



MedEco Compounds

sustainability key facts

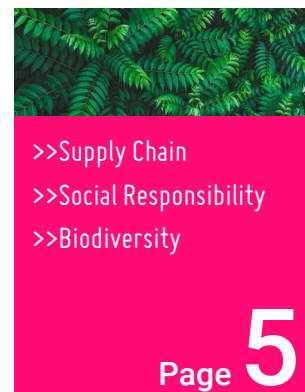
In a Nutshell

- ✓ **Biobased, recyclable** and **biodegradable**
- ✓ **Energy efficient processing**
- ✓ Ready for a **circular economy**
- ✓ **Less material needed** due to high strength and stiffness
- ✓ **No competition to food production**
- ✓ **Lower carbon footprint** than fossil plastics with similar properties
- ✓ **Human rights** are respected throughout the whole supply chain
- ✓ No **deforestation** for plantations



Deepdive

On the following pages, we take a closer look at the sustainability facts:



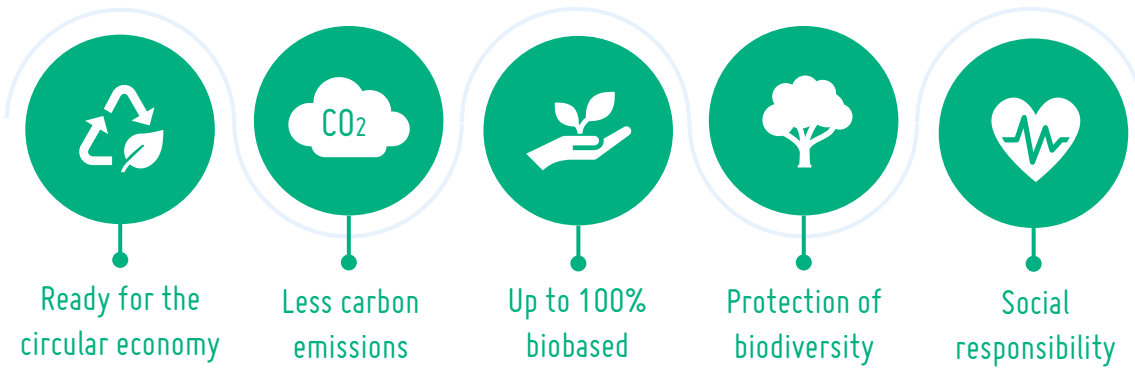


Key facts

What makes BIOVOX bioplastics „sustainable“?

Let`s answer this right away: Our bioplastics are up to 100% **biobased**, ready for **circular economy** and their **low carbon footprint** saves up to 85% CO₂e compared to conventional medical grade plastics.

At the end of their life cycle, our compounds do not release fossil carbon into the atmosphere. All of our materials are **recyclable** and can therefore be used in a circular economy. Thanks to their suitability for efficient monomer recycling, they can even be used for new medical products in medical grade quality. Throughout the supply chain, we also take care to protect **biodiversity and rainforests** and live up to our **social responsibility**.



Let`s take a closer look at the exact sustainability key facts:

