

# ECM BIOFILMS

Friday, December 10, 2010

Mr. Jon Leibowitz, Chairman  
Ms. Julie Brill, Commissioner  
Mr. William E. Kovacic, Commissioner  
Ms. Edith Ramirez, Commissioner  
Mr. J. Thomas Rosch, Commissioner  
Federal Trade Commission  
Office of the Secretary, Room H-135(Annex J)  
600 Pennsylvania Avenue, NW  
Washington, DC 20580

VIA E-MAIL TRANSMISSION AS A \*.PDF FILE

Re: Proposed, Revised Green Guides, 16 CFR Part 260, Project No. P954501

Dear Chairman Leibowitz and members of the Commission:

ECM BioFilms, Inc., is pleased to offer these comments in response to the Federal Trade Commission's Proposed, Revised Green Guides (16 CFR Part 260, Project No. P954501). Our interest in the Federal Trade Commission (FTC) Proposed, Revised Green Guides ("Proposed Guides") focuses specifically on the Degradable Claims section of the Proposed Guides (Section V, Subsection C – Federal Register/Vol. 75, No. 199, pages 63568 – 63570) and Section 260.8 (Federal Register/Vol. 75, No. 199, page 63603).

We feel that the FTC has been misinformed concerning the status of the nation's landfills and the role that truly biodegradable plastic products can have once they are disposed of there.

Concerning the following two FTC statements:

**Section V, Subsection C, paragraph 2 (hereinafter designated in the following manner: "V.C.2.")**

Although supporting the current guidance, commenters suggested four modifications. First, many stressed that typical solid waste disposal treatments inhibit degradation. Procter & Gamble summed up these views, stating "[i]n the United States, solid waste is predominantly disposed of by incineration or in a landfill, where little or no degradation occurs."

**V.C.4.a.**

The Commission proposes revising the Guides to clarify that unqualified degradable claims are deceptive for products or packages destined for landfills, incinerators, or recycling facilities. Federal environmental regulations require landfills to minimize interaction with water, oxygen, and light. Absent a robust supply of these elements, decomposition is severely retarded.

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We do not know how these and other similar statements in the document can unequivocally be made. If this is the case, the US EPA is working, worldwide, on a spurious program. One may think that once waste is disposed in a landfill it is buried never to be made use of again, but this is far from the truth. Much of the waste accepted by landfills is organic based and in the landfill these organic materials, including truly biodegradable plastics, anaerobically biodegrade to produce landfill gas [LFG], a gas rich in methane.

According to 2008 US EPA data, 64% of the 250 million tons of municipal solid waste was composed of organic materials<sup>1</sup>. Even though plastics are made from organic hydrocarbons sources, because they traditionally have not been biodegradable, the EPA does not categorize them as such. With the availability now of technologies that can make them biodegradable, this will add another 12% to the organics available in landfills.

LFG is the natural by-product of the decomposition of solid waste in landfills and is comprised primarily of carbon dioxide and methane, which are the by-products of the anaerobic biodegradation of organic waste. With methane being a potent greenhouse gas, its emissions must be addressed by the landfill operator. Rather than flare off the LFG as waste, the US EPA has established the Landfill Methane Outreach Program (LMOP), a voluntary assistance and partnership program that promotes the use of LFG as a renewable, green energy source<sup>2</sup>.

Per the U.S. Environmental Protection Agency Landfill Methane Outreach Program (April 2010)<sup>3</sup>;

- At least 519 operational projects in 46 states annually supplying **13 billion kilowatt-hours** of electricity and **100 billion cubic feet** of LFG to direct-use applications
- Estimated 2010 **Annual Environmental Benefits**
  - Carbon sequestered annually by **~19,800,000 acres of pine or fir forests**, or
  - CO2 emissions from **~216,000,000 barrels of oil consumed**, or
  - Annual greenhouse gas emissions from **~17,700,000 passenger vehicles**
- Estimated **Annual Energy Benefits**
  - Powering more than **940,000 homes** and heating more than **722,000 homes**.

And these numbers do not even include the availability of biodegradable plastics which can increase these values significantly.

