

# Green Processing Solutions Network



**Teamwork for sustainable solutions**

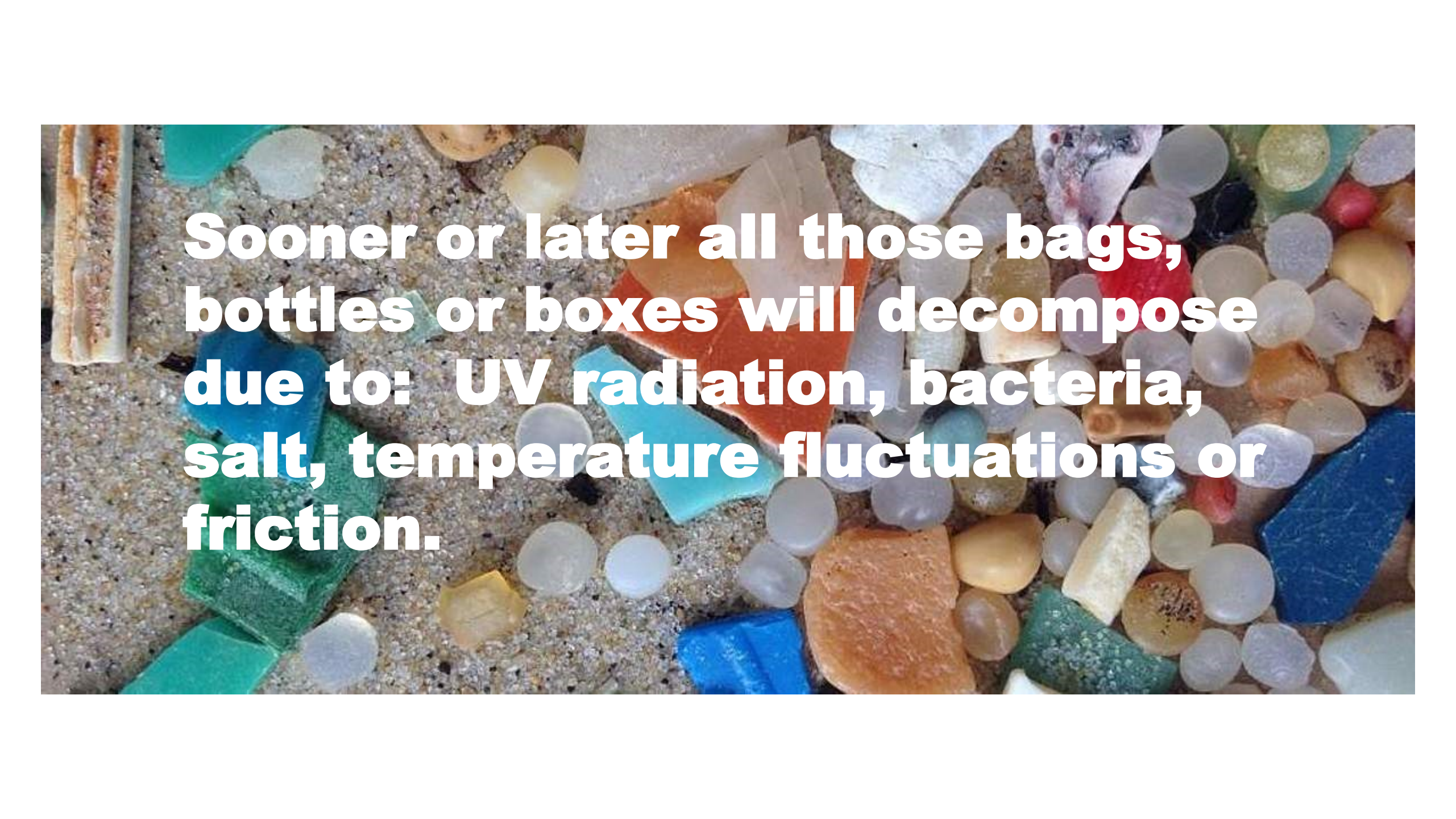
**Gigantic amounts of plastic waste, most of which come from packaging,**

**pollute our environment and our seas**

**Scientists assume that in  
by 2050 there will be more plastic waste in  
our world Sea swims as fish.**

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





**Sooner or later all those bags, bottles or boxes will decompose due to: UV radiation, bacteria, salt, temperature fluctuations or friction.**

**The process may be quick or, depending on external influences and material composition, take hundreds to thousands of years.**

**But what is released from this changes both currently and in the long term the entire biosphere of our planet.**



## **Microplastics:**

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

This is the definition of the United Nations Environmental Program (UNEP) and the Federal Environment Agency (UBA) for microplastics, which WWF Germany also follows.



However, there is currently 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 end up in the environment every year, around 1.5 million tons of which end up in the oceans. Other sources give even higher values. What is crucial, however, is the fact that microplastics can now be found almost everywhere in nature.

# **Biodegradable (compostable) plastics**

## **Polylactid (PLA)**

**In addition to starch blends, polylactides are currently used in 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 manufactured artificially 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 therefore fulfills This Renewable biomass criterion.**

**The manufactured molecular structure of PLA is biodegradable and can also be composted under certain conditions.**

**PLA can also produce microplastics, depending on the situation mechanical properties and environmental conditions.**

# **Compost plastics**

**It is usually not possible to tell at first glance whether a shopping bag or a yogurt cup is made of PLA plastic or another bioplastic. The labeling on the packaging can give you clues. You will often find such information in the advertising claims for the product. But these can also be inaccurate or misleading.**

**The consumer advice 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 made from petroleum can also be biodegradable.**

**You can often tell whether a bioplastic like PLA is biodegradable by the printed logos:**

**The DIN standard logo.**

**The “Seedling” logo for compostable bioplastics that depicts a seedling growing in a circle.**

**There is still no uniform labeling within the EU.**

# Types of Composting:

## 1. Industrial composting:



**Unlike composting at home, industrial composting takes place not in the garden under the influence of natural conditions. In industrial composting, all fluctuations occur. The weather is excluded and therefore always at the optimal level for the process of composting is maintained.**

**This is how the microorganisms can work perfectly and the decomposition of the organic mass is carried out effectively.**

**A significant advantage of these optimal conditions in industrial composting is that so many other 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 colors, labels, etc. - is completely biodegradable and compostable.**



**Normally the (house-made) compost does not reach the required temperatures to ensure a timely decomposition process. Therefore, this label specifically identifies those products that degrade within six months under the prevailing conditions of a compost heap. During this time, at least 90% of the material must have been 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 quality of the compost. This is ruled out using a plant tolerance test.**

