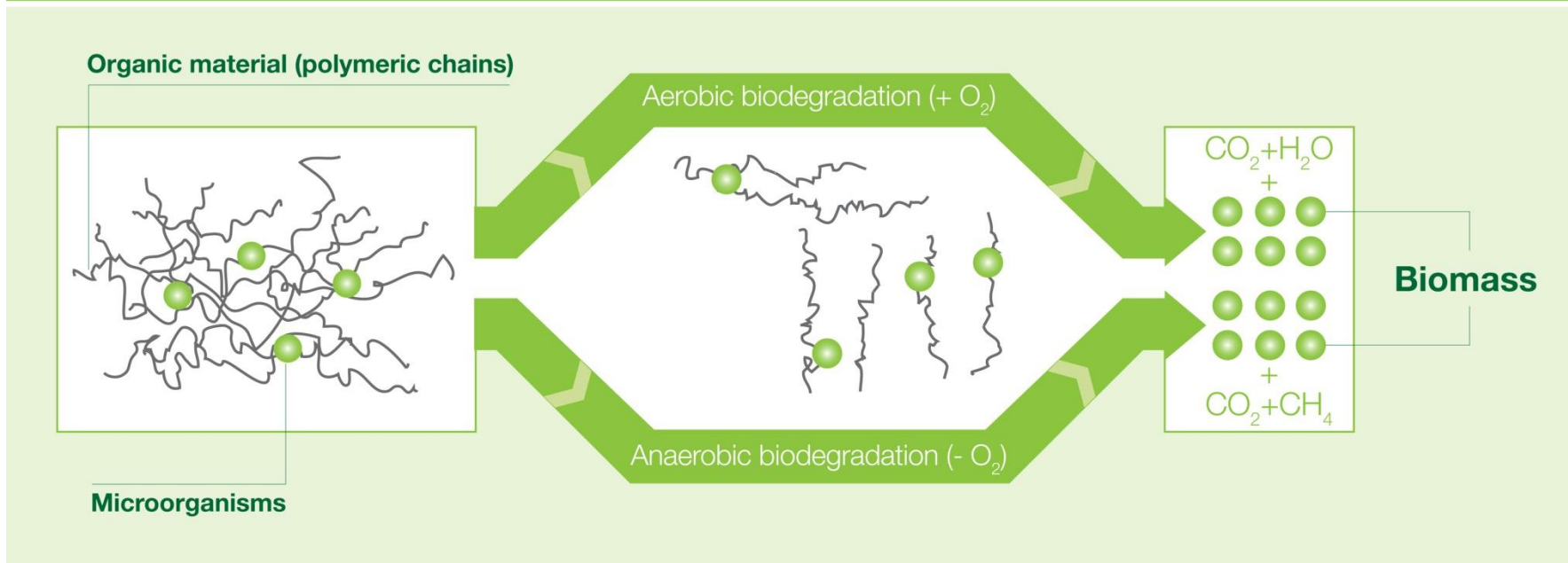
nonrenewable
energy
(Abiotic Depletion
Potential) ADP



The **biodegradability** refers to the **end of life** of the material

Biodegradation occurs as a result of the activity of microorganisms (bacteria, fungi, algae), which disintegrate and assimilate macromolecules of the plastic. These are transformed into carbon dioxide (and / or natural gas), water, minerals and biomass.

AEROBIC AND ANAEROBIC BIODEGRADATION



The speed of the biodegradation process can vary as a function of temperature, humidity and the type of microorganisms.

Biodegradable means that the material meets all the criteria for biodegradation of plastic products (EU 13432/EN 14995 and US ASTM D6400).

