

Think Sustainable ...



BIO-FED 
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BIO-FED
Branch of AKRO-PLASTIC GmbH

Added Value through Global Plastics Expertise



BioCampus Cologne – one of Germany's largest biotech parks.

Founded in October 2014, BIO-FED produces and markets biodegradable and biobased plastics under the brand name M-VERA®. As a branch of AKRO-PLASTIC GmbH, BIO-FED is a member of the international Feddersen Group, which is headquartered in Hamburg.

The Feddersen Group has its origins in K.D. Feddersen & Co., a trade firm

for chemical products founded in 1949 by businessman and Hamburg native Karl Detlef Feddersen. The divisions in the Group focus on trade in chemicals and engineered products worldwide, representing renowned companies in the chemical, investment and consumer goods industries with their own branch offices in Europe and throughout the world. In addition to export trade,

the alliance today is engaged in the worldwide distribution and production of plastics, the stainless steel trade and machine manufacturing.

The BIO-FED team, consisting of plastics specialists with years of experience, is ready to serve you at the company's headquarters at Bio-Campus Cologne. As experts in developing, compounding and marketing biodegradable and/or biobased plastics, we provide customised technical solutions developed specifically for your application. Our M-VERA® products are produced at AKRO-PLASTIC in Niederzissen (Germany). AKRO-PLASTIC is one of just a few compounders to operate a test lab certified to DIN EN ISO 17025 by the Deutsche Akkreditierungsstelle GmbH (Germany's National Accreditation Body). Additional relevant test methods for biocompounds are available at AF-COLOR, another branch of AKRO-PLASTIC, headquartered in Niederzissen.



Headquarters of AKRO-PLASTIC GmbH in Niederzissen, Germany.

Taking Responsibility

The goal of our research and development work is to incorporate trends and new ideas to best satisfy your needs. At BIO-FED, we combine the latest developments from the markets with decades-long experience to create innovative products. Our partnerships with other divisions in the Feddersen Group and our use of a global distribution network allows us to offer our customers global service, providing them with added value. We operate four production sites on three continents with access to the major sales markets. K.D. Feddersen Holding GmbH

Our Services at a Glance

With over 50 years of experience in plastics, we offer within our corporate alliance professional consulting services, customer-focused service and a sales and distribution operation performing to the highest standards, as well as:

- Expert knowledge in the area of biodegradable and/or biobased plastics
- Access to the entire bioplastics market through an international purchasing organisation
- Flexibility of a customer-focused compounder
- Broad portfolio of biodegradable and/or biobased compounds
- State-of-the-art compounding and laboratory facilities
- Bioplastics training on-site at your facility
- Assistance with product development and material selection
- Application development and technical service
- International sales and engineering team
- Expertise in global order processing and logistics

is the proprietor of all divisions in the Feddersen Group. Their sole shareholder, the non-profit K.D. Feddersen Foundation, operates an assisted-living facility in Hamburg. Our profits go primarily towards supporting the work of the Foundation – true to the motto of our company's founder, Karl Detlef Feddersen: "Acting on behalf of people – acting through global trade".



The Feddersen Group headquarters in Hamburg.

BIO-FED has a comprehensive quality management system based on a legally robust organisation. Our AKRO-PLASTIC production site is certified to the following standards:

- AKRO Excellence (Integrated Management System)
- DIN EN ISO 9001:2008 (Quality Management System)
- ISO/TS 16949:2009 (Quality Management in the Automotive Industry)
- DIN EN ISO 14001:2004 + Cor 1:2009 (Environmental Management System)
- DIN EN ISO/IEC 17025:2005 (Accredited Laboratory)
- ISO 50001:2011 (Energy Management System)
- BS OSHAS 18001:2007 (Workers' Protection Management System)



