GO!PHA
Global Organization for PHA

UN GLOBAL PLASTICS TREATY
GO!PHA VISION STATEMENT

About Us

Foundation **GO!**PHA is a member-driven, non-profit initiative promoting the use of renewable carbon-based and sustainable materials to help transition to a circular economy

Renewable, biodegradable, and compostable materials provide a unique opportunity to reduce greenhouse gases and environmental plastic pollution while establishing circularity in materials used by offering sustainable, functional, and natural materials that are renewable and offer diverse end-of-life options.

GO!PHA provides a platform for creating and sharing experiences and knowledge and facilitates joint development initiatives using these natural, unique, and innovative materials.

We commend UNEP for laying a robust groundwork for a the Global Plastics Treaty through the Zero Draft. GO!PHA believes that more needs to be done to explore the benefits of suitable sustitutes to plastics, and promote and transition towards circular and sustainable materials that can replace fossil and persistent plastics.

Key Messages

1. Use Renewable Carbon Feedstocks, NOT Fossil Carbon
2. Encourage recycling and reuse via design, waste collection, and infrastructure improvements
3. Promote Compostable Materials to Improve Organic (Waste) Carbon Recycling
4. Use Marine Biodegradable Materials to Eliminate Microplastic Pollution

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Natural and Renewable No fossil carbon

Using renewable materials is essential to transition away from fossil plastics. Products derived from renewable carbon feedstocks, coupled with environmentally friendly production techniques, eliminate the introduction of new (fossil) carbon into the environment. This is crucial in mitigating climate change, pollution, environmental degradation, and social vulnerabilities.

Encourage recycling and reuse via design, waste collection, and infrastructure improvements

Merely labeling materials as "recyclable" is insufficient. Materials and products need to be designed for increased collection and recycling through improved waste management systems and consumer awareness and education. This needs to be encouraged through ambitious targets in this treaty. Renewable biodegradable and compostable materials can be mechanically recycled when they reach substantial volumes.

Promote Compostable Materials to Improve Organic (Waste) Carbon Recycling

Biodegradable and compostable material bags can significantly increase organic waste collection, in addition to them being organically recycled to capture the carbon for reuse as a feedstock and as organic fertilizer, reducing chemical fertilizer use. Composting renewable materials adds no additional carbon to the environment and this must be mandated in this treaty with ambitious targets. Composting is essentially the recycling of carbon, and this fact should be recognized as ‘Recycling”.

Use Marine Biodegradable Materials to Eliminate Microplastic Pollution

There are currently 75 to 199 million tons of plastic in our marine ecosystems [3]. These persistent materials are causing further harm through their production of microplastics. Recent studies point to microplastic generation during use and during recycling [4]. Marine environments provide the appropriate conditions, such as temperature, pH, salinity, and microbial activity, for the biodegradation of renewable and biodegradable materials such as PolyHydroxyAlkanoates (PHA) a biopolymer found in nature. Hence, the global plastics treaty should mandate the use of such materials to mitigate microplastic pollution.

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The UN Environment Programme (UNEP) estimates that 85 percent of the single-use plastic products for food and beverage containers end up in landfills or as unregulated waste [1]. Despite numerous benefits, plastic pollution is causing adverse effects on the environment, society, and health. Therefore, it is imperative that we transition from fossil-based and persistent materials to sustainable and circular alternatives.

What does the move away from fossil-based and persistent plastics mean, and what happens to the existing pollution? Best practices, regulations, green infrastructure, and recycling are essential, and remediating existing plastic pollution will require a wide variety of large-scale solutions and initiatives. We believe that combating plastic pollution requires a major interdisciplinary and holistic strategy that emphasizes innovation in enabling truly circular alternatives. The recently published Ellen MacArthur UNEP report [2] that emphasizes the RRC (Re-use, Recycle, and Compostable) benchmark indicates that the 2025 goals in these areas would be missed, with the "Compostable" mandate being significantly underutilized.

To achieve the goal of reducing and ultimately eliminating the production and use of harmful plastics worldwide, it is essential to adopt biodegradable, compostable, and renewable materials that enable the creation of circular materials and products. The last 40 years have seen considerable advancements in research and development, and manufacturing and use, that have demonstrated the functional and environmental advantages of renewable, biodegradable, and compostable materials compared to fossil-based plastics.

GO!PHA and its members strongly advocate for the inclusion of renewable, biodegradable, and compostable materials as a viable substitute for many fossil-based and persistent plastics in the Global Plastics Treaty.

WHAT SUITABLE SUBSTITUTES ARE	WHAT SUITABLE SUBSTITUTES ARE NOT
Natural and Renewable No fossil carbon	A license to litter
Compatible with circularity design - reusable, recyclable and compostable	A substitute for improper waste management
Biodegradable - in cases when recycling or reuse is not an option	A means to circumvent safe product development standards and regulations
Non-persistent in the environment Microplastics-free	An alternative to reducing superfluous products

References

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About PHA [2-6]
Polyhydroxyalkanoate (PHA) biopolymers are a class of natural materials that have existed for over 2 billion years. Like other natural materials such as wood, cellulose, proteins, and starch, PHA is produced in nature and this natural process (fermentation) is being used to produce them commercially. Being a natural material, PHA is benign to living beings and is marine, freshwater, and soil biodegradable.
PHA is thermoplastic in nature having the attributes of 7 of the top-selling fossil plastics in the world. PHA is being used in many applications to successfully replace fossil plastics [5]. PHA can be recycled for reuse, they are home and industrially compostable, and if they were to leak, they biodegrade in the marine environment, freshwater, and soil. Therefore, PHA does not create microplastics and in some countries, they are even being used as animal feed.