



SIMONA

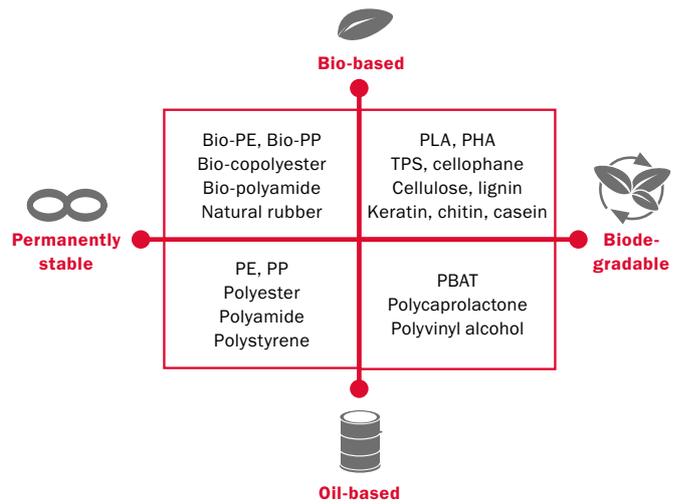
SIMOGREEN

Semi-finished parts made from bioplastics

GLOBAL THERMOPLASTIC SOLUTIONS

SIMOGREEN – From natural product to high-quality plastics

Bioplastics are used primarily in the packaging industry, e.g. for the production of yoghurt pots. However, as an alternative to conventional plastics, finished parts made of biopolymers can also be deployed in more sophisticated areas of industrial application – while meeting the most exacting standards.



Fully committed to cutting-edge research within this field, SIMONA has introduced a new product group for bioplastics, by the name of SIMOGREEN. It encompasses polymers such as PLA (polylactic acid), Bio-PE, Bio-PETG and Bio-Polyamide 6.10.

Bioplastics – what are they?

The term bioplastics is generally used to refer to polymers that are made from renewable raw materials and/or are biodegradable. Within this umbrella term, a distinction is also drawn between plastics that are 100% derived from renewable resources, such as starch, sugar or plant residues, and polymers produced in part from renewable raw materials.

A further distinction is also drawn between plastics that are permanently stable or biodegradable. Biodegradable plastics are those types of materials that, under certain conditions, automatically decompose as part of a process of biodegradation.





Biodegradability

Until recently, the focus has been firmly on the biodegradability of products, but nowadays there is a growing interest in their biogenic origins (bio-based). These are two entirely different approaches, yet they are often confused, with the result that “bioplastics” are often thought of as being essentially biodegradable, in the sense of being “compostable”. However, this is not the case with bio-based polyethylene or partially bio-based polyesters and polyamides. When it comes to biodegradability, these materials behave in exactly the same way as their oil-based alternatives.

Even when materials are classified as “biodegradable”, there are still specific levels or limitations within this classification. According to the latest research, the biodegradability of PLA, for example, is described as “similar to wood”. However, the time needed for a material to decompose and its effective service life are both significantly affected by environmental conditions. Humidity, temperature and oxygen levels are all factors that can have a decisive influence on a material’s rate of decomposition.

Depending on the environmental conditions, the decomposition time for PLA, for example, could be very long. So the various standards tend to differentiate between materials that are “industrially compostable” and those that are “home compostable”. In an industrial composting facility with optimum operating conditions (e.g. temperatures of $> 60\text{ }^{\circ}\text{C}$), a specific material may need only a few weeks to degrade completely, whereas the same process would take many times longer using a domestic compost heap.

Fields of application

At the moment, bioplastics are particularly important for manufacturing products with a relatively short lifecycle or for applications where a smaller carbon footprint offers a significant competitive advantage over a traditional product.

Such applications are found in the following sectors:

- Trade fair and display construction
- Automotive engineering
- Gardening and landscaping
- Medical and orthopaedic technology
- Transport technology
- Food industry



SIMOGREEN PLA filaments for 3D printing offer maximum precision and consistent material quality (example: 3D models made from SIMOGREEN PLA).

SIMOGREEN – Outstanding workability



SIMOGREEN PLA-HT sheets provide the perfect combination of top-quality appearance and ease of milling (example: freely programmable electronic label made from SIMOGREEN PLA-HT).

Processing guidelines

In principle, SIMOGREEN products can be processed and worked using the same methods as those used for standard alternatives made of similar materials.

Polyesters such as SIMOGREEN PETG and SIMOGREEN PLA absorb water from the surrounding air. We therefore recommend pre-drying semi-finished products for thermoforming or deep drawing in order to maintain their excellent deep-drawing properties.

Put your trust in our know-how and technical expertise. The staff at our Technical Service Centre are here to help:

Phone +49 (0) 67 52 14-587
 Fax +49 (0) 67 52 14-302
 tsc@simona.de

Processing methods



Sawing



Cutting



Deep-drawing



Riveting



Turning



Milling



Drilling



Water-jet cutting



Bolting



Die-cutting



Welding



Hot forming



+ A reliable alternative

The chemical resistance and physical properties of bioplastics are comparable to traditional plastics in every respect. For example, the only difference between SIMOGREEN PE and traditional oil-based polyethylene is the origin of the raw materials used, so it can still be used for virtually all existing PE applications. SIMOGREEN PLA has excellent thermoformability, while SIMOGREEN PLA-HT features above-average notched impact strength.

+ Sustainable and environmentally friendly

SIMOGREEN semi-finished products are made in whole or in part from bio-based raw materials, and therefore from renewable resources. They also offer a much reduced carbon footprint because the carbon they contain is not derived from fossil fuels such as oil, but from carbon dioxide (CO₂) photosynthesised from the air.