Sustainable Products for a Clean Environment

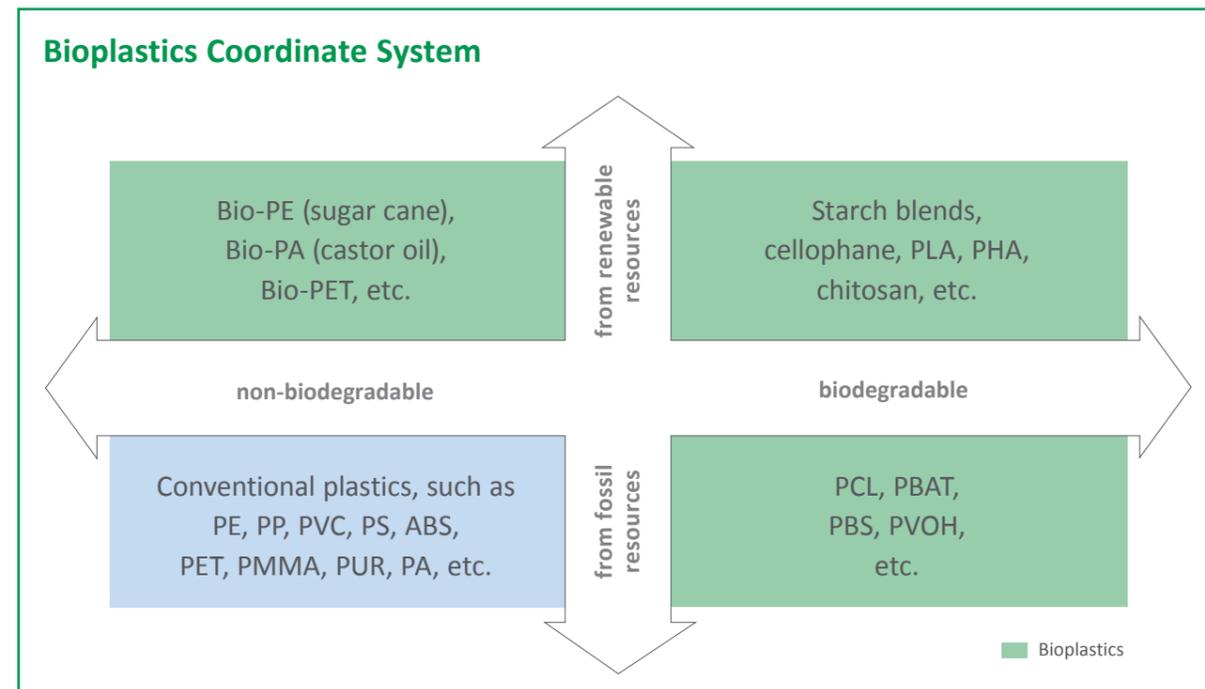
Bioplastics – a Definition

Bioplastics materials are biodegradable and/or produced based on renewable resources (biobased). These materials have properties similar to those of conventional plastics and can be warehoused in

a comparable manner. They can be processed on conventional plastics machines.

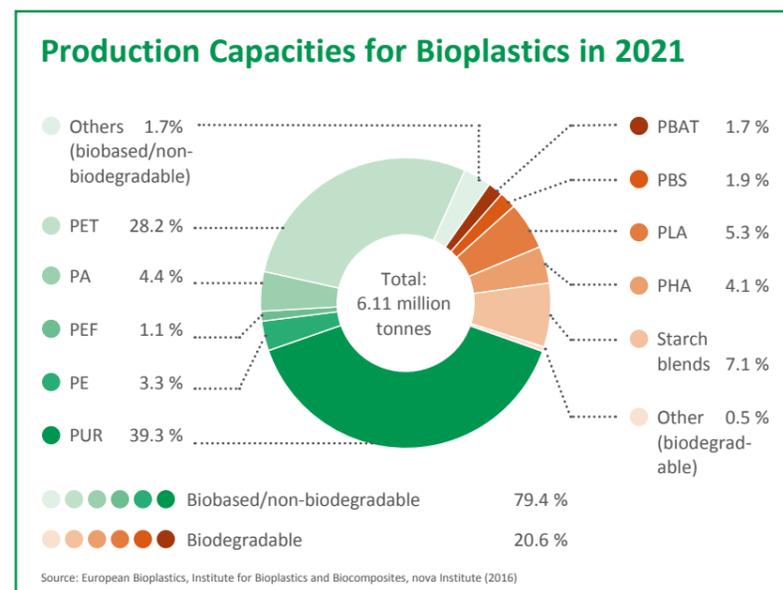
Our portfolio includes products which can biodegrade in a variety of

environments, such as industrial composting, home composting, soil and water.



Bioplastics – a Growth Market

According to current forecasts, global production capacity for bioplastics will see an increase of around 45 % by 2021, from 4.16 million tonnes in 2016. Biobased, non-biodegradable plastics will account for the majority of these. In particular, so-called “drop-in” solutions, that is, bulk plastics such as PE and PET which can be manufactured based on renewable resources, are responsible for this tremendous increase.



What Standards and Labels Exist for Bioplastics?

Bioplastics are tested by independent certification bodies. Amongst the most important of these in Europe are Vinçotte (Belgium) and DIN CERTCO (Germany). Industrially compostable plastics or products which are certified to EN 13432 are permitted to bear the Seedling® logo from the European Bioplastics industry association.

Our products are certified in compliance with “OK compost” and “OK compost HOME” for example.



Why Should You Use Bioplastics?

Bioplastics are already available in a broad, market-ready selection for a variety of applications. They make it possible to develop innovative, alternative solutions which reduce dependence on fossil resources whilst improving the carbon footprint of products such as packaging materials. These materials

also allow for additional methods of disposal and recycling, thereby lessening the burden on our existing waste systems and thus also the environment. The packaging industry is currently the largest user of bioplastics, but these materials provide interesting outlooks for many other applications

and are also attracting increasing interest from consumers.

The reasons for this are as follows:

- **Growing environmental awareness** of society and a demand for sustainable, environmentally friendly products.
- **Legal requirements** such as a ban on plastic bags in a number of countries.
- **Biodegradability as a product feature**, e.g. flower pots in which plants are planted and then biodegrade in soil.
- **Reduction of waste** through the use of bioplastics.



Ideas Lead to Applications

Already today, our products are well-established in a number of applications and can be used in various processing methods. Below are some examples of different areas of application. All products can be colored individually.



Our product portfolio:

- Series M-VERA® A for agriculture applications
- Series M-VERA® B for bag applications
- Series M-VERA® ECS for engineering applications
- Series M-VERA® GP for general purpose applications

Film Applications

- Shopping bags
- Biowaste bags
- Fruit and vegetable bags
- Agricultural films
- Food packaging
- Labels, such as for fruit

Injection Moulding Applications

- Coffee capsules
- Disposable cutlery and tableware
- Food and cosmetics packaging
- Caps and closures
- Agricultural applications such as flower pots and plant ties
- Toys



We provide technical service and on-site support for machine setup and production. We can supply color and additive masterbatches based on bioplastic carriers in partnership with AF-COLOR.

Biomasterbatches (EN 13432 certified)

- Color and carbon black masterbatches
- Additive masterbatches
- Scent masterbatches, e.g. lemon
- Odour absorbers



We Will Be Pleased to Meet You!

BIO-FED

Branch of AKRO-PLASTIC GmbH

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Here you can find
our brochure in
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