# OXO-BIODEGRADABLE PLASTICS ASSOCIATION

An Incorporated not-for-profit Association
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This is a response to the letter dated 27th May 2014 to the National Association of Self-service and Department Stores (NASDS) from Braskem and two other polymer-resin suppliers.

We are surprised by the negative attitude shown to oxo-biodegradable technology in this letter, which must be due to a lack of understanding. We are surprised because use of the technology would defend the resin-suppliers and their manufacturing customers from complaints from politicians and environmentalist around the world that their products should be banned because they can lie or float around in the environment for many decades.

We are aware that Braskem are hostile to oxo-biodegradable plastic because they are suppliers of a polymer made from vegetable sources, but their position is not rational. Their product it is not biodegradable and oxo technology is not in competition with them. Indeed their product would benefit from the inclusion of oxo-biodegradable technology.

We understand that the Director at Dow who was responsible for the letter was soon thereafter employed by Braskem, and that Dow Brasil, who control Dow Mexico are upset that the name of Dow has been used for this attack. On 25th August Dow clarified that they are not against oxo-biodegradable plastic and that as they are not experts in EU law they are not qualified to comment on activity in the European Parliament. We do not know why Pemex signed the letter.

It seems that the authors of the letter do not understand why oxo-biodegradable plastic is necessary, and why NASD members and other responsible companies in Mexico and around the world have adopted it in order to protect the environment for future generations. The reason is that it is not possible to collect all the plastic waste for responsible disposal, and that some of it will always escape into the environment from which it cannot realistically be collected. If this were not a serious problem there would be no demands from politicians and environmentalist around the world to ban plastic bags.

In order to address this problem, oxo-biodegradable plastic technology was created by eminent polymer scientists from UK, France, Sweden, Italy, Canada, Australia and Brazil. It is designed to convert at the end of the useful life of the plastic product into a biodegradable material, which can be bioassimilated in the same way as a leaf by bacteria and fungi commonly found in the open environment. [1]

It converts by an abiotic process in the presence of oxygen into a biodegradable material, which then biodegrades on land or water without leaving harmful substances or fragments of plastic. The only condition for the degradation is oxygen (moisture is not necessary). Nor are light or high temperatures necessary, but they will accelerate the process. It is designed NOT to degrade deep in landfill rubbish dumps and will not therefore generate

[1] See http://www.biodeg.org/files/uploaded/biodeg/Relevance%20of%20deg%20plastic%20-%20Jun%2014.pdf




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methane (unlike bio-based plastics). Methane is a dangerous greenhouse gas much more powerful than $CO_2$.

If oxo-bio plastic merely fragmented without biodegrading, the American and British Standards authorities would not have included tests for biodegradability in ASTM D6954 and BS8472. It is therefore correct to describe this type of plastic as oxo-biodegradable, and the process is officially defined by CEN – the European Standards Organisation as "degradation resulting from oxidative and cell-mediated phenomena, either simultaneously or successively."

It has been studied by scientists for many years, and all reputable suppliers of oxo-biodegradable products should be able to provide their customers with independent proof according to the test methods prescribed by ASTM D6954 or BS8472 that that product degrades and biodegrades, and that it is not eco-toxic. Those tests will have cost many thousands of dollars and they will not necessarily be made available to their competitors by publication.

Governments of countries in Africa, Asia and the Middle East with a combined population of more than 200 millions know that they cannot collect all the plastic for recycling or other forms of responsible disposal. For that reason they carefully considered the effectiveness and safety of oxo-biodegradable technology before passing legislation which makes it mandatory to use the technology. Other countries will be following their example, and it is no longer possible to export a wide range of products to those countries unless they are oxo-biodegradable.

In February 2011 the UK Environment Agency published a Life-cycle Assessment[2] which showed that ordinary plastic bags have a better LCA than paper or compostable bags. In March 2012 Intertek wrote another LCA[3] which put the environmental credentials of oxo-biodegradable plastic ahead of conventional and compostable plastic.

At the end of the abiotic phase the material is no longer a plastic. It has also become polar so that it will stick to the earth and will be much less likely to blow around as dust than would fragments of conventional plastic. It also has to pass the tests prescribed by ASTM D6954 and BS8472 to show that it contains no heavy metals.

We often hear it said that degradable plastics should not encourage or excuse poor consumer waste-management behaviour such as littering. There is however no evidence that oxo-biodegradable plastic encourages littering and it is certainly not self-evident. This is because it is not possible to distinguish an oxo-bio product from a conventional product by appearance, feel, or smell. Even if there were a label, the type of people responsible for littering are not likely to look for a label before deciding to throw their plastic waste out of a car window.

With regard to recycling, the OPA agrees that plastic should be recycled if it can be collected, provided it makes economic and environmental sense in the particular circumstances. Therefore, in 2012 Roediger laboratories conducted a series of tests to ascertain whether oxo-biodegradable plastic bags could be recycled with conventional plastic in a post-consumer waste stream without the need for separation, and concluded that they could.[4] Roediger are an analytical laboratory specialising in the chemical and physical testing of polymers.

[2] http://degradable.net/files/uploaded/Carrier_Bags_Report_EA.pdf
[3] http://www.biodeg.org/files/uploaded/Intertek_Final_Report_15.5.12(9).pdf
[4] http://www.biodeg.org/files/uploaded/biodeg/executive_summary/ROEDIGER%20REPORT%2021%20May%202012.pdf

In 2013 Roediger examined the Austrian TCKT report,[5] and said that while the report made it clear that vegetable-based 'compostable' plastics cannot be safely recycled with oil-based plastics "we have no reason to change our 2012 opinion that plastic products made with oxo-biodegradable technology may be recycled together with conventional oil-based polymers without the need for separation and without any significant detriment to the newly-formed recycled product."

In the last two years alone, enough masterbatch has been sold to make 600,000 tons of oxo-biodegradable plastic products. We know that these products have been successfully recycled for the past 10 years by our members and their customers around the world, and in those ten years we have heard no reports of any difficulty encountered.

Our experience is entirely consistent with the Roediger report, that oxo-bio plastic can be safely recycled, and recyclers have presented no technical evidence and no experience to the contrary.

With regard to European Legislation, the letter contains a misleading statement. There is at present no such EU legislation, and the legislative proposals from the EP to which they refer are unlikely to be accepted by the Council and the Commission.

[5] http://www.biodeg.org/files/uploaded/biodeg/executive_summary/Roediger%20on%20TCKT%20Rept%205%20Dec%20'13.pdf