

Carbon Nurture Product Performance and Testing Information

Mulch Film Product Performance

Although our mulch film product (the “**Product**”) has been tested by independent laboratories and is undergoing additional testing at universities and farm experimental fields as described below, Carbon Nurture Corp. (the “**Company**”) provides only those warranties expressly set forth in the written Terms and Conditions of Sale pursuant to which the Products are sold. Based upon the scientific testing and testing of similar materials detailed below, it is our belief that our Product will biodegrade into biomass, soil organic carbon, water and carbon dioxide in 2 years or less when placed in soil and exposed to typical North American farming environmental conditions; provided, however, Product biodegradability may vary due to different environmental and climatic conditions due to natural variations, human intervention, unexpected contaminants and/or accidents. Based on the testing described below, it is our belief that our products will not cause any soil/plant toxicity and will leave the soil more fertile.

The Company is not responsible for any damage or loss related to the usage and speed of degradation of the Product. It is the customer’s sole responsibility to make trials and tests prior to using our Product in order to validate the performance of the Product in the customer’s specific usage conditions.

The Company’s Products have passed the following published standards and tests:

Physical properties testing:

1. Tensile strength and elongation per ASTM D882
2. Optical requirement (transmission) per ASTM D1003
3. Dart impact per ASTM D1709

Our films exceed the requirements of EN17033 regarding the physical properties of mulch films and their optical properties.

Heavy metals tests: EN ISO 17294-2 (Cd, Cr, Cu, Ni, As, Co, Pb, Zn), EN ISO 12846 (Hg)

Our films are free of or have concentrations much below lowest thresholds per EN17033 and EPA40 CRF part 503 in soil.

Chemical modification by oxidation per ASTM D6954: Our testing has demonstrated that our polymers reach the required carbonyl index (measured by infra-red spectroscopy) and molecular weight (measured per ASTM D6474) to achieve biodegradation in the soil.

The Company expects its Products to pass the standards set forth below based on test data for similar materials. The Company is currently conducting these tests on its Products for confirmation.

Additional Standards under the EN17033 umbrella (when tested after intended environmental exposure conditions):

Laboratory soil respirometry testing: Modified ASTM D5988-18 and modified EN ISO 17556. Modifications:

1. Samples entering the respirometry testing are exposed to natural conditions or accelerated weathering conditions per ASTM D5071
2. Calculations of soil biodegradability are done based on oxygen uptake in a manometer-type respirometer (with NaOH trap)

Eco-toxicity tests

1. Plant toxicity:

- Tested according to OECD208 using a monocotyl plant species
- Tested according to OECD208 using a dicotyl plant species

2. Different organisms of trophic level:

- Earthworm toxicity tested per modified OECD 207
- Nutrification inhibition test per modified ISO 15685
- Daphnia magna acute immobilization test per modified OECD 202

Field testing: The testing identified above on our Product is taking place at several universities and farm experimental fields over a period of approximately 6-12 months taking into account different climates and soil types.

Microplastics-free status after field testing: after sieving through 2mm sieve of the soils collected at different depths after biodegradation of mulch film, gravity separation, filtration and analysis by optical microscopy, IR spectroscopy, chemiluminescence and isotopic analysis.

Soil organic carbon enrichment of field soils: tested by simultaneous DSC/TGA thermal analysis