NatureWorks LLC

Ingeo: nature's materials from plants not oil

Only PLA manufacturer in the U.S.

FREQUENTLY ASKED QUESTIONS

Does Ingeo biopolymer require GMO corn?

No, special crops or modifications are not required to produce Ingeo biopolymer. Corn sourced from farmers within a 30-mile radius of our plant Blair, NE is used to make dextrose (corn sugar). We at NatureWorks purchase this dextrose to make Ingeo biopolymer. The corn used to make the dextrose is a mixed stream of non-GMO and GMO corn grown in the area. During the manufacture of Ingeo biopolymer, the multiple-stage processing and high heat used to create the polymer removes all traces of genetic material.

Will Ingeo biopolymer degrade if thrown by the side of a road?

NatureWorks LLC does not support littering of any kind. If not disposed of properly, Ingeo biopolymer will not reach the typical composting humidity and temperature required and thus will maintain its product integrity in the near term.

When and where will Ingeo biopolymer degrade?

Ingeo biopolymer offers the most landfill waste diversion options globally of any current commercially available plastic material. It can be physically recycled, industrially composted, incinerated, chemically converted back to lactic acid through hydrolysis (feedstock recovery) or landfilled.

Ingeo biopolymer is compostable in industrial composting facilities where available throughout the world. Under industrial composting facility conditions the temperature and humidity in typical sites will cause Ingeo biopolymer to lose molecular weight and become biodegradable to naturally occurring microorganisms.

Does Ingeo biopolymer disappear when it is put into the soil or seawater?

No, soil and seawater are relatively cold environments that severely retard the molecular weight loss, thus not allowing Ingeo biopolymer to become biodegradable

Does Ingeo biopolymer biodegrade in landfills?

No, due to the low oxygen concentration and drop in temperature, the natural environment will retard molecular weight loss thus not allowing Ingeo biopolymer to become biodegradable.

Does Ingeo biopolymer emit methane when landfilled?

Ingeo biopolymer goes through a two-step degradation; the first step is hydrolysis where the material is reduced down to a low molecular weight (<10,000) before becoming biodegradable. At that point the molecule is a food source for naturally occurring microorganisms.

This reaction is temperature and humidity dependent. If there were typical sub-surface temperatures (>3-4 feet) and humidity, it would take decades before the polymer would degrade even to its half-life of 40,000 molecular weight. Methane is produced by organisms during the anaerobic phase of metabolism using food waste as a source in a typical landfill environment. Ingeo biopolymer cannot be a source of methane unless it becomes biodegradable.

We are currently conducting a study on this effect and have posted the preliminary results

Does Ingeo biopolymer offer better disposal options than traditional petroleum-based plastics?

Yes, Ingeo biopolymer has the flexibility to be disposed of in several manners and fits most local end-of-life schemes throughout the world. These multiple disposal alternatives mean it can play a key role in landfill diversion. Ingeo biopolymer has been successfully composted in applications where a commercial composting infrastructure is in place. It also shows favorable properties for use where incineration is the preferred waste disposal system and offers potential for feedstock recovery.

Can I throw Ingeo biopolymer into my backyard compost?

Ingeo biopolymer should be composted in industrial compost facilities, which contain the right managed combination of temperature and moisture. Therefore, it is not recommended for use in typical backyard composting due to the lack of high temperature and inconsistent conditions.