

## "COMPOSTABLE" PLASTIC



1. "This is usually marketed as compostable, but this is deceptive. An ordinary consumer would think that it converts into compost, but the Standards for this type of plastic (ASTM D6400, EN13432, Australian 4736) require it to convert into CO<sub>2</sub> gas within six months. You cannot therefore make compost from it – only greenhouse gas. This process contributes to climate change but does nothing for the soil, and it cannot therefore be described as organic recycling, or "recovery." As to mechanical recycling see 4 below."



2. It does not address the problem of plastic litter in the open environment because the original vegetable materials have been polymerised and have become plastic. It is designed to be taken to an industrial composting or anaerobic digestion unit, and to biodegrade in the special conditions found in those industrial processes, not in the open environment.



3. If it gets into the open environment, it will create microplastics. Even in compost, a study by the University of Bayreuth in 2022 shows that finished compost from composting plants in Germany contains a large number of plastic particles. These will get on to the land and into the food.



4. It cannot be recycled with ordinary plastics because it would contaminate the recycle and make it useless, so anyone who is in favour of recycling should be against it. Even though it is intended for industrial composting, some of this plastic will likely get into the oil-based plastic recycling stream and contaminate it.

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5. It is not suitable for home-composting. The conditions necessary for biodegradation cannot always be maintained by industrial composters, and are very unlikely to be maintained by ordinary householders, who would probably have never heard of the composting standards. They would therefore create microplastics, which could get into the food chain. In any event home-composting is only possible for people who live in houses, not apartments, and those who have a compost pile in their garden would carry their kitchen waste in a bucket – they would not need to buy an expensive plastic bag, which would then be wasted by being converted in CO<sub>2</sub>.



6. By reason of points noted above, compostable plastic is not part of a circular economy.



7. There is no need to use scarce land and water resources to grow crops to make plastic, when it can be made from a by-product of refining oil for fuels, and in the immediate future there will still be a demand for such fuels in most parts of the world. Those land and water resources should be used to produce food for the people in the world who do not have enough to eat. In Brazil for example, the sugar cane cultivated on deforested fields is used to make both biobased polymers and biofuel. The European Parliament has resolved not to encourage the use of land and water resources for producing bio-fuels (and the same reasoning applies to bio-plastics). The UN issued a report to the same effect on 31st March 2014.

Nestlé believes that allocating agricultural land and water to biofuel production will severely impact food and water security. In their view "Forecasts of food production suggest that significant challenges exist for the world to feed future generations... Even a small percentage of crop-based biofuels has a devastating effect on the food market."

The crisis in Ukraine has shown how important it is for every European country to maximise its food production.

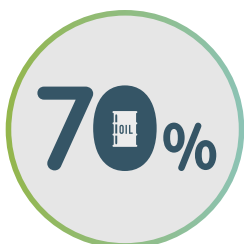
This objection does not of course apply to plastics made from non-food resources, such as the plastic being made by Eranova from marine algae

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8. Plastic marketed as compostable cannot be made by existing plastics factories without making changes to their machinery or buying new machinery, and retraining their workforce. Also, the raw material is more expensive than ordinary polymer.



9. It is not 'renewable' as it can contain 60% or more of oil-based material. Consider also, the non-renewable fossil fuels consumed and CO<sub>2</sub> and other pollutants emitted by the machines used to clear the land, plough the land, harrow the land, sow the seed, make the fertilisers and pesticides and bring them to the farm, spray the crops, harvest the crops, take crops to a polymerisation factory and operate the autoclaves.



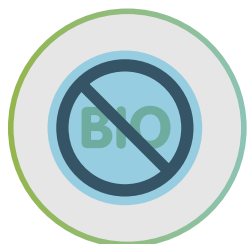
10. The world currently uses 320 million tonnes of plastic per year. There is not nearly enough arable land and water available to grow crops to make enough crop-based plastic to replace ordinary plastic.



11. It is too expensive for everyday use – costing much more than ordinary plastic. Even if this cost were substantially reduced in the future it is far too expensive for ordinary people and for the reasons mentioned in this note there is no justification for subsidising it out of taxpayers money.

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12. It should not be described as “biodegradable” because although it will fragment into microplastics in the open environment it is tested for biodegradation only in the special conditions found in an industrial composting or anaerobic digestion facility.



13. It is not as good as ordinary plastic for shopper bags, which need to be strong and inexpensive, and to be capable of re-use many times before final disposal. For this reason the bio-based content is low – maximum 10%, very often only 5 – 6%. The rest comprises materials with a petroleum origin, or chalk fillers.



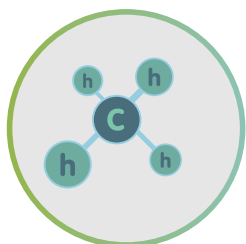
14. It is not suitable for agricultural mulch films because (unlike d<sub>2</sub>w biodegradable plastic) the degradation time cannot be controlled nor can it be controlled in line with the growing cycle.



15. It is usually thicker and heavier than oil-based plastic with the same strength, so it needs more trucks to transport it, using more road space, consuming more fuel and emitting more CO<sub>2</sub> and other forms of pollution to atmosphere.

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16. Deep in landfill it can generate methane, which is a greenhouse gas much more powerful than CO<sub>2</sub>.



17. It is sometimes claimed that the crops being grown to make crop-based plastics will absorb CO<sub>2</sub> from the air, but that would be true of the vegetation which was there before.



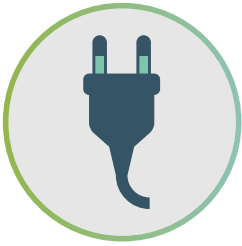
18. It will not comply with the laws of the United Arab Emirates, Saudi Arabia, Jordan, Bahrain and other countries which require short-life plastic goods made in or exported to those countries to be biodegradable in accordance with ASTM D 6954 or similar local standards.



19. An LCA by Intertek published by the UK Government in 2011 and a further LCA by Intertek in 2012 found that ordinary plastic and d<sub>2</sub>w biodegradable plastic have a better LCA than crop-based plastics or paper bags.

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20. If composting is seen as a way to dispose of plastic as an alternative to sending it to landfill this is wasteful, as it creates virtually nothing but CO<sub>2</sub>. Plastic which is not worth recycling should be sent to a modern non-polluting incinerator, where it can be used as a fuel to generate electricity.



21. It is not necessary to use bio-based plastic to send food-waste for processing, and the industrial composters and local authorities do not want it.  
<https://www.biodeg.org/composters-dont-want-compostable-packaging/>



22. A consortium of Friends of the Earth, Surfrider Foundation, Zero Waste Europe, Ecos and the European Environment Bureau published a paper in 2017. Their preference is to reduce, reuse, and recycle, and they say "The bioplastics Industry use their green-sounding credentials to position themselves as helping to speed the reduction in fossil fuel use and solving the ever-growing plastic pollution and marine litter issues. However, there is clear evidence that bioplastics do not solve many of these problems and in fact may create new ones."