C&L America Inc.
Bio-PET and Bio-Propylene

Bio-PET and Bio-Propylene Life Expectancy Facts and Biodegradable Properties

To Whom It May Concern:

I am writing this letter to give you some helpful information concerning the life expectancy of plastic products that carry the Bio-PET and Bio-Propylene product designation from C&L America Inc. The first and most important point to make is to distinguish between the types of life expectancy of the plastic when it is on the warehouse or store shelf, in regular usage as packaging or other normal plastic usage. The other life expectancy to be discussed below has to do with the situation when the same plastic has been put in conditions wherein it has constant contact with other materials that are biodegrading.

Bio-PET and Bio-Propylene plastic products will have the same life expectancy as the same plastic products manufactured without our proprietary additives under all but the conditions mentioned above wherein they are placed in constant contact with other materials that are biodegrading (i.e. on or buried in the ground). This is a major reason why our technology for having biodegradable plastic products is so successful.

The principles concerned with the degradation of plastics that make use of our additive technology are truly involved with “bio”-degradation. Our technology does not rely on the use of photosensitivity or thermal sensitivity to photodegrade or thermally break down the plastics. For this reason, a thermoformed polypropylene microwaveable dinner tray, or PET salad bowl manufactured by us with Bio-PET or Bio-Propylene will last in the warehouse and on the store shelf as long as it would if made of standard PET and polypropylene.

There is the real concern for the technologies that make use of thermal or photodegradation that they are simply leaving smaller particles of plastic in the soil rather than having the material truly become the organic components of soil. This is especially of concern in the agricultural industry and for those needing erosion control products. Agricultural films, erosion control nettings, and other such products manufactured with similar additives will last long enough to get the required use but will completely biodegrade into the soil; such plastic products completely biodegrade in a period of from 9 months to 5 years or less. It is not a “poof, it’s gone” system, but simply makes the plastic product biodegrade as if it were a stick or a branch off of a tree rather than “sticking around” for hundreds of years.

To summarize the concept, the key to our technology is that the right conditions for biodegradation are not those found when the plastic product is in use, on the store shelves or is being warehoused somewhere. Just like a wood bowl or a piece of wood furniture, which can be used for a lifetime or more, our Bio-Plastic products can be used for essentially the same period of time as the same plastic product made without our additive could be used.

Concerning the life expectancy of our Bio-PET and Bio-Propylene plastic products once they are placed in constant contact with other biodegrading materials, we certify the full biodegradation of our products so designated “100% Biodegradable” and carrying the Bio-PET and Bio-Propylene label. We can certify this situation due to the internal and external studies that have cost the additive manufacturers hundreds of thousands of dollars. The additives have been tested in all of the types of PET and Polypropylene formulations, with much of the testing having been performed using the various world-standardized tests in independent laboratories by independent scientists.

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We have had the various test data analyzed by independent scientists, and their conclusions and data (some of which is enclosed in our presentation material) and are what we base our certification on.

The basic concept is that biodegradation is a natural process that occurs around the world but at various speeds due to various conditions. Plastics with our additives behave like sticks, braches or trunks of trees. Due to this fact, we do not guarantee any particular time because the time depends on the same factors that the biodegradation of woods and most other organic materials on earth depend – ambient biota and other environmental conditions. Under specific composting conditions with additional accelerants sprayed on them, some customers have reported biodegradation in as little as a couple of months. Under the more usual, commercial composting conditions using high heat processes, a time frame of around one year is a reasonable expectation.

Petrochemical plastics would normally take hundreds or thousands of years or even longer to "biodegrade"; with our Bio-PET and Bio-Propylene, the same plastic formulas biodegrade in a hundredth of that time or less.

Do not be confused by the claims of some companies that say that their resins fully biodegrade in 2 or 3 months, such as the case with PLA corn based resin. They are speaking of biodegradation under very specific conditions. This has led to some confusion such as in the Kassel project in Germany, when the bags and other plastic products marked with a "compostable" label were found not to be compostable by the town's citizens in their backyard compost heaps (they were only compostable under the very specific commercial composting standards where there is high heat, oxygenation, moisture control and high levels of microorganisms). It is our opinion that in these cases, manufacturers should label items as "Commercially Compostable" rather than simply "Compostable" when such conditions are required.

We prefer to label our products as "100% Biodegradeable" to identify it's wider capabilities. Our Bio-PET and Bio-Propylene will fully biodegrade in home compost heaps, commercial composting operations (both high heat and low heat, or even in vermiculture processes), buried in the ground, buried in landfills, tilled into the soil, or even having been littered, etc. Most importantly, our product is by far the least expensive, most widely applicable, proven technology for the biodegradation of plastics in the world.

Again, we certify the biodegradation of our Bio-PET and Bio-Propylene based on more than ten years of testing worldwide by the additive manufacturers, by universities, by customers, prospects and competitors.

I am sure that you will be pleased with the physical properties of our Bio plastic products, as they will give the useful life that is necessary, but will return to the soil after their useful life is over. Thank you for your interest in our products and company. Please feel free to contact me directly with any further questions that might arise.

Yours truly,

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