

8<sup>th</sup> December 2010

The Secretary,  
Federal Trade Commission,  
Room H-135 (Annex J)  
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USA

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Sir,

**COMMENTS ON PROPOSED REVISED GREEN GUIDES  
16 CFR Part 260 PROJECT P954501**

**ABOUT SYMPHONY ENVIRONMENTAL TECHNOLOGIES PLC**

1. Symphony is a British Public Company quoted on the AIM market of the London Stock Exchange (SYM:LSE) with an ADR facility in New York (SEPTY:PKC). Symphony specialises in Controlled-life oxo-biodegradable plastic, and anti-microbial plastics. It has 59 Distributors around the world, and is represented in 92 countries. The Chairman is a Member of the European Parliament, and the Board includes a former Member of the UK Parliament.
2. Symphony has its own laboratories in England with the latest equipment, where it tests and develops its products. They are manufactured under licence by carefully selected companies in several countries, including shortly the United States.
3. Symphony is a member of the Oxo-biodegradable Plastics Association ([www.biodeg.org](http://www.biodeg.org)), the Society for the Chemical Industry (UK), the American Society for Testing and Materials (ASTM), the British Plastics Federation (BPF), and the European Organisation for Packaging and the Environment (EUROPEN). Symphony holds an ISO 9001-2008 certificate for quality management, and is represented on the British Standards Institute, the International Standards Organisation (ISO) and the European Standards Organisation (CEN)
4. Symphony's Technical Department has more than 30 years experience in the manufacture of plastic products.

**SYMPHONY'S d<sub>2</sub>w OXO-BIODEGRADABLE PLASTIC TECHNOLOGY**

5. Plastic is a very useful material which is indispensable for modern life, but the problem is that it can lie or float around for decades if it gets into the environment. Symphony has developed a low-cost insurance. It is a special formulation called d<sub>2</sub>w which is added to the plastic when it is being made. It breaks the molecular chains within the polymer and makes the plastic self-destruct in the presence of oxygen on land or water at the end of its service-life, but until then it has no effect on the product, which can be re-used many times.

6. d<sub>2</sub>w plastic can be made to degrade in whatever approximate timescale is desired, from as little as six months onwards, leaving at the end of the process no fragments nor “heavy metals” and without emitting methane, even when buried in landfill. It can be recycled with normal plastics (see <http://www.biodeg.org/position-papers/recycling/?domain=biodeg.org>), or incinerated for energy-recovery. d<sub>2</sub>w is certified safe for food-contact and has been proved not to be eco-toxic
7. For a video of d<sub>2</sub>w plastic film degrading, see <http://www.youtube.com/watch?v=i3TGqcpWJTM>
8. When plastic products containing d<sub>2</sub>w have fragmented, with a molecular-weight of 10,000 or less, they are no longer plastic. They then have a completely different molecular structure, and can be bioassimilated in the same way as a leaf.
9. d<sub>2</sub>w Controlled-life Plastic products are made from a by-product of oil or gas which used to be wasted, so nobody is importing extra oil to make them. They can be made with the same machinery and workforce and the same polymers, as ordinary plastic so there is no need to disrupt the supply-chain and there is little or no on-cost and no loss of jobs.
10. They are now being used by major companies around the world, and last year Symphony sold enough d<sub>2</sub>w to make 8 billion plastic products.

## THE PROPOSED REVISIONS

### “Local Facilities”

11. A fundamental point is that the existing Green Guide concerns itself not only with (a) the characteristics of the product and/or its packaging (e.g. is it compostable, is it recyclable can it be safely incinerated etc.) but also with (b) whether in the particular locality where purchased it can actually be composted or recycled or incinerated.
12. We have no difficulty with (a) because consumers are of course entitled to know the characteristics of the product but (b) is completely impractical. Much of the goods sold in the United States are sold on a national basis, and thousands of tonnes of identical packaging are manufactured and printed for the brand-owner for national distribution. Some of these goods and their packaging will be sold in places where suitable composting or recycling or incineration facilities exist, but some will not, and it is impossible for the marketer to know which piece of packaging will be sold in which place. Even if he did, it is simply not practical to print different packaging for sale in different cities, towns, and districts; and goods could in any event be bought in a place where facilities exist, and then taken away and disposed of in a place where no such facilities exist. Even if the facilities existed on the date the package is printed, they may not exist even in that locality when it is disposed of.
13. The revised guide should therefore be amended so that it would no longer be considered deceptive to market goods or packaging as recyclable or capable of incineration just because no suitable facilities exist at the time and locality where the goods are purchased.
14. American consumers are possessed of common sense, and expect to be treated as adults. If they are interested in whether recycling or incineration facilities exist in

the place where they intend to dispose of goods or packaging it is not unreasonable to expect them to find out for themselves by searching Google or their local Yellow pages.

15. It is impractical and oppressive to expect marketers to compile detailed databases of all the recycling and composting and incineration facilities in the United States, and to keep them up to date, and to make them available via freephone numbers. This is something which should perhaps be done by a public authority, but even then, the information may not be available to the consumer at point of sale.

#### “Oxo-biodegradable”

16. It is indicated at page 63569 of the Proposal for Revision that “the Commission proposes addressing oxo-degradable claims in the guides” but before doing so the Commission needs to have a full understanding of this technology, and should consult the distinguished Chairman of the Scientific Advisory Board of the Oxo-biodegradable Plastics Association ([www.biodeg.org](http://www.biodeg.org)). The Commission should not rely on scientists whose published work is on bioplastics - which biodegrade by a completely different mechanism - nor rely upon the bioplastics trade associations such as the “Biodegradable Products Institute” (BPI) or “European Bioplastics” whose expertise is in bioplastics and whose commercial interests are against oxo-biodegradable plastics.
17. Oxo-degradation is defined by CEN (the European Standards Organisation) in *TR15351* as “*degradation resulting from oxidative cleavage of macromolecules*” and oxo-biodegradation as “*degradation resulting from oxidative and cell-mediated phenomena, either simultaneously or successively.*”
18. It would therefore be deceptive to describe a product as “oxo-degradable” if it is in fact “oxo-biodegradable.”
19. As indicated above, when the d<sub>2</sub>w additive has reduced the molecular weight of the plastic to 10,000 Daltons or less it does not just fragment. At that stage it is no longer a plastic. It has become a harmless material which can be bioassimilated by naturally-occurring micro-organisms in the environment, and it is therefore biodegradable. Independent test have proved that it is not toxic.
20. There are suites of Standards which have been developed by ASTM, by ISO, and by CEN, which are suitable for testing bioplastics, but there is only one American Standard (ASTM D 6954) suitable for testing oxo-biodegradable plastics. There are no ISO or European standards suitable for oxo-biodegradable plastics, but standards have recently been developed in the United Arab Emirates and are being developed in other countries.
21. One of the advantages of oxo-biodegradable plastic is that it can be programmed to degrade then biodegrade in different timescales according to the purpose for which the plastic product is intended. This timescale will often be longer than one year, but will always be shorter than that for ordinary plastic of the same polymer type, and will usually be shorter than nature’s wastes such as straw and twigs.
22. Another advantage of oxo-biodegradable plastic is that it can be recycled in the same stream as ordinary plastics of the same polymer type eg polyethylene, polypropylene or polystyrene (see <http://www.biodeg.org/position-papers/recycling/?domain=biodeg.org>). Most of the bioplastics cannot be recycled

except with themselves. The processes by which any type of plastic (whether oxo-biodegradable or not) can be recycled are of some technical complexity, but it is for the recycler, not the consumer to be aware of those factors.

23. Oxo-biodegradable plastic can also be safely incinerated in a modern incinerator to recover the inherent energy, and it has a high calorific value.
24. The consumer is entitled to know the characteristics of the plastic, but many packages will not have enough room for a lengthy description. We would therefore suggest that oxo-biodegradable plastic should bear the logo and website address of the additive-supplier and be labelled as follows: *"This packaging is made with oxo-biodegradable technology, to last a much shorter time in the open environment than ordinary plastic. For further information see www.?????"*

#### "Compostable plastic"

25. As indicated above there are standards (eg ASTM D6400 and EN13432) designed for testing bioplastics which are intended for industrial composting, but the Commission doubts (page 63571) that these standards substantiate compostable claims. Moreover, these standards require the plastic to convert itself to CO<sub>2</sub> gas within 180 days, so it contributes to climate change but is of no value in compost. Also, most of the bioplastics cannot be recycled together with ordinary polymers such as polyethylene, polypropylene and polystyrene. They can also emit methane in anaerobic conditions, and methane is a greenhouse gas 23 times more powerful than CO<sub>2</sub>.
26. The packaging manager of Tesco (Britain's largest supermarket) said on 20th October 2009 that the supermarket *"does not see the value in packaging that can only be industrially composted"* and that *"city authorities do not want it, as it can contaminate existing recycling schemes."*
27. In June 2009 Germany's Institute for Energy and Environmental Research concluded that oil-based plastics, especially if recycled, have a better Life-cycle Analysis than bioplastics.
28. These are all factors which the consumer needs to know
29. Accordingly the revised Guide should require bioplastics which comply with the above compostable standards to bear a notice informing consumers that they are intended for industrial composting and will not readily biodegrade in the open environment or in home compost; that they will convert to CO<sub>2</sub> gas within 180 days, that they contribute little or nothing to the compost, that they cannot be recycled together with ordinary plastics, and that they can emit methane in landfill.
30. It would be deceptive to describe most types of compostable plastics as "biodegradable," because they will readily biodegrade only in the special conditions found in industrial composting.

#### "Renewable"

31. For the reasons referred to on page 63586/7 of the Proposal for Review, it would be deceptive to describe a bioplastic as "renewable."

32. It is true that the corn or other crops from which the plastic is derived can be grown year after year, but the consumer is entitled to be informed by the marketer that the process of making the plastic from crops is a significant user of non-renewable fossil-fuel energy and a producer therefore of greenhouse gases. Fossil fuels are burned by the agricultural machinery and road vehicles employed; also by the manufacture and transport of fertilisers and pesticides. Electrical energy derived from fossil fuel is also consumed by the autoclaves used to ferment and polymerise material synthesised from biochemically produced intermediates (e.g. polylactic acid from carbohydrates etc).

See [http://www.biodeg.org/files/uploaded/biodeg/Hydro-biodegradable\\_Plastic\\_Production\\_Process.pdf](http://www.biodeg.org/files/uploaded/biodeg/Hydro-biodegradable_Plastic_Production_Process.pdf)

33. Further, some bioplastic products contain up to 50% of synthetic plastic derived from oil, and others (e.g. some aliphatic polyesters) are entirely based on oil-derived intermediates

“Landfill”

34. The primary purpose of oxo-biodegradable plastics is not degradation in landfill. They are designed to address the problem caused by plastic waste which gets accidentally or deliberately into the open environment instead of being collected for recycling, incineration or other purposes. Everyone knows about the “great Pacific garbage patch” - which would not be there if the plastic had been oxo-biodegradable. Everyone is also aware of a major plastic litter problem in the US and many cities and counties are seeking to ban the use of normal plastic products for that reason

35. On 18<sup>th</sup> July 2008 Dr. Caroline Jackson MEP (immediate past-Chairman of the Environment, Public Health, and Food Safety Committee of the European Parliament, and the Rapporteur for the EU Waste Framework Directive) issued a press statement as follows:

36. *“Legislation has tended to concentrate on waste which can be collected; and to encourage people to reduce, re-use, and dispose responsibly of their waste, by recycling, incineration with energy-recovery, or by other disposal routes. However, we also need to take account of the fact that we will never succeed in collecting all the waste and that some may remain to disfigure the landscape. This is particularly the case with plastic waste, from errant supermarket bags to agricultural plastic. Where this goes uncollected it can accumulate in the environment, polluting the land and the oceans for many decades, and perhaps for hundreds of years.”*

37. It is wasteful to send plastic (whether oxo-biodegradable or not) to landfill because the energy contained within the plastic is equal to the energy in the oil or gas from which the plastic was made. It should instead be sent to a modern incinerator where the energy can be captured, and used to reduce fossil-fuel consumption. People who expect their plastic waste to end up in an incinerator would not be deceived if it were labelled “degradable” or “biodegradable” because no reasonable person would expect it to degrade in an incinerator.

38. In most countries around the world most of the plastic waste is still disposed of in landfill, and most people with reasonable awareness know that it is. It is well known, (see page 63568) that waste does not degrade well in landfill, and it is not normally desirable that it should. This is because landfill operators do not want

methane to be emitted unless the landfill is designed to collect the gas, which most are not.

39. However, Oxobiodegradable plastic will degrade in landfill where oxygen is present (sometimes trapped in the very plastic bag which is degrading) and the resulting fragmentation will save space. Oxo-biodegradable plastics will not emit methane, but bioplastics may emit methane in anaerobic conditions.
40. When a consumer buys a plastic product he may think it likely that the product he has just bought, and/or its packaging, will end up in landfill, but he cannot be sure. That is why in the 92 countries in which Symphony operates worldwide, people are increasingly demanding that all short-life plastic products and packaging are made from oxo-biodegradable plastic, so that they will harmlessly biodegrade if they do get into the open environment.
41. The consumer therefore needs to know whether the plastic is biodegradable, but the existing Guide prevents him from being told that it is biodegradable.

“California”

42. It is extraordinary that State law in California prohibits a marketer from telling the consumer that the oxo-biodegradable plastic product he has just bought is degradable or biodegradable. This is an issue which the FTC should address with the authorities in California.

Symphony Environmental Technologies Plc would be willing to serve as a Workshop Panellist.

Yours sincerely,

**Michael Laurier**  
Chief Executive