bioSTAR®







Renewable and bio-based materials are started to be used in compounds for environmental sustainability. Tisan Engineering Plastics is aware that compounders have responsibility to environmental issues as a plastic raw material producer. Tisan has produced green compounds with bio-based raw materials to show Tisan's sensitivity to environment under the brand BioSTAR®.

BioSTAR® includes bio-based raw materials which decomposes into carbondioxide, water, methane, inorganic compound and biomass by using enzymatic systems and they intermingle to the environment. By this manner, the life cycle continues. Bio-based compounds are engineered with special additives to increase bio-content in the products to meet the requirements for alternative green products which are biodegradable or has long life.

BioSTAR® grades are developed from PLA and PA bio-based polymers reinforced with glass fiber and improved with halogen free flame retardant. The renewable content of the products start from 20% and increase to 90% due to included bio-based polymers, reinforcements and additives.





1 Mechanical tests	2 Physical properties	3 Weathering and aging tests
4 Flammability tests	5 Color arrangement and measurements	6 Thermal and flow analysis
7 Heat deflection analysis	8 Electrical and chemical resistance	9 Dimensional tests
ISO	ISO OHISAS	(A) ISO



Our quality is your guarantee

customer having passed all the quality tests in our T-LAB laboratory matching international standards.













More than 40 years experience

Tisan Engineering Plastics specialized on production of compounds used as raw materials more than 40 years experience. Tisan produces competitive and favorable solutions to customers based on their requirements. Our aim is to provide competitive solutions, qualified products, flexible production, high-speed service with strong technical infrastructure and human quality in both standard and exclusive products for all markets.

Tisan

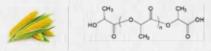
Biopolymers In bio ST



• PA 56

Bio-based PP









bioSTAR Applications

Packaging:

- Film
- Sachet / Bag
- Bottle

Nische Products:

- Automotive
- Electrics and Electronics

Food Industry:

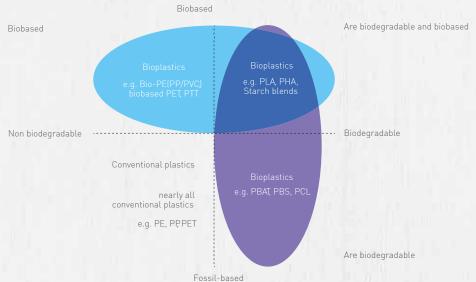
- Disposable cutlery
- Plates and service products





Product Code	Application	Density (g/cm3)	Notched Izod Impact Strength (kJ/m2)	E-Modulus (MPa)
BIOSTAR® 7419 I TF 15 NC	Biodegradable and compostable compound suitable for injection process	1,38-1,42	2-6	4000-5000
BIOSTAR® 7419 F	Biodegradable and compostable composite suitable for film processing	1,23-1,26	-	-
BIOSTAR® 7419 N GF 30 NC	Biodegradable and compostable compound suitable for injection process	1,44-1,48	4-8	9000-10000

Bioplastics



Graph: Material coordinate system of bioplastics Prof. Dr. Ing. H.J. Endres, IFBB University of Applied Sciences and Arts

Plastics Engineer

The Advantages of Bio-Based Plastics

- It reduces the carbon footprint.
- Provides energy savings in production.
- It reduces the amount of waste that is not degraded to the environment during production.
- It does not contain additives such as phthalate or bisphenol A that may impair human health.
- When used in food containers, it does not impair the odor or taste of the food.

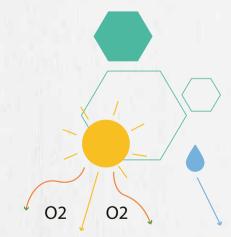


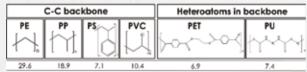
Bio-Based Plastics

The materials called as bioplastics in recent years are innovative plastics made from renewable raw materials.

The Difference Between Degradable & Biodegradable

- Polymers may encounter factors and substances such as high temperature and UV-rays, moisture, ozone, chemicals during their production, processing or use, and change their physical properties or chemical structures at a certain level or in a way that prevents the use of polymeric material completely.
- This situation is called degradation of plastic.
- Biodegradation is the ability of the polymer to participate in the cycles in nature in biological activities.











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