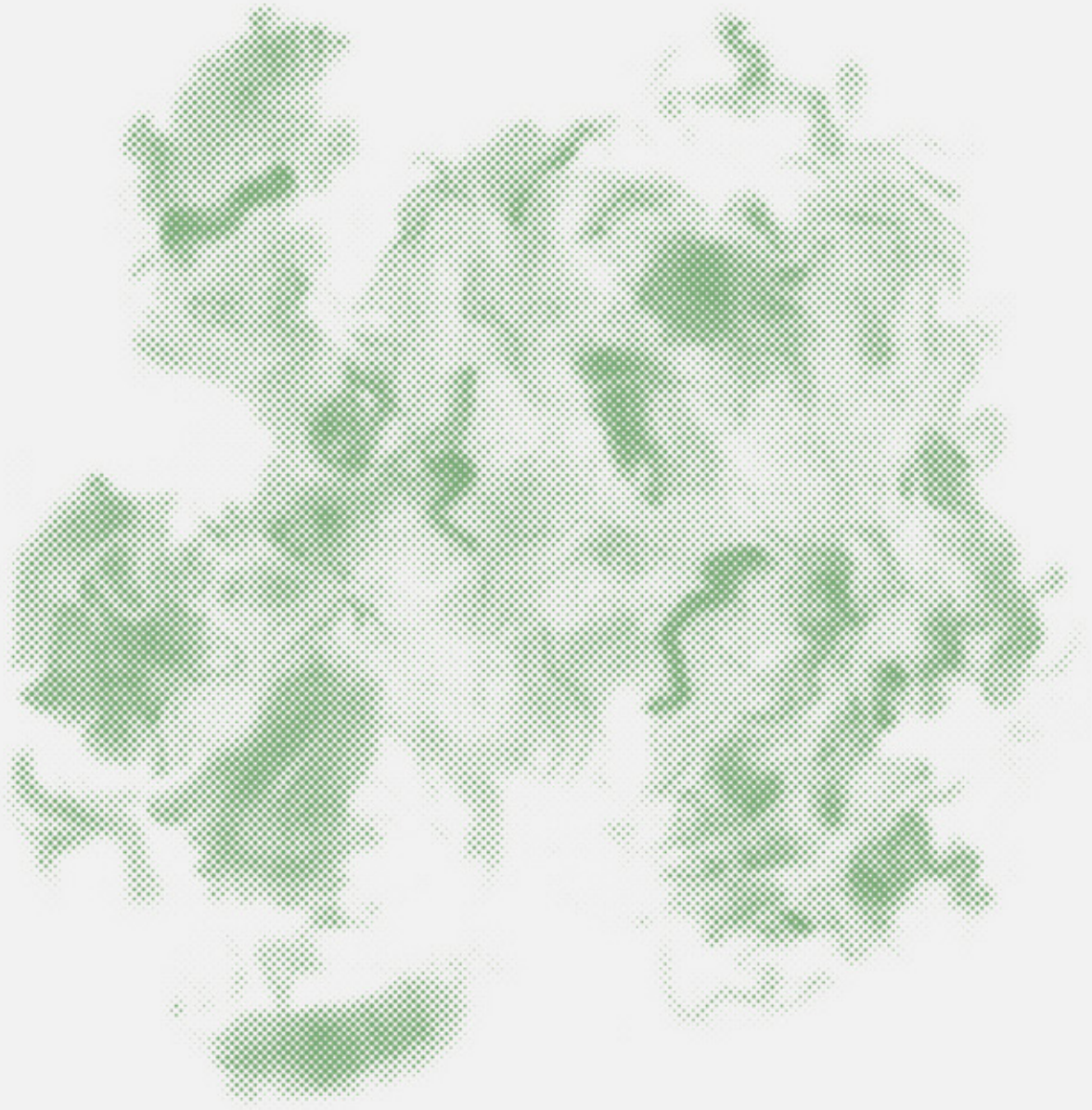


INNOVATIVE MATERIAL
FOR THE NEXT GENERATION



PlaXTM

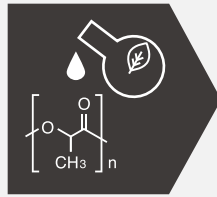
PlaX™

Bioworks has developed the innovative plant-based additives that improve PLA's challenges.

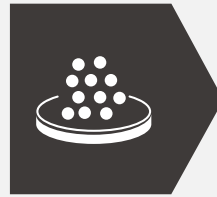
Process



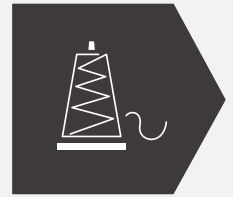
**Sugar
Cane**



**PLA
+**



**PlaX™
Compound**



**PlaX™
Fiber**

「
**Bioworks
Original Additives**
」

Properties



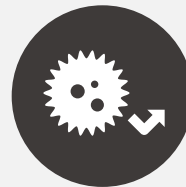
Plant-based



Biodegradable



CO2 Reduction



Antibacterial



Anti-odor

Lifespan

7-10 year lifespan

Color Saturation

Dark color dyeing available

Q. Where is PlaX™ made?

>>Raw material PLA is made in Thailand. Bioworks produces the original additives and compounds in Japan.

Q. What else is PLA used for?

>>PLA is mainly used for plastic bag for grocery stores and garbage bag for food waste.

Q.What composition should be listed on the label?

>>PLA(US) / Polylactide(EU) / ポリ乳酸 (PlaX) (JP)

Q. Does PlaX™ has any certifications?

>>PlaX™ raw fiber (staple) and yarn (filament) have obtained the "OEKO-TEX® STANDARD 100" certification, an international safety certification for textile-related products. This certification is awarded only to products that meet stringent criteria based on testing for over 1,000 harmful chemical substances by laboratories authorized by the OEKO-TEX® International Association. PlaX™ is certified under Product Class I, the category for products intended for infants.

>>PlaX™ has been certified as 99% bio-based under the USDA(United States Department of Agriculture) Bio Preferred Program.

Q. What precautions should be taken when washing PlaX™ products?

>>PlaX™ is not resistant to high heat exceeding 130°C and alkali. Therefore, we recommend the these washing instructions.



Set the iron to a low temperature, use a pressing cloth, and iron for a short period.

Q. Does PlaX™ use the edible part of sugarcane?

>>The amount of farmland required to produce PLA raw materials in Thailand is only 0.08% of the total, so we believe that the impact on food security at present is minimal. Meanwhile, in the future, we are also considering producing PlaX™ using recycled materials.

Q.What kind of dye stuff can PlaX™ be dyed with?

>>Disperse dye (110-120°C)

Q. Is PlaX™ recyclable?

>>PlaX™ can be chemically recycled by separating PLA and other materials from the products and recycling each. For that purpose, Bioworks is trying to construct a recycling scheme.

Q. Is PlaX™ degradable in the sea?

>>PlaX™ cannot meet the “OK biodegradable MARINE standard” , because PlaX™ is a durable product compared with conventional PLA. Bioworks has confirmed that if the clothing has been used for many years and has undergone hydrolysis, it will biodegrade by more than 90% after 400 hours in the sea.

Q. What does Bioworks sell?

>>Basically, Bioworks sells staples and filament yarns made of modified PLA(PlaX™). However, it is also possible to sell spun yarns and fabrics. It is also possible to collaborate with yarn and textile manufacturers in the customer's supply chain.



Application



Bioworks

PlaX™ is a plant based synthetic fiber
modified from PLA by Bioworks technology.