

# News on sustainable solutions made by Gruschwitz

Gruschwitz Textilwerke AG



„Innovations from  
competence“

# EU strategy for sustainable and circular textiles

## Essential new regulations

The EU commission's recently formulated "European Green Deal" and the "EU commission's 2030 Vision for Textiles" are the main driving forces for pushing, encouraging and incentivizing producers to take action to comply with the requirements of a sustainable and circular approach of their textile supply chain.

[https://environment.ec.europa.eu/strategy/textiles-strategy\\_en](https://environment.ec.europa.eu/strategy/textiles-strategy_en)

## Implications and challenges for textile producers

The EU strategy laid out will affect all textile manufacturers no matter where they are in the world and pose considerable and complex challenges in all aspects and segments of their business activities.

# The two dimensions of sustainability from Gruschwitz

## Dimension 1 - Source of raw materials

### From natural materials

Naturally, fast-growing fibers are i.e. cotton, linen, and hemp. Moderate use of crop protection chemicals and additional irrigation are key for environmentally sustainable solutions. Mineral fibers are based on naturally existing raw material.

### From petrochemical raw materials

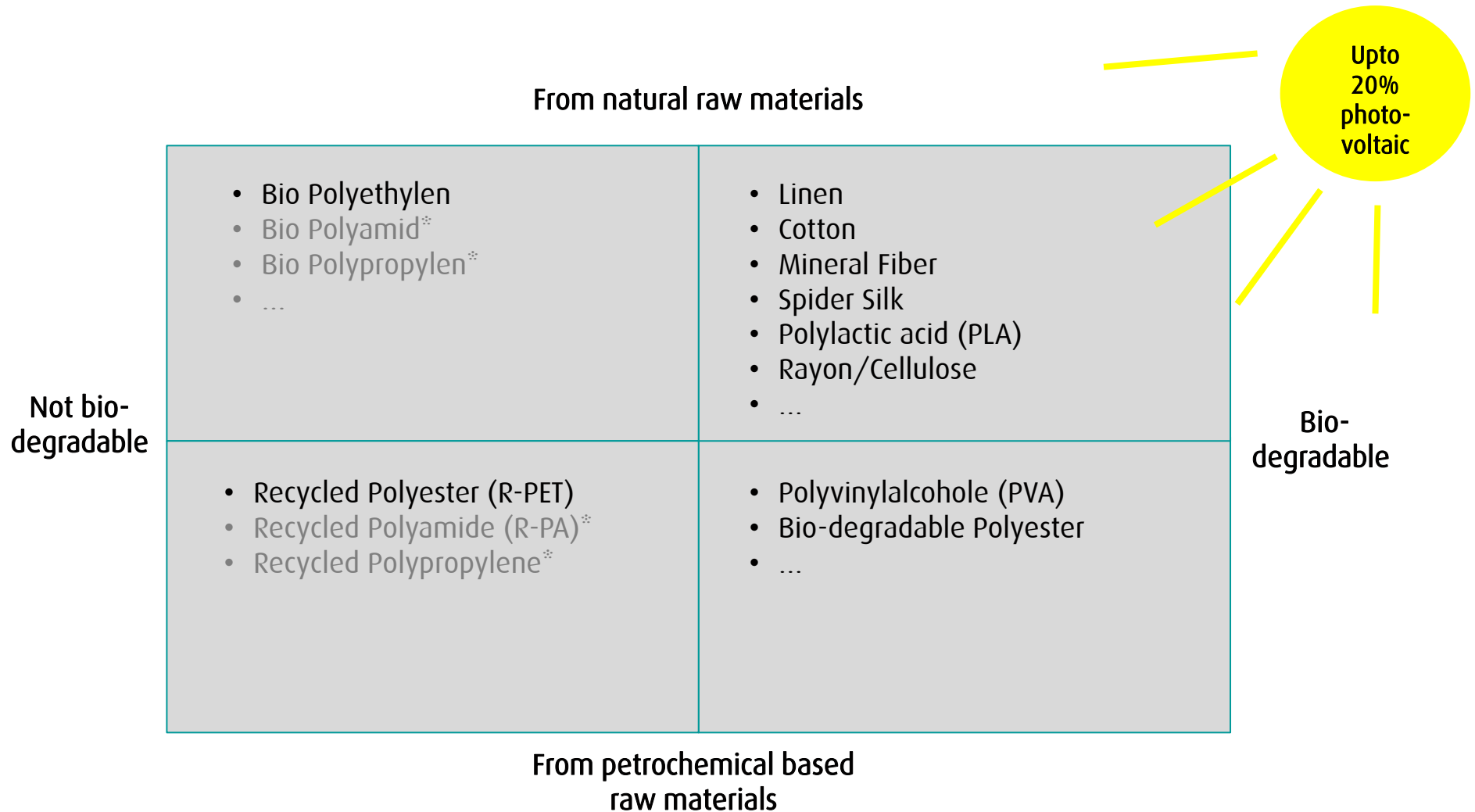
Petroleum is by far the leading source used in creating synthetic yarns. For example Polyester, Polyamide, Polyethylene, Polypropylene and Aramid are all made from petroleum.

