



Recycling and An Article from Austria (FREE)

Michael Stephen, an international expert on bioplastics, shares his thoughts and opinion on important issues impacting the bioplastics industry. Today, Michael writes about recycling and an article from Austria. This is a free Article.



Recycling

I am always amazed that the bio-based lobbyists attack oxo-biodegradable plastic on the ground that it cannot be recycled with ordinary plastics, when they know that it can.

See <https://www.biodeg.org/subjects-of-interest/recycling-2/>

They must also know that if any more than 5wt.% of “compostable” plastics get into an ordinary plastic recycling stream they will damage the resulting recycle. See: Samper, et al (2018). “Interference of biodegradable plastics in the polypropylene recycling process” *Materials*, 11(10), 1–18. The authors say:

[PHA Cosmetic Packaging for Beauty and Hotel](#)

“The current increasing introduction of biodegradable polymers in the food packaging industry can negatively affect the properties of recycled PP if those kinds of plastics are disposed with traditional plastics.... The results revealed that the vicat softening temperature is negatively affected by the presence of biodegradable polymers in recycled PP. Meanwhile, the melt flow index was negatively affected for PLA and PHB added blends. The mechanical properties were affected when more than 5 wt.% of biodegradable polymers were present....”

An Article from Austria

I noticed last week an article on “Polyhydroxyalkanoates – Linking Properties, Applications, and End-of-life Options” by M. Kollerab and A. Mukherjee of the University of Graz, Austria. (Chem. Biochem. Eng. Q., 34 (3) 115–129 (2020))

Yet again, I find here people who do not understand oxo-biodegradable plastics making misleading comments about them, which add to the confusion. They had appended the following definitions to their paper:

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“Degradable or oxodegradable plastic”

“Plastics to which (typically catalytically active) additives have been added to improve the degradability; importantly, such materials do not meet biodegradability and compostability standards. E.g., “Oxobiodegradable plastics” used for PE-based plastic bags do not fulfil the requirements of EN 13432 on industrial compostability, and are therefore not allowed to carry the seedling label. Applies to many petrochemistry-derived plastics, e.g., PE or PP, containing respective additives.”

The authors should know that oxo-biodegradable plastics are not intended for composting, and are not therefore designed to fulfil the requirements of EN 13432 or to carry the seeding label.

Oxo-biodegradable plastics are certified by the OPA, according to ASTM D6954 or equivalent standards, and are designed to deal with the problem of plastic which escapes collection and ends up in the open environment. They do this by causing the plastic to become biodegradable much more quickly than ordinary plastic. Yes, this is a waste, but it is better than allowing the plastic to lie or float around for decades.

Their other definition is “Compostable plastic”

“Bioplastic that has proven its compostability according to international standards (see text) and can be treated in industrial (!) composting plants (does not imply home compostability). Importantly, thickness of specimens may have a significant role in compostability. Generally, plastics are compostable by successfully meeting the harmonized European standards (ISO 17088, EN 13432 / 14995 or ASTM 6400 or 6868), by having a relevant certification, and an according label (seedling label via Vinçotte or DIN CERTCO, OK compost label via Vinçotte, or TÜV in Austria). Applies for PHA, PLA, PBAT, starch, cellulose, proteins.”

What they do not say is that composting of plastics simply converts the plastic into CO₂ – as required by EN13432 and the other standards mentioned. If you can collect a piece of plastic there are better things to do with it than to convert it into CO₂ – this is just intentionally wasting the material and is not consistent with a circular economy.

Michael Stephen

Michael Stephen is a lawyer and was a member of the United Kingdom Parliament, where he served on the Environment Select Committee. When he left Parliament Symphony Environmental Technologies Plc. attracted his attention because of his interest in the environment. He is now Deputy Chairman of Symphony, which is listed on the AIM market of the London Stock Exchange, and is the founder and Chairman of the Oxo-biodegradable Plastics Association.

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