



Date: April 17, 2015
Subject: Mulch Film Bio360
From: Daniel Martens – Novamont North America

To whom it may concern,

Please find more details about material description for the Compostable and Biodegradable mulch film Bio360 made from Mater-Bi.

- 1) 100% Mater-Bi internationally fully certified 100% compostable material
- 2) Certified Compostable Film (according to independent third party testing conducted by BPI ASTM D6400 and Vinçotte OK Compost)
- 3) Mater-Bi is 100% Petroleum Plastic Free

There are 3 basic groups in our recipes, a starch/vegetable oil component, a polyester component, and others like plasticizers, binders etc.

1. The starch / vegetable oil piece component are sourced from plant materials like industrial grade corn, sunflower, soy, rapeseed, and thistle plant seeds.
2. The polyester for this grade of material is a 100% compostable fossil sourced component. We also have sustainable grades of polyester but they are not used in this grade.
3. The other components are fossil sourced only because there is not current technology for sustainable sources. They are formulated so that the complex chains of monomers are simplified so they become edible by bacteria in a compost pile or at the bottom of the ocean. If you want the specifics on what makes something compostable, please reference the international standards on compostability. We meet them all.

In soils with active microbial activity, Mater-Bi is eaten by microorganisms and converted to CO₂, H₂O and organic matter.

In the bioplastics industry, it is sometimes confusing when relating to PLASTICS and BioPlastics. The term plastic comes from the actual property of Thermalplasticity. Which means any material that can be heated, then shaped into something else and when it cools, it retains the shape of the heated material. This was a big plus for cups to auto parts. However, it doesn't matter what the material is, only that it does not turn back to a sheet or bunch of goo when it cools. These types of PetroChemicals came to be commonly known as plastics, actually PetroBased Plastics. Now when the material is a BIO based and compostable material, it is a BIOPLASTIC.

Novamont is the leader in the BioPlastic industry by making Mater-Bi compostable material since 1989, at the highest levels of integrity and technology. Novamont has been promoting the sustainability concept since 1983.

Let me know any further questions.

Sincerely,

Daniel Martens

Daniel Martens
Vice President North America
Novamont North America