



12th May 2020

The Hon. Jonathan Wilkinson PC, MP,
Minister for the Environment and Climate Change,
Ottawa,
Canada K1A 0H3

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Dear Minister,

Thank you for your letter of 25th March offering a discussion with your officials on the contribution which oxo-biodegradable plastic (as distinct from oxo-degradable plastic) can make to protecting the environment from the accumulation of plastic litter and microplastics.

We have not yet been contacted by your officials, but we are of course mindful of the demands which the coronavirus epidemic has placed on the public service in many countries. We are continuing to function normally ourselves, thanks to the Zoom teleconferencing facility which has enabled us to work remotely, and talk with people all over the world rather more easily than before the epidemic.

Whilst my letter to you was about oxo-biodegradable plastic technology, we have since then experienced a high level of interest in our antimicrobial technology, which makes it possible to manufacture everyday plastic items so that they are lethal to dangerous micro-organisms. See www.d2p.net

The coronavirus has shown us that consensus among scientists is hard to find, but it seems to me that leaders cannot wait for consensus when decisions have to be made, because leaders have to weigh the evidence and form a view as to what, on balance, is the best course to take.

So it is with the environment. It is well known that thousands of tons of plastic are getting into the open environment every day, and that we may soon have more plastic in the ocean than fish, but what are governments doing about it? They are trying to reduce the amount of plastic we use, but the virus has taught us that single-use plastic is essential to protect us from contamination and the spread of disease, and in many countries, single-use plastic bans are being overturned or suspended. The problem remains however that some of this plastic will get into the open environment.

As indicated in my letter, oxo-biodegradable plastic is a technology which makes ordinary plastic biodegrade if it gets into the open environment instead of lying or floating around for decades, and it has been used successfully around the world for more than 20 years. It has been used by the largest bakery in the western world for more than 10 years with no problems, but only a very few forward-looking governments have made it compulsory. What are the rest doing? They prefer to encourage recycling and composting, but these will not help them to deal with plastic in the open environment which cannot realistically be collected.

So why are they not all making oxo-biodegradable plastic mandatory, and instead allowing ordinary plastic to continue in use? In some cases because they are under inappropriate pressure from multinational commercial interests, and in others because there is no complete consensus among the scientists. There is however in my view sufficient consensus to enable a decision to be made. There is consensus on the following points:

1. Ordinary plastics fragment into microplastics under the influence of weathering, but for many decades their molecular-weight remains too high to allow biodegradation .
2. Adding a pro-degradant catalyst at manufacture reduces the molecular-weight much more quickly if the plastic escapes into the open environment.
3. The only environmental conditions necessary for oxo-biodegradation are oxygen and bacteria, both of which are ubiquitous in the open environment. Sunlight and heat will accelerate the process but are not essential
4. Bacteria found on land and sea are able to consume the low molecular-weight residues of plastic.
5. These residues are not toxic
6. There are Standards in the USA (ASTMD6954), the UK (BS8472), France, (T51-808) the UAE (5009/2009) and elsewhere which are suitable for testing oxo-biodegradable plastic.

Disagreement remains about:

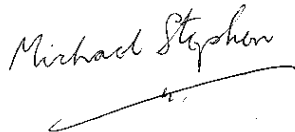
7. How long it takes before the plastic becomes biodegradable. That depends on variable factors, and for that reason a broad indication only can be given as to timescale. It is known that conventional plastic fragments do not become biodegradable for many decades, but it is possible to say with certainty that at any given time and place in the open environment an oxo-biodegradable plastic item will become biodegradable significantly more quickly than an ordinary plastic item. That is the point. - Do we want ordinary plastic which can lie or float around for decades, or oxo-biodegradable plastic which will be recycled back into nature much more quickly? Of course, we don't want plastic in the environment at all, but that is not the present reality.
8. Will it fully biodegrade? It is known that plastic whose molecular weight has been reduced is much more likely to fully biodegrade than ordinary plastic, but we have heard no reasons from any scientist why, once degradation has commenced, it should not continue until biodegradation is complete. Moreover, if only 50% of it degraded, that would still be a lot more than with ordinary plastic. It is possible to test for degradation in the natural environment, and it has been done at the Bandol facility in France, but it is futile to

expect scientific testing for biodegradation in the open environment because it would be impossible to measure CO₂ evolution under those conditions. Scientists have therefore devised laboratory protocols over many years which simulate the natural process of biodegradation – for example Tier 2 of ASTM D6954.

In summary therefore there seems to me to be sufficient consensus to enable decision-makers to conclude that oxo-biodegradable plastic is better than ordinary plastic, and to decide to stop plastic accumulating in the environment, by requiring it to be oxo-biodegradable. Delay about this is no longer an option, because thousands of tons of plastic are getting into the open environment every day.

If your officials would give me a date and time when they would be available for a Zoom conference, my office will make the necessary arrangements.

Yours sincerely,



MICHAEL STEPHEN
Deputy Chairman

(Member of the Environment Select Committee of the UK Parliament 1994-97)