

## 100% commitment to sustainable biopolymers

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Biopolymers are increasingly being used to package consumer products instead of using fossil resources. Biodegradable polymers like PLA (polylactic acid) are ideal for these applications. NatureWorks has pioneered the commercialisation of Ingeo (PLA) biopolymers made from natural, renewable materials over the last twenty years. Its Ingeo biopolymer is made from locally grown crops in the USA and exported worldwide for both single-use and durable products, from coffee capsules and tea bags to nappies and appliances. As more of us eat 'on the go' we also need cutlery, cups and disposable containers that can be recycled separately or composted together with the food waste.



Corn farmers

The company has become a key driver of the bio-economy. In recognition of their leading role, and the importance of biopolymers in a Circular Economy, NatureWorks is now a signatory of the Ellen MacArthur Foundation's New Plastics Economy Global Commitment. NatureWorks first gained ISCC PLUS certification in

2012 for Ingeo production, one of the first biopolymers manufacturers to do so. Erwin Vink, Sustainability Manager at NatureWorks says; *'ISCC PLUS certification has been adopted by global brands and is supported by non-governmental organisations. We particularly value ISCC for its emphasis on no-deforestation, protection of the environment, social principles and the inclusion of a GM free option.'*

Currently over half of the corn used as raw material for Ingeo, is ISCC certified. NatureWorks will now ensure that by 2020, 100% of the agricultural input to its 150,000 tonne plant will be certified to the ISCC PLUS standard. This major commitment firmly aligns the company with the Ellen MacArthur Foundation's aspiration that all biopolymers should be made from sustainably sourced biomass.

More than 90 farms, with an average of 330 hectares of corn per farm, will be involved in the certification programme by 2020. The company will work closely with the new farmers to prepare them for the ISCC audit. NatureWorks also administers the traceability system. The ISCC PLUS principles of no deforestation, good agricultural practices and management, continuous improvement and compliance

with laws and human, labour and land rights will be upheld throughout the agricultural and processing supply chain for Ingeo. These principles apply regardless of the crop, so ISCC PLUS certification can be applied to all biomass wherever it is sourced. NatureWorks' technology has inbuilt flexibility when it comes to raw materials. In the future, sugars from agricultural and forestry wastes and even greenhouse gases will be potential inputs for Ingeo production.

With 100% certified input, NatureWorks will have even better traceability back to the farm. Erwin again; *'Guaranteed sustainability credentials is a very positive factor, which gives consumers the confidence to choose plant-based products.'*

When Ingeo reaches the end of its life, there are a number of disposal and recycling options, all of which have a low impact on the planet. Organic recycling via industrial composting with food waste is most suited to food packaging and products like bags, tea bags and coffee capsules. The used packaging decomposes to carbon dioxide, water and humus, a soil improver. For the right products and where the infrastructure exists, Ingeo can also be mechanically recycled into new products. Ingeo can also be broken down into its lactic acid building blocks, which can then be chemically recycled back to new PLA. If incineration is the only option in some locations, it results in a much lower net gain in atmospheric CO<sub>2</sub>, than burning fossil plastic. This is because the CO<sub>2</sub> emitted is that which was absorbed from the atmosphere during the growth of the original plant biomass. Also, the energy recovered when bioplastics are incinerated is renewable.



*NatureWorks factory*

The demand for biopolymers is forecast by the Nova Institute to increase by 24% over the next five years. ISCC is responding by developing solutions for other bio-based applications as consumer brands move away from fossil materials. NatureWorks is committed to sourcing all raw materials to meet this additional demand from responsibly certified farms. By completely ruling out deforestation and other unsustainable practices, NatureWorks is working one hundred percent with nature.

For more information on ISCC certification please contact ISCC at [info@iscc-system.org](mailto:info@iscc-system.org).