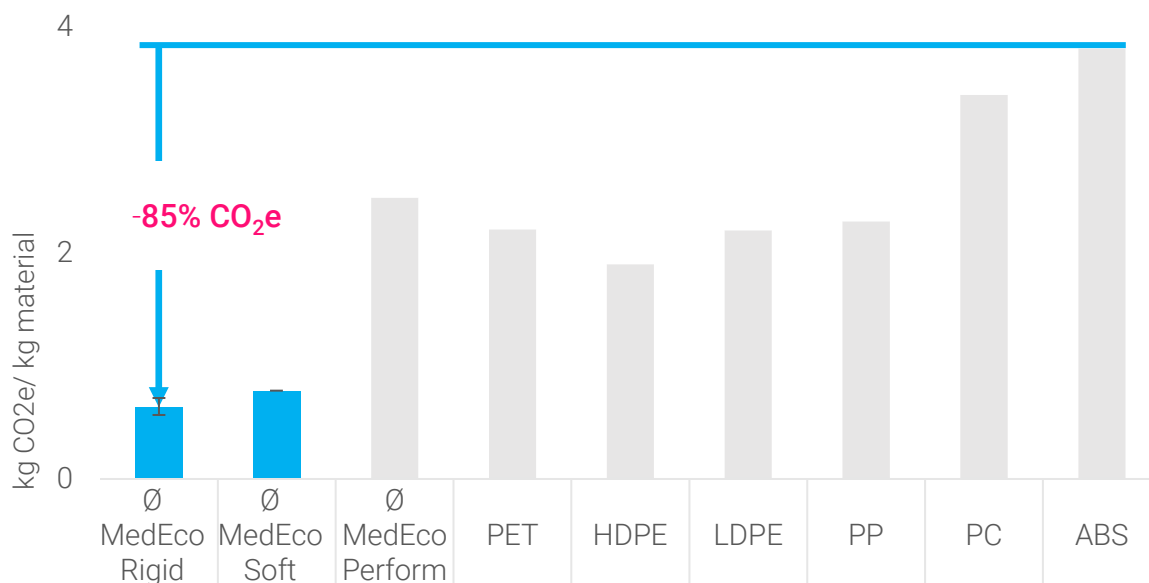
MedEco Family	Rigid					Soft		Perform	
Grade >>	ICB	ICB C1	IGH	XCB	XGB	IGI	XVI	ICH	XCI
Carbon footprint C2Gate [kg CO ₂ e / kg compound]	0,60	0,58	0,73	0,60	0,68	0,78	0,78	Noch keine Daten	
Biobased carbon content	100%	100%	100%	100%	100%	100%	100%	55%	38%
Mechanical Recycling	▲	▲	▲	▲	▲	▲	▲	▲	▲
Chemical Recycling	▲	▲	▲	▲	▲	▲	▲	(▲)	(▲)
Biodegradable	▲	▲	▲	▲	▲	▲	▲		
Supply Chain Act compliant	▲	▲	▲	▲	▲	▲	▲	▲	▲

Carbon footprint

How much CO₂e do BIOVOX bioplastics emit?

The answer depends on which of our product families you choose: MedEco Rigid and MedEco Soft grades have the lowest footprint, whereas our high performing MedEco Perform bioplastics are higher in CO₂e emissions. By choosing our most sustainable materials you can **save up to 85% CO₂e!** Additional savings can be realized through lower processing temperatures and materials savings thanks to increased stiffness.

The bars on the right show the visibly higher footprint of conventional plastics. Take a look at the exact numbers below:



Methodology and assumptions

- ▶ Acc. DIN EN ISO 14040 & 14044
- ▶ Based on real supply chain data where available. Publicly available data sources were used otherwise.
- ▶ Cradle-to-Gate includes raw material production and compounding. Not included are logistics, conversion, sterilization etc.
- ▶ Incineration is currently the most likely EOL scenario. Big improvements can be realized with recycling.

>> Click & Calculate

Calculate
your saving
potential!

<https://tinyurl.com/saveCO2>



Recycling

Ready for circular economy

The EU requires every industry to move towards a circular economy. BIOVOX MedEco is the best option now, because it has a low carbon footprint, and gets even better with chemical recycling.

A closed loop for MedTech!

Yes, recycling is also possible for medical applications – quality and traceability can be ensured by choosing right recycling process:

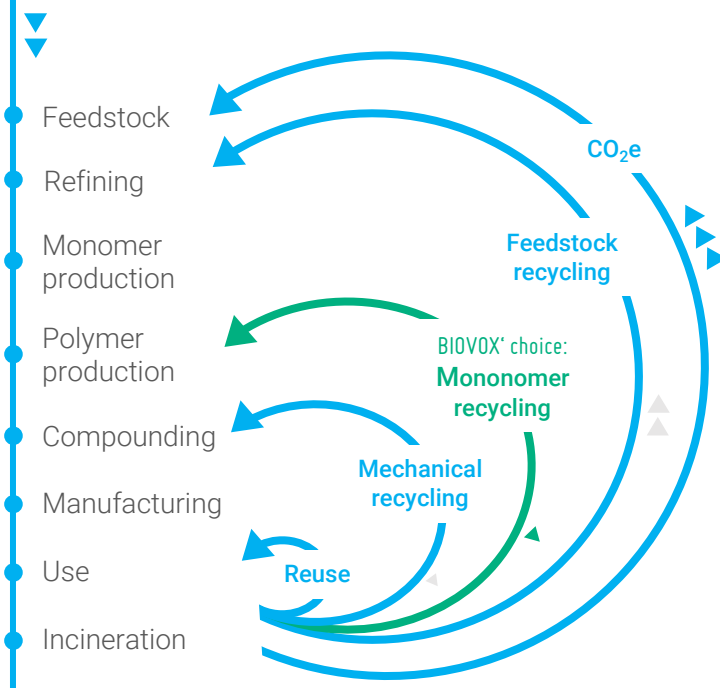


Figure based on Norbert Niessner (2022): Recycling of Plastic

Feedstock plants act as a carbon sink, binding CO₂ from the atmosphere. This is the same amount of carbon that would be released again when the plastic is incinerated - closing the loop over one year rather than millions of years as with fossil oil: this what is meant by the term defossilization.