## Dimension 2 - Degradability

Biodegradable textiles/yarns are structures that can decompose under certain conditions, such as exposure to microorganisms, moisture, and oxygen. They offer potential benefits for reducing environmental impact, waste management, and circular economy.

Biodegradability tests measure how fast and how much a textile material can degrade under specific conditions. There are different types of biodegradability tests, such as aerobic, anaerobic, composting, soil burial, and marine. Each test simulates a different environment and has different parameters, such as temperature, humidity, pH and inoculum.

# Sustainability Matrix at Gruschwitz



\* Not processed yet

# The four quadrants of the sustainable yarn matrix

## 1st quadrant: Natural and not biodegradable

Biomass cellulosic based thermoplastic material (PE, PA, PP)

## 2<sup>nd</sup> quadrant: Natural and biodegradable

A material which gets decomposed through natural processes , such as action by bacteria, is called biodegradable. The majority of natural fibers are biodegradable. Unlike many synthetic materials, natural fabric decomposes harmlessly once it has reached the end of life or can be readily recycled and reused without harming the environment.

## 3<sup>rd</sup> quadrant: Petro based and biodegradable

Using latest additive technology polyester (PET) fibers can degrade similarly to natural fibers. With the use of this new technology, the biodegradation process of PET fibers is accelerated.

## 4<sup>th</sup> quadrant: Petro based and not biodegradable

A material which is not easily decomposed by natural processes is termed as non-biodegradable. Traditional petroleum-based chemical fibers such as polyester, polyamide, and polypropylene, are petroleum-based and non-biodegradable fibers. In this case recycling is the sustainable solution.

# Sustainability at Gruschwitz

#	Material	Category	Comments
1	Linen	Natural raw material/ bio-degradable	Important high-volume product for Gruschwitz applied in very demanding industrial applications. Gruschwitz has a long-term experience and special know how for converting linen.
2	Cotton	Natural raw material/ bio-degradable	Key part of the sewing thread portfolio
3	Mineral fiber	Natural raw material/ bio-degradable	Filava™ is a mineral fiber with additives to guarantee constant quality and good processability
4	Spider silk	Natural raw material/ bio-degradable	AM Silk cooperates with Gruschwitz for the industrial ramp up of Biosteel®
5	Polylactic acid (PLA)	Natural raw material/ bio-degradable (under special industrial conditions)	Gruschwitz has experience with the processing of PLA from different sources
6	Rayon/ Cellulose	Natural raw material/ bio-degradable	Rayon is used in various hose applications
7	Polyvinylalcohol (PVA)	Petrochemical based/ bio-degradable	Gruschwitz has a lot of experience in using PVA in significant quantities for reinforcement of rubber hoses
8	Bio-degradable Polyester	Petrochemical based/ bio-degradable	Innovative process combining polyester with additives to improve degradation. First grades under development.
9	Bio Polyethylene	Natural raw material/ not bio-degradable	Bio based Dyneema: complete portfolio available
10	Recycled Polyester (R-PET)	Petrochemical based/ not bio-degradable	Innovation based on 100% post-consumer recyclable material; numerous grades available

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