

Green Processing Solutions Network



teamwork for sustainable solutions

**Gigantic amounts of plastic waste,
most of which come from packaging,**

pollute our environment and pollute our oceans



**Scientists assume
that in year 2050 more plastic waste
in our Sea swims as fish**

**The extent of the global plastic flood can no longer be overlooked,
whether in a landfill on land or floating in the sea.**



**sooner or later all those bags,
bottles or crates decompose
through UV radiation,
bacteria, salt, temperature
fluctuations or friction**

The process may be rapid or it may take hundreds to thousands of years, depending on external influences and material composition. But what is released from it changes both now and in the long term the entire biosphere of our planet.

A close-up photograph of numerous small, translucent, and colored plastic particles (microplastics) suspended in a dark liquid, likely water. The particles vary in size and shape, some appearing as small flakes or fibers. The background is dark, making the lighter-colored particles stand out.

microplastics

“Solid, water-insoluble plastic particles, that are five millimeters and smaller”

This is the definition of the United Nations Environment Program (UNEP) and the Federal Environment Agency (UBA) for microplastics, which WWF Germany also uses as a guide. So far, however, there is no uniform definition worldwide. This also explains why different numbers are in circulation: According to the International Union for Conservation of Nature (IUCN), 3.2 million tons of microplastics are released into the environment every year, around 1.5 million tons of which end up in the oceans. Other sources give even higher values. The decisive factor, however, is the fact that microplastics can be found almost everywhere in nature today.

Biodegradable (compostable) plastics

Polylactid (PLA)

In addition to starch blends, polylactides are currently available in the organic Plastics are the material group with the Largest volume potential. The basic material for PLA is lactic acid. PLA falls under the category of synthetic polymers, because the substance is artificially produced in the laboratory.

Different to conventional plastic, PLA is considered a so-called "bio-plastic", because it is made from renewable raw materials. PLA consists of corn starch and lactic acid and thus fulfills this Criterion of renewable biomass.

The manufactured molecular structure of PLA is biodegradable and under certain conditions also compostable.

However, PLA can also produce microplastics, depending on the Situation, mechanical properties and environmental conditions.

compost plastics

Whether a shopping bag or a yoghurt pot is made of PLA plastic or another bioplastic is usually not clear at first glance. The label on the packaging can give you clues. You will often find such information in the advertising statements about the product. But these may be inaccurate or misleading. The consumer center points out that there are also bioplastics that are not compostable. On the other hand, "biodegradable" is not synonymous with bio-based bioplastic. Materials derived from petroleum can also be biodegradable. You can often tell whether a bioplastic like PLA is also biodegradable by the printed logos:

The DIN standard logo.

The "seedling" logo for compostable bioplastics, which represents a seedling growing in a circle.

There is not yet a uniform labeling within the EU.

Types of composting:

1. Industrial composting:



Industrial composting, unlike home composting, not in the garden under the influence of natural conditions. In industrial composting, all fluctuations are carried out the weather excluded and therefore always at the optimum level for kept the process of composting.

So can the microorganisms work perfectly and the decomposition of the organic matter is implemented effectively.

A major advantage of these optimal conditions in the industrial Composting is that so does many more materials such as Packaging can be composted.

Types of composting:

2. Home Composting:

Compliance with EU standard EN 13 432:

This standard states that the entire product, including its colours, labels etc. is fully biodegradable and compostable.

Normally, the (in-house) compost does not produce the necessary temperatures to ensure a timely decomposition process. Therefore, this label specifically identifies those products that decompose within six months under the prevailing conditions of a compost heap. During this time, at least 90% of the material must be broken down into water, carbon dioxide and biomass. A chemical test ensures that neither organic pollutants such as polychlorinated biphenyls (PCBs) nor heavy metals such as lead, mercury and cadmium get into the soil. The substances introduced must not have any influence on the compost quality. This is ruled out by means of a plant tolerance test.