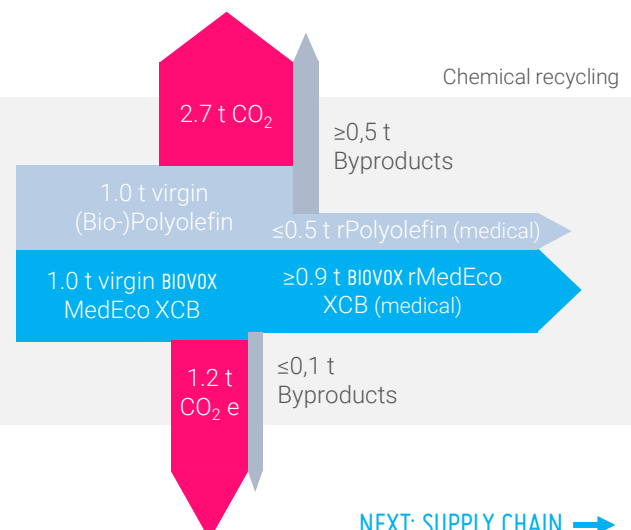
Mechanical recycling is out of scope for the very most medical applications: traceability and quality are not achievable at scale.

Monomer recycling, however, meets the quality & purity standards for medical grades: The material is absolutely identical to virgin material. A true and compliant same level recycling, saving on carbon and land use.

Only polyesters such as like MedEco can be chemically recycled to monomers. Polyolefins can only be chemically recycled through energy-intensive **feedstock recycling** (e.g. pyrolysis).

How much CO₂e can be saved through recycling?

The energy efficient recycling process halves the carbon emission of recycled MedEco compared to the production of virgin material not considering biogenic credits. Emissions from incineration are eliminated completely.





Supply Chain Compliance

BIOVOX ensures, that human rights as well as environmental standards are respected along the whole supply chain.



Origin

We are producing in Germany. Our raw materials are sustainably sourced in Europe and Asia.

Biodiversity & Rainforest Protection

All feedstock of BIOVOX bioplastics are certified through *ISCC plus & Bonsucro*, ensuring zero deforestation as well as the protection of biodiversity, soil, water and air.

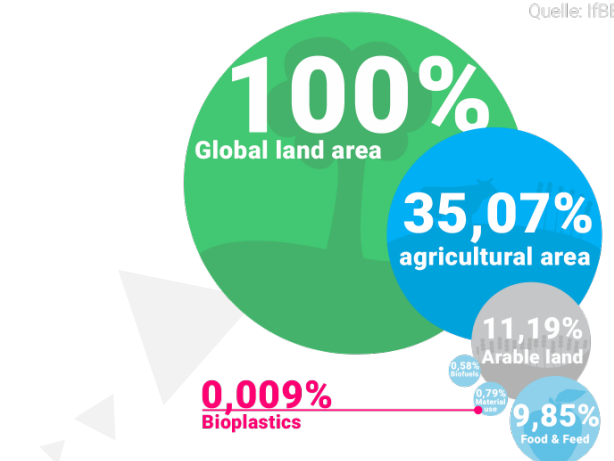
Social Responsibility

The feedstock certification also includes social and human rights. Covered are good working conditions with safety and health standards as well as communal rights and rural development.

MedEco is a lot – but no competition to food!

Currently **less than 0,01%** of agricultural land is used for bioplastics. In a circular economy, all plastics can be farmed on 2.8% of arable land or 0.31% of total land area. And this calculation does not take into account the use of waste as a feedstock, which is still uncommon for CO₂ and cost reasons, but which is possible with our bioplastics.

Quelle: IfBB

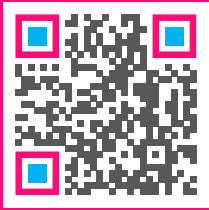


And what if everything was made from bioplastics?