2008

apinat[®]
BIO



apinat[®] BIO

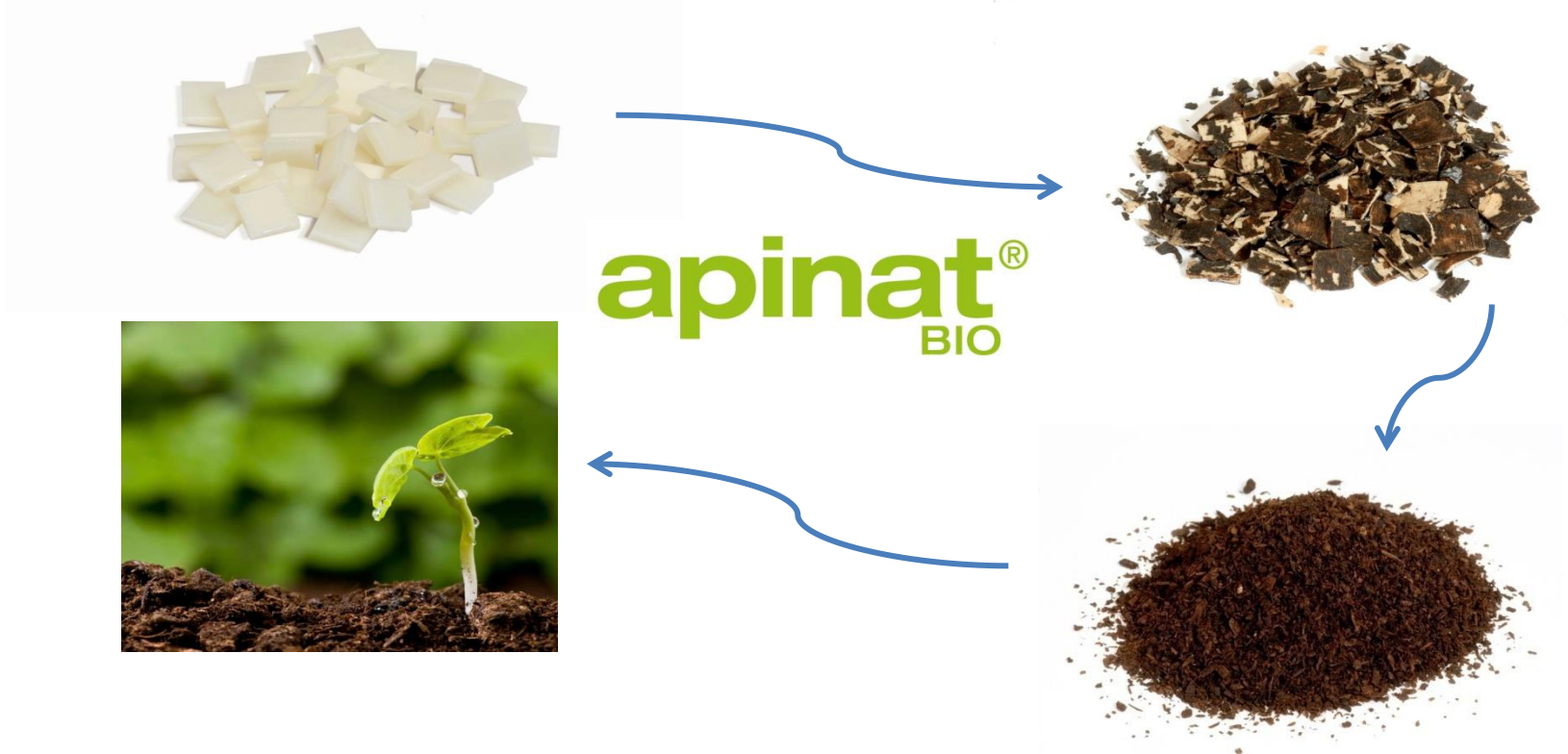
THE WORLD'S LEADING
SOFT BIODEGRADABLE
BIOPLASTIC



BIODEGRADABLE **BIOPLASTICS**

BACK TO NATURE

The effect of the biodegradation of an APINAT fragmented plate under controlled composting conditions, complying to the standard EN 13432:2000, ASTM D6400:2004 e EN 14995:2006



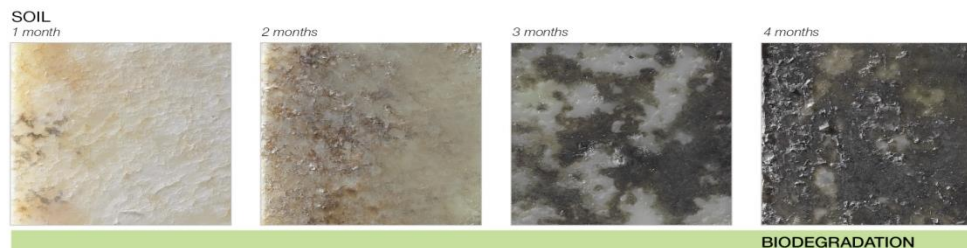
The resulting compost is tested in the lab to verify the characteristics of phytotoxicity

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non degrada in aria e/o acqua



I microrganismi presenti nel suolo
iniziano la degradazione del
materiale



APINAT presenta proprietà fisico-meccaniche molto simili ai migliori termoplastici convenzionali e può essere processato con tutte le tecnologie note per le materie plastiche: stampaggio ad iniezione, estrusione, soffiaggio, calandratura, sovrastampaggio

apinat[®]
BIO

APINAT BIO[®] in PUMA InCycle
"Basket" Sneaker.



apinat®
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•Soles



•Back insert



•Eyelets



PUMA InCycle Basket shoe



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InCycle



Cradle-to-Cradle Basic Certified^{CM}





THE WORLD'S LEADING SOFT BIODEGRADABLE BIOPLASTIC

Biodegradable iPhone Covers

- SOFT GRADES



- HARD GRADES



Winner of the Innovation Design and Engineering Award 2012 in Las Vegas





THE WORLD'S LEADING SOFT BIODEGRADABLE BIOPLASTIC

Flexibility and Softness





THE WORLD'S LEADING SOFT BIODEGRADABLE BIOPLASTIC

Canvas and leather - perfect appearance and texture





THE WORLD'S LEADING SOFT BIODEGRADABLE BIOPLASTIC

Extremely versatile and easily colourable



OAT Shoe - NL wins at the Amsterdam International Fashion Week in 2011





THE WORLD'S LEADING SOFT BIODEGRADABLE BIOPLASTIC

Film, blown or cast extrusion



APPLICATION SECTORS



iphone soft cover



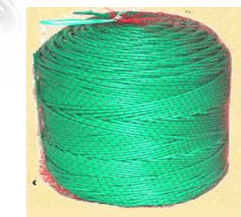
Tie-ups



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BIODEGRADABLE





With Apinat we are members of





STILL USING PLASTIC?

APINAT[®], THE NATURAL CHOICE

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BIOPLASTICS

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