# PolyTerra™ PLA
Compostability

At Polymaker we have improved the compostability rate of our newly released PLA to drive the global effort towards composting bioplastics in commercial composting facilities*.

**WE ARE MAKING CHANGES FROM THE MATERIAL TO THE PACKAGING.**

*Commercial composting timescales are typically 8-10 weeks for PAS 100

## PolyTerra™ PLA Material [ BIOPLASTIC ]

### PLA
[ POLYLACTIC ACID ]

Corn is harvested and processed to extract long chain sugar molecules which are fermented and polymerized to create Polylactic Acid

+

### BIOCOMPOUND
[ DESCRIPTION ]

Biodegradable ingredients compounded with naturally occuring elements.

Not produced from fossil raw materials

## Compostability of PolyTerra™ PLA

Comparison of the degradability of the material after 45 days between regular PLA and our PolyTerra™ PLA.

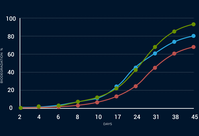
### CONDITIONS FOR COMPOSTING

| MOISTURE | OXYGEN | MICROORGANISMS | pH | TEMPERATURE | |
|---|---|---|---|---|---|
| 35%-60% (RH) | Well aerated compost | Microbial life | 8.1 | 58°C±2°C | Conditions applied to the test |

*Bioplastics need years to degrade under natural conditions.

## Compostability of PolyTerra™ PLA [ COMPARISON TABLES ]

Comparison of the degradability of the material after 45 days between regular PLA and our PolyTerra™ PLA.




- PolyTerra™ PLA
- Regular PLA*
- Cellulose

Thin-layer chromatography (TLC) grade cellulose is used as positive reference material during compostability studies according to international standards, e.g. ISO 14855

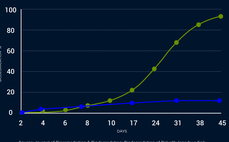
*PolyLite™ PLA

PolyTerra™ PLA degrades around 93.6% after 45 days. Regular PLA degrades around 79.9% after 45 days. PolyTerra™ PLA degrades ~15% faster than PolyLite™ PLA.

Test method: ISO 14855-1 and GB/T 19271-2011 determination of the ultimate aerobic biodegradability of plastic under controlled composting conditions. Method by analysis of evolved carbon dioxide.

## Compostability of PolyTerra™ PLA

Comparison of the degradability of the material after 45 days between PolyTerra™ PLA and Polyethylene LMWPE (Mw 9,700).




- PolyTerra™ PLA
- Polyethylene

Biodegradation of LMWPE in the sterilized compost inoculated with Pseudomonas sp. E4.

Source: Journal of Bioremediation & Biodegradation. Biodegradation of Polyethylene by a Soil Bacterium and AlkB Cloned Recombinant Cell. Moon Gyung Yoon, Hyun Jeong Jeon and Mal Nam Kim. (2012) 3:4

## How to compost PolyTerra™ PLA

Print PolyTerra™ PLA


Compost* PolyTerra™ PLA

*Breakdown of an organic compound by microorganisms in the presence of oxygen.

## What does PolyTerra™ PLA becomes after use?


When PolyTerra™ PLA is correcity composted, it breaks down into carbon dioxide, water, biomass and mineral salts of any other elements present. The material fully degrades with no toxic residues and the compost supports plant growth.

## SPOOL AND BOX 100% BIODEGRADABLE


Packaging made from recycled carton

## Packaging production process


## This product plants one tree

PolyTerra™ PLA is a naturally sourced product and by choosing it you are actively helping the environment by planting a tree.

Trees are planted in the region where the spools are sold in partnership with One Tree Planted association*

*onetreeplanted.org

View PolyTerra™ Compostability Report

View PolyLite™ Compostability Report

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