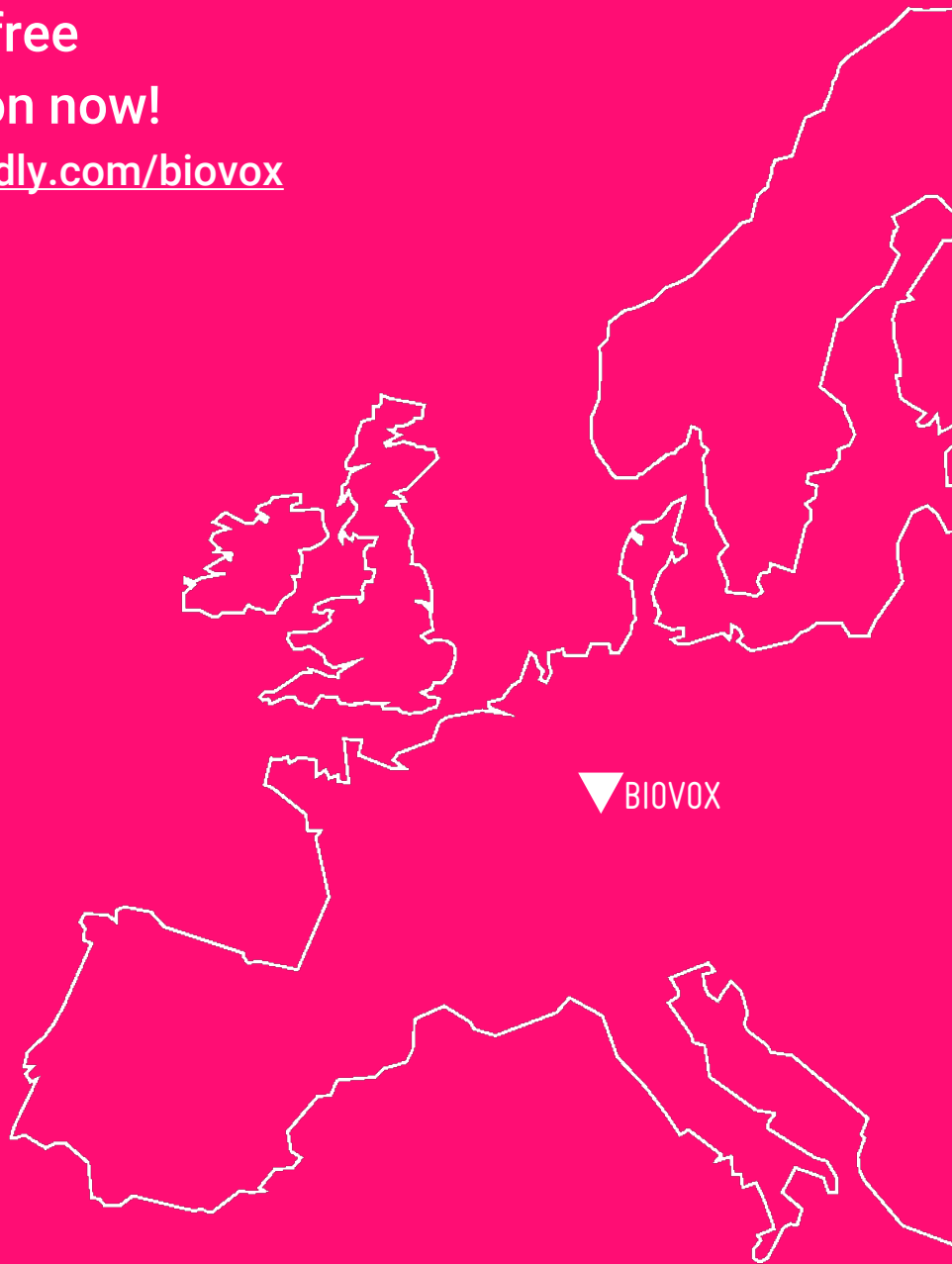
Today only **0,08%** of the arable land is used to produce bioplastics.

All of the world's plastics can be grown on **13,9%** of the arable land.

Circular economy requires a maximum of **2,8%** of arable land, or **0,31%** of the global land area.



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consultation now!
[>>>www.calendly.com/biovox](https://www.calendly.com/biovox)



BIOVOX GmbH

Robert-Bosch-Str. 7
64293 Darmstadt

be-green@biovox.systems

Managing directors:

Dr.-Ing. Julian Lotz, Dr.-Ing. Vinzenz Nienhaus,
Carmen Rommel

Company seat: Darmstadt

Registry court: Amtsgericht Darmstadt, HRB 101494

VAT.-ID: DE339863819 | Tax number: 00722913058



Dr.-Ing. Julian Lotz

julian.lotz@biovox.systems

[+49 6151 7869330](tel:+4961517869330)