+ Innovative and future-proof

According to forecasts, fossil fuels such as oil that are used to produce petrochemical polymers will become increasingly scarce and hence more expensive. From an economic perspective it therefore makes sense to switch to bio-based polymers, and this can also help to conserve dwindling natural resources. In this way, the future of plastic as a raw material is secured.

Manufacturing applications

	SIMOGREEN PLA/-HT	SIMOGREEN PE	SIMOGREEN PETG	SIMOGREEN PA 6.10
Extruded sheets	✓	✓	✓	✓
Solid rods	-	-	-	✓
Welding rods	✓	✓	✓	✓
3D printing filaments	✓	-	-	-
Colours	natural, coloured	natural, coloured	transparent	natural

For further information on availability, please contact our sales department: sales@simona.de.

Welcome to Simona – Put your trust in expertise and innovation



SIMONA is acknowledged as one of the leading producers and development partners in the field of thermoplastics. Drawing on our outstanding abilities in process engineering, we specialise in the production of sheets, finished parts, profiles, welding rods, rods, pipes, fittings and valves tailored to the most exacting standards.

Our new Technology Centre brings together our activities in the field of research and development at a single location. This allows us to step up our development efforts with regard to new materials and combinations of material for the purpose of reducing time to market. Our principal focus: meeting tomorrow's requirements today.

SIMONA AG

**Teichweg 16
55606 Kirn
Germany**
Phone +49 (0) 67 52 14-0
Fax +49 (0) 67 52 14-211
mail@simona.de
www.simona.de

PRODUCTION SITES

Plant I

Teichweg 16
55606 Kirn
Germany

Plant II

Sulzbacher Straße 77
55606 Kirn
Germany

Plant III

Gewerbestraße 1-2
77975 Ringsheim
Germany

SIMONA Plast-Technik s.r.o.

U Autodílen č.p. 23
43603 Litvinov-Chudeřín
Czech Republic

SIMONA ENGINEERING PLASTICS (Guangdong) Co. Ltd.

No. 368 Jinou Road
High & New Technology Industrial
Development Zone
Jiangmen, Guangdong
China 529000

SIMONA AMERICA INC.

101 Power Boulevard
Archbald, PA 18403
USA

Boltaron Inc.

A SIMONA Company
1 General Street
Newcomerstown, OH 43832
USA

SALES OFFICES

SIMONA S.A.S. FRANCE

Z.I. 1, rue du Plant Loger
95335 Domont Cedex
France
Phone +33 (0) 1 39 35 49 49
Fax +33 (0) 1 39 91 05 58
mail@simona-fr.com
www.simona-fr.com

SIMONA UK LIMITED

Telford Drive
Brookmead Industrial Park
Stafford ST16 3ST
Great Britain
Phone +44 (0) 1785 22 24 44
Fax +44 (0) 1785 22 20 80
mail@simona-uk.com
www.simona-uk.com

SIMONA AG SWITZERLAND

Industriezone
Bäumlimattstrasse 16
4313 Möhlin
Switzerland
Phone +41 (0) 61 855 90 70
Fax +41 (0) 61 855 90 75
mail@simona-ch.com
www.simona-ch.com

SIMONA S.r.l. SOCIETÀ UNIPERSONALE

Via Volontari del Sangue 54a
20093 Cologno Monzese (MI)
Italy
Phone +39 02 250851
Fax +39 02 2508520
commerciale@simona-it.com
www.simona-it.com

SIMONA IBERICA SEMIELABORADOS S.L.

Doctor Josep Castells, 26-30
19000 Praha 9 – Vysočany
Polígono Industrial Fonollar
08830 Sant Boi de Llobregat
Spain
Phone +34 93 635 41 03
Fax +34 93 630 88 90
mail@simona-es.com
www.simona-es.com

SIMONA Plast-Technik s.r.o.

Paříkova 910/11a
19000 Praha 9 – Vysočany
Czech Republic
Phone +420 236 160 701
Fax +420 476 767 313
mail@simona-cz.com
www.simona-cz.com

SIMONA POLSKA Sp. z o.o.

ul. Wrocławska 36
Wojkowice k / Wrocławia
55-020 Żórawina
Poland
Phone +48 (0) 71 352 80 20
Fax +48 (0) 71 352 81 40
mail@simona-pl.com
www.simona-pl.com

OOO "SIMONA RUS"

Projektiருemy proezd No. 4062,
d. 6, str. 16
BC PORTPLAZA
115432 Moscow
Russian Federation
Phone +7 (499) 683 00 41
Fax +7 (499) 683 00 42
mail@simona-ru.com
www.simona-ru.com

SIMONA FAR EAST LIMITED

Room 501, 5/F
CCT Telecom Building
11 Wo Shing Street
Fo Tan, Hong Kong
China
Phone +852 29 47 01 93
Fax +852 29 47 01 98
sales@simona-hk.com
www.simona-cn.com

SIMONA ENGINEERING PLASTICS TRADING (Shanghai) Co. Ltd.

Room 5, 19/F, Block B
Hongqiao Nanfeng Town
No. 100 Zunyi Road
Changning District
Shanghai
China 200051
Phone +86 21 6267 0881
Fax +86 21 6267 0885
shanghai@simona-cn.com
www.simona-cn.com

SIMONA AMERICA INC.

101 Power Boulevard
Archbald, PA 18403
USA
Phone +1 866 501 2992
Fax +1 800 522 4857
mail@simona-america.com
www.simona-america.com