The World Bank also recognizes that landfills support biodegradation and generation of gas. In the document Guidance Published in May 1996 by the World Bank as an Urban Infrastructure Note, updated November 2004<sup>4</sup> it states, "A sanitary landfill is a contained and engineered bioreactor and

<sup>1</sup> <http://www.epa.gov/epawaste/nonhaz/municipal/pubs/mwsw2008rpt.pdf>

<sup>2</sup> <http://www.epa.gov/lmop/index.html>

<sup>3</sup> <http://www.epa.gov/lmop/documents/pdfs/overview.pdf>

<sup>4</sup> Guidance Published in May 1996 by the World Bank as an Urban Infrastructure Note, updated November 2004, Sanitary Landfill Design And Siting Criteria

attenuation structure, designed to encourage anaerobic biodegradation and consolidation of compacted refuse materials within confining layers of compacted soil.”

The US army has published Engineering Technical Letter, ETL 1110-1-160<sup>5</sup>, to address LFG emissions. The purpose of the letter is to provide information and procedures necessary for the design of systems to monitor, collect, characterize, transport, and treat off-gas from municipal, industrial and hazardous waste landfills.

There are currently about 2400 landfills in the United States. Of these 519 are operational LMOP landfill projects generating energy. There are 64 under construction and 520 candidate landfills, i.e., landfills that meet the landfill gas energy criteria or are in the actual planning stage. With another near 1300 potential landfills (those that could have landfill gas energy project potential based on site-specific needs or if data were complete) the trend is to have more energy generating landfills constructed in the future.<sup>6</sup>

By taking the gas of the biodegradation process, that otherwise would have been burned off at the landfill site, and diverting it to create energy for factories and heating homes, the need to extract energy from other, non-renewable sources is avoided. In this way greenhouse gas emissions are responsibly reduced and renewable energy source is provided. Is this not an environmentally sound approach to disposing of truly biodegradable plastics? It certainly is more environmentally sound than the use of traditional or compostable plastic which will never provide a benefit.

Concerning the following four FTC statements:

#### V.C.3.

FTC staff has subsequently reviewed the underlying questionnaire and data from the APCO survey. Using a widely-accepted methodology, the survey asked 1,000 Americans about unqualified biodegradable and compostable claims. It found that 60 percent of consumers believed that a biodegradable package will disappear in one year or less. Additionally, 83 percent of consumers believed a biodegradable item will decompose even when disposed in a landfill. The Commission is unaware of additional consumer perception data on degradable claims.

#### V.C.4.a.

Second, the APCO survey found that 60 percent of consumers expect biodegradable solid waste to decompose in one year or less. Accordingly, the Commission proposes adopting a maximum period of one year for complete decomposition of solid materials marketed as degradable without time qualification. The Commission requests comment on whether this one year period may lead to deceptive claims where consumers would expect a material to degrade in a much shorter time frame – e.g., a plant pot decomposing fully in a single growing season.

#### V.D.4.c.

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<sup>5</sup> Publication Number: ETL 1110-1-160 Title: Engineering and Design - Landfill Off-Gas Collection and Treatment Systems Publication Date: 17 Apr 95

<sup>6</sup> <http://www.epa.gov/lmop/projects-candidates/index.html#map-area>

Specifically, the Commission restates the position it articulated in its 1998 Green Guides review and proposes adding it to the compostable section.<sup>230</sup> That is, “timely manner” means that the product or package will break down in approximately the same time as the materials with which it is composted, e.g., natural plant matter.

#### VIII. § 260.7 Compostable Claims

(b) A marketer claiming that an item is compostable should have competent and reliable scientific evidence that all the materials in the item will break down into, or otherwise become part of, usable compost (e.g., soil-conditioning material, mulch) in a safe and timely manner (i.e., in approximately the same time as the materials with which it is composted) in an appropriate composting program or facility or in a home compost pile or device.

