



TEST REPORT N. 1444

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Spett.
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Milan, 16/12/2010

Request order received: 24/06/2010

Laboratory end: 16/12/2010

SAMPLE IDENTIFICATION:

Plastic sample named: "Continuous filament yarn CORNLEAF (bacteriostatic, solution dyed PLA)" here after named **Continuous filament yarn CORNLEAF** .

Sampling, transport and delivery due to Customer.

Description customer request:

Your letter dated 24/06/2010

TEST METHOD:

00.03 * PREPARATION OF THE SAMPLE FOR BIODEGRADABILITY TESTS

00.73 * TOC UNI 13137/02

32.10 * BIODEGRADABILITY IN MATURE COMPOST UNI-EN 14046/2003, ISO 14855-1/2005

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00.03 * PREPARATION OF THE SAMPLE FOR BIODEGRADABILITY TESTS

The sample was milled in liquid nitrogen to obtain particle size <1 mm.

00.73 * TOC UNI 13137/02

% organic carbon “continuous filament yarn CORNLEAF (bacteriostatic, solution dyed PLA)” = 56%

32.10 * BIODEGRADABILITY IN MATURE COMPOST UNI-EN 14046/2003, ISO 14855-1/2005

Experimental conditions

Determination of the ultimate aerobic biodegradability under controlled composting conditions.

Reactors employed: (3 litres capacity jars).

3 reactors for the blank.

3 reactors for the reference sample.

3 reactors for the sample.

Reference sample: Avicel cellulose (Merck) about 20 g for each reactor.

Analysed sample: milled sample to obtain a homogeneous powder, about 20 g for each reactor.

Temperature during the test: 58 ±2 °C.

Testing mixture: mature compost from a composting plant mixed with an inert support (vermiculite, Sigma – Aldrich). For each reactor: 300 g compost + 100 g vermiculite (dry weight).

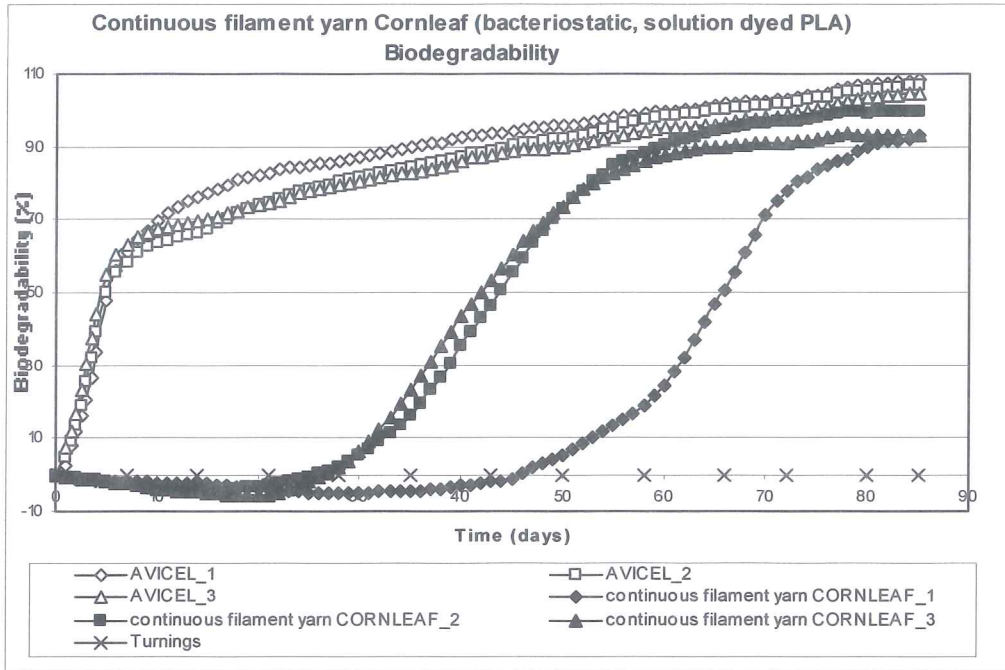
Water content of the testing mixture: about 40 % during the test.

Validation of the test:

	<u>YES</u>	<u>NO</u>
<u>Was the degree of biodegradability of the reference material (Avicel) > than 70% after 45 days? (Mean obtained value: 91,1%)</u>	<u>X</u>	
<u>Is the difference among the percentage of biodegradability of the reference material (Avicel) in the different reactors < than 20% at the end of the test?</u>	<u>X</u>	
<u>Is the CO₂ production of the compost after 10 days of test comprised between 50 and 150 mg CO₂ / g of volatile solids? (Mean obtained value: 85,8 mg CO₂/g).</u>	<u>X</u>	
<u>Validation of the test:</u>	<u>X</u>	

P.S.

Determination of the ultimate aerobic biodegradability under controlled composting conditions.



% biodegradability = Calculated respect the quantity of the total organic carbon initially contained in the sample.

Sample	% Biodegradation		
	replicate 1	replicate 2	replicate 3
Reference, Avicel Cellulose	108,1	106,9	104,8
Continuous filament yarn Cornleaf (bacteriostatic, solution dyed PLA)	92,8	99,9	93,0

The sample “Continuous filament yarn CORNLEAF (bacteriostