

Oxo-Biodegradable Plastics Association

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EU reg. no. 186937011291 - 26



OPA response to UNEP Report Marine Plastic Debris & Microplastics – Dr P Kershaw – July 16

A recent report published by UNEP (United Nations Environmental Programme) takes a look at the problem of plastic litter in the world's oceans and how it is causing problems for marine animals and ecosystems. There has been a wealth of similar information in the news recently and it is clear that this is a serious problem which demands urgent action. - So it is surprising that the UNEP report contains inaccuracies and omissions about a technology which would actually help to reduce the problem.

Oxo-biodegradable (controlled-life) plastic is totally different from bio-based/compostable plastic and offers a smarter alternative to conventional plastic. It is made from polymers such as Polyethylene and Polypropylene, but it contains an extra ingredient – a metal salt (not a heavy metal) which acts as a catalyst to break down the polymer chains until it the plastic is no longer a plastic and has become a food source for microorganisms on land and sea.

It is indistinguishable from conventional plastic as it is just as strong, flexible, lightweight and waterproof but crucially it is not nearly as long-lived because the life of the plastic bag or packaging can be controlled at manufacture.

Oxo-biodegradable plastic has been studied by scientists for many years, <http://www.biodeg.org/bibliography.html> and it is unfortunate that reports are still being produced without consulting experts in this type of technology. A scientific team from Blaise Pascal University (France's leading research centre into degradable plastics) took issue with the erroneous 'not very expert reports' and misinformation by which the EU had been misled on the issue of oxo-biodegradable plastic [http://www.biodeg.org/CNEP%20Stmt%20Nov%202014%20\(En\)-Lemaire%20appvd\(1\).pdf](http://www.biodeg.org/CNEP%20Stmt%20Nov%202014%20(En)-Lemaire%20appvd(1).pdf).

The author of the UNEP Report, Dr Peter Kershaw is a geologist - not a polymer scientist – and he has declined our offer to facilitate a meeting with academic experts in this field.

If oxo-biodegradable plastic merely fragmented without biodegrading, CEN (the European authority for Standardization) would not have defined oxo-biodegradation as “degradation resulting from oxidative and cell-mediated phenomena, either simultaneously or successively” and the American, British and French standards organisations would not have included tests for biodegradability in ASTM D6954, BS8472 and ACT51-808.

The UNEP report goes on to claim that mixing oxo-biodegradable plastic with normal plastic may compromise the properties of newly synthesized polymer. This is true of the bio-based “compostable” plastics, but not true of oxo-biodegradable, and there have been several expert reports which make it clear that oxo-biodegradable plastic can be recycled with conventional plastic without detriment to the resulting product. <http://www.biodeg.org/recycling.html>

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The purpose of controlled-life plastic is that if it escapes collection and ends up in the open environment, it will oxidise and biodegrade in the same way as nature's wastes only quicker, and leaving nothing behind - no toxic residues or fragments of plastic. It is therefore less able to accumulate on land or sea. Less plastic on land means less plastic finding its way into the world's oceans and any plastic that does get into the sea will not float around for decades before it becomes benign.

Oxo-biodegradable plastic can be made by existing plastics factories with their existing workforce and machinery at little or no extra cost. It would be helpful if politicians and academics kept an open mind and took a serious look at a technology that could be making a difference right now. Already several countries in Africa, Asia and the Middle East have made the technology mandatory.