How long will it take this plastic to biodegrade, certainly longer than one year, and it will take the other organic materials, like food scraps and sludge, more than one year to biodegrade in a landfill too. But is it biodegrading after a year, yes it is, and “significant CH<sub>4</sub> production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer”. Biodegradation will occur and it will occur at a rate comparable to the other organics in the landfill, just as composted materials “will break down in approximately the same time as the materials with which it is composted, e.g., natural plant matter.” (V.D.4.c. and VIII. § 260.7(b) Compostable Claims)

It is not equitable that a compostable material may decompose at the same rate as other composting materials with which it is processed, but materials that biodegrade are held to a preconceived notion derived from a of consumers survey. Did the survey ask the consumer if they understood how materials biodegrade? Did they make any reference to how long it would take a leaf, branch or stick to biodegrade? Certainly if they were posed with these questions first they would not respond that something should totally biodegrade, disappear, in a year.

It is quite conceivable that a substantial item would not biodegrade into it elements in one year, even in ideal conditions. The example of a plant pot given in V.C.4.a.; it may totally biodegrade into water methane and carbon dioxide if it was in a tropical like environment with a long growing season and ideal conditions, but he same pot would not biodegrade to the same extent in a northern environment where the growing season may be much shorter and conditions much less ideal; and what about the configuration of the pot, one that is paper thin will biodegrade much faster than one that has the thickness of a normal clay pot. This is another way the APCO survey is skewed. Even though FTC reviewed the methodology of the APCO survey, you certainly can not believe that a knowledgeable consumer would believe that a material must totally biodegrade in one year, there are too many variables to consider to make such a blanket statement.

Along the same lines as the plant pot, what was meant by “packaging” in the survey? Certainly, a thin covering type packaging will totally biodegrade in a much shorter period of time than a package support made from the same material with a much greater mass and thickness. Was this taken into consideration when this survey was conducted and interpreted?

Concerning the following FTC statement:

<sup>7</sup> [http://epa.gov/climatechange/emissions/downloads10/US-GHG-Inventory-2010\\_Chapter8-Waste.pdf](http://epa.gov/climatechange/emissions/downloads10/US-GHG-Inventory-2010_Chapter8-Waste.pdf)

### VIII. § 260.8 Degradable Claims

- (a) It is deceptive to misrepresent, directly or by implication, that a product or package is degradable, biodegradable, oxo-degradable, oxo-biodegradable, or photodegradable. The following guidance for degradable claims also applies to biodegradable, oxo-degradable, oxobiodegradable, or photodegradable claims.
- (b) A marketer making an unqualified degradable claim should have competent and reliable scientific evidence that the entire item will completely break down and return to nature (i.e., decompose into elements found in nature) within a reasonably short period of time after customary disposal.

FTC's lack of understanding the current science of biodegradable, oxo-degradable, oxo-biodegradable and photodegradable plastics is apparent with the lumping of all of these technologies together. Degradables will degrade - breakdown into small fragment – there is no insinuation that plastics employing this technology will biodegrade; that is, decompose from the action of microorganisms such as bacteria and fungi into water, methane and/or carbon dioxide and biomass in time frames consistent with disposal method<sup>8</sup>. So why place them in the same category as technologies that will “break down and return to nature”. How FTC may handle the degradable technologies is not our issue, but the biodegradable technology should not be held to the same criteria.

Concerning the following FTC statement:

### VII. Request for Comment

- 5 The Commission proposes adopting a maximum period of one year for complete decomposition of solid materials marketed as degradable without time qualification. Would this guidance lead to deceptive claims in circumstances where consumers would expect a material to degrade in less than one year?

First, based on our comments on “§ 260.8 Degradable Claims” of the Proposed Green Guides above, we do not believe any “degradable” materials should be considered as completely decomposing. Product with such claims will only fragment, not decompose, and only when under specific conditions.

Second, adopting the maximum the period of one year for truly biodegradable material is absurd, especially if the customary method of solid waste disposal is landfill. This is not an issue that needs to be supported by consumer perception evidence, it is fact. Such microbiological processes can not be altered by what a consumer believes; it is controlled by the environmental conditions which will be unique to the disposal location. As a result, a precise period of time can not be specified. Experience tells us that when mulch is applied to landscape beds, it will last for more than one year. And in that years time in an aerobic environment it does not completely decompose into water, carbon dioxide and biomass. On the other hand US EPA states that anaerobic biodegradation in a landfill occurs for more than 60 years. The consumer should expect a biodegradable material to decompose over a range of time, understanding that the environmental conditions of disposal will have a significant effect.

