



Protecting Patients, Equipment and the Environment

Bio Protect – why our product is better.

Bio Protects “oxo-biodegradable” products are an environmentally friendly way of using plastic barriers and other disposables, but

how and why? Bio Protect products are – Totally degradable products made from "normal" polyethylene - the same as most bags - but also contain a percentage by weight of a proprietary patented Oxo-biodegradable additive known as TDPA (totally degradable plastic additives) manufactured by a company called EPI (Environmental Products Inc.). The additives do not affect the strength and capabilities of the plastic for its desired use, but they accelerate the break down process once placed into waste. The additives are non-toxic.

How does the material break down:-

TDPA additives have been formulated so that after the product has been used and discarded, it undergoes oxidative degradation and breaks down into brittle fragments. This happens as a result of exposure to heat or UV light and mechanical stress (or any combination thereof). The plastic molecules become much smaller, water wettable, and microbes can use them as a food source.

Once in **landfill** the microorganisms break it down to Carbon Dioxide CO₂, water, humus (complex organic substance which is important to the fertility of soils), and trace elements (micronutrients which are required by living organisms). They are consumed by microorganisms after the additives have reduced the weight.

Other relevant factors include:-

- Does not leave fragments of petro-polymers in the soil.
- Does not emit methane or nitrous oxide.
- Can be safely recycled.
- Can be composted - Degradable bags are ideal for disposal in landfills. The bags are also designed to degrade in home compost or commercial compost. However, the speed of degradation always depends on the actual location and condition of the compost.

How long it takes to degrade depends on the type of landfill or waste disposal the product ends up in. There is a first stage process whereby the product becomes brittle and fragments into smaller pieces. The speed at which this occurs will depend on the availability of UV light, oxygen, heat and physical stress experienced - all of which can contribute to a speedier chemical transformation in the landfill environment. **However, normally, the degradable barriers take 18-24 months to degrade. The harder plastic items can take up to 3 years.**

The factors of heat, UV light (sunlight) and mechanical stresses are the most common ways in which oxidative degradation is triggered. One or any combination of the above factors is needed to start the degradation process.

Our products have a shelf life of 2 – 5years when stored in a cool dry environment.

“Our products include a range of plastic barriers, suction tips, saliva ejectors, bibs, micro-brush tip applicators and rubbish bin liners at a very competitive price. Customers are always surprised by the price. I think we all expect the things that are better or healthier for us are always going to be more expensive but that’s not the case with our products. “

Visit epi-global.com for more information on oxo-biodegradable plastic