Oxo-biodegradable Plastic

This degrades by a process of oxo-biodegradation, initiated by an additive which reduces the molecular weight of the material over a pre-determined period.

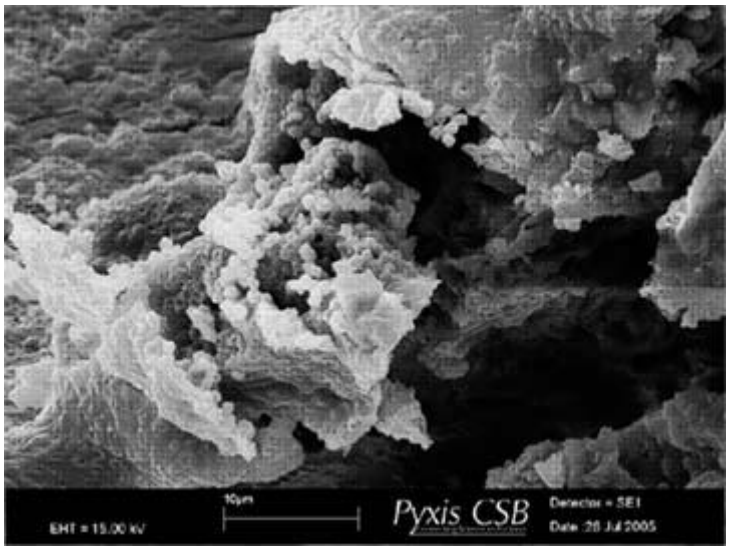
The plastic does not just fragment, but is consumed by micro-organisms after the additive has reduced the molecular weight to sub 40,000 Daltons, and it is therefore "biodegradable." This process continues until the material has biodegraded to nothing more than CO2, water, humus, and trace elements. Oxo-biodegradable plastics are made from a by-product of oil refining which would otherwise be wasted. Oil is a finite resource, but the by-product is available because the world will need fuel for engines for the foreseeable future.

There is little or no additional cost, as it can be made with the same machinery and workforce as conventional plastic. The time taken to degrade can be 'programmed' to a few months or a few years, and until the plastic degrades it has the same strength and other characteristics as conventional plastic. Products are protected from degradation by antioxidants until ready for use, and storage-life is extended by cool, dark conditions.

If people want to incinerate oxo-biodegradable products with heat recovery, or recycle them, or re-use them, then that can be done. The key point is what happens to the plastic which is not collected, and gets into the environment as litter. Conventional plastic will subsist in the environment for many decades, but oxo-biodegradable will degrade in a short time leaving no harmful residues.

Oxo-biodegradable plastic:

- Does not leave fragments of petro-polymers in the soil.
- Passes all the standard eco-toxicity tests.
- Is safe for long-term contact with food.
- Does not contain organo-chlorine, PCBs or "heavy metals."
- Does not emit methane or nitrous oxide, even deep in a landfill. Can be made from recyclate.
- Can be safely recycled.
- Can be composted in-vessel.



Micro-organisms consuming oxo-biodegradable plastic