Concerning the following FTC statement:

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<sup>8</sup> ASTM D 883 “Standard Terminology Relating to Plastics”, Balloted August, 2009

### II.B.3.b

“The second portion of the study tested carbon offset and carbon neutral claims. The questionnaire asked half of the participants about carbon offsets and half about carbon neutral claims. An initial screening question gauged whether respondents understood these concepts by asking them to identify what a carbon offset was or what carbon neutral meant. Only those participants who demonstrated a general understanding of these terms continued with the remainder of the study.”

This Consumer Preference Survey conducted by FTC for carbon offset and carbon neutral claims had an initial screening question that determined whether the respondents understood the concepts. They then only allowed those respondents with a knowledge of the subject continue with the remainder of the study.

This approach is missing from the APCO survey and very likely could have affected the results. It is apparent from Q1 of the APCO that although respondents expect something “biodegradable” to breakdown in 1 -2 years, most thought it was able to decompose or breakdown naturally (on its own) and when it does breakdown, it disappears completely, leaving nothing behind. Few respondents expected biodegradable material to give back to the earth in the form of soil.

It is apparent from this question that those that went on to complete the survey were not knowledgeable on the concept of biodegradation; the decomposition requires the action of bacteria, fungi, etc., the decomposing material does not completely disappear and the by-products do amend the soil. As was done in the FTC study, those that did not demonstrate an understanding of the concepts of biodegradation should have been excluded from the remainder of the study to prevent distorting the data.

Further items concerning the APCO Survey:

Q1. The majority of the respondents thought biodegradable meant that the material would decompose or break down naturally [on its own] and when it did biodegrade it would completely disappear with nothing left behind. Few thought that biodegradation would give back to the soil. And according to the survey summation, most respondents believed that it would take 1 to 2 years for biodegradation to occur.

This indicates:

- 1) that the majority of those taking the survey did not have an understanding of the concept of biodegradation [the decomposition requires the action of bacteria, fungi, etc., the decomposing material does not completely disappear and the by-products do amend the soil] and,
- 2) an inconsistency with the response to the later question, Q4, where the survey asks what should be the maximum time for a package to decompose; 60% replied one year or less and 46% replied one year or more.

The validity of the survey is in question. We believe that this survey should have been structured as was FTC's Consumer Preference Survey, that is, initial screening questions should have been asked to eliminate those participants that were not knowledgeable of the concepts of biodegradation. (See II.B.3.b of the proposed Green Guides).

Q1. I'd like to discuss what it means to you for something to be "biodegradable"  
Please tell me, in your own words, what you think it means if something is  
"biodegradable"  
[PROBE; What else does this mean to you?]

Q2. Results to this survey question show that over 80% of the respondents think something labeled  
"biodegradable" will decompose almost anywhere, including in a landfill.

Q2. From what you know, if something is labeled "biodegradable" does that mean it  
will decompose in the natural environment, in a landfill, in your backyard.

Q.4 Per in V.C.4.a., FTC is requesting comments regarding their adoption of a maximum period of one  
year for complete decomposition of solid materials marketed as [bio]degradable without time  
qualification. Although the response to this question indicates, as FTC stated, that 60% of the  
respondents think the max time to decompose is 1 year or less, it also indicates that 47% of the  
respondents think decomposition would be 1 year or more. Given the response to Q1; showing the lack  
of knowledge of the concept of biodegradation by the majority of the respondents to the APCO survey,  
the expected time for biodegradation in a landfill should be reconsidered to be greater than one year.  
The lack of knowledge is also supported by the response of 19% of those surveyed that believed that it  
would take one month or less for decomposition to occur.

In conclusion, we feel that the FTC should not make changes in the Green Guides until it has a much  
better understanding of modern landfills and the new biodegradable technologies that can be part of a  
renewable energy strategy for years to come. Requiring the unqualified claim of something being  
"biodegradable" having an unnatural and arbitrary time-frame of 1 year or less does not do service to the  
nations consumers.

Very truly yours,

Robert Sinclair  
President & CEO

RS/mm

