

EnviroBubble[®]FAQ'S

1. What is oxo-biodegradation of a plastic?

Oxo-biodegradation is a two-stage process in which, first the plastic is converted by reaction with oxygen to molecular fragments that are water wettable and second, these smaller oxidized molecules are biodegraded (converted into carbon dioxide, water and biomass, by microorganisms).



2. How controllable are shelf life and service life?

TDPA[®] additives are formulated in a range of formulations and incorporated at various let down ratios to accommodate a variety of shelf life/service lives and degradation rates. By understanding the environment and conditions in which the final product will be stored and used, the proper additive and percentage needed to manufacture a high quality product with desired performance characteristics and degradability can be recommended.

3. Can TDPA-based plastics be recycled?

Yes. Recycling in-plant materials (trimmings, scrap, etc.) is entirely possible and is regularly practised by EPI's licensees globally, also Recycling post-consumer degradables is entirely possible if they are based on TDPA[®] technology, and provided they have not already started to degrade.

4. What are the end products of degradation and how do they affect the environment?

Polyethylene (PE) containing TDPA[®] additives has been tested extensively and confirmed to leave no harmful or toxic residues after oxidation and biodegradation. The products of biodegradation include carbon dioxide (CO₂), water (H₂O) and biomass, which is primarily the cells of the microorganisms that were responsible for the biodegradation of the disposed product. The products formed during commercial composting were shown to have no negative effects in standard seed germination, plant growth, earthworm and Daphnia ecotoxicity tests. There is no accumulation of residual polymer, polymer fragments or other organic materials. The compost produced has been shown to meet the standards for premium quality.

5. What is the difference between EPI TDPA technology and Starch based Technology?

In specific PLA (Polylactic Acid) starch based technology, the plastic is derived from plant starch. Though this sounds reasonable it has implications including:

- a. Use of fossil fuels to produce the product
- b. Rapid release of CO₂ limiting humus production
- c. High costs compared to commodity PE, PP and PS blended with TDPA (carbon dioxide, water and biomass, by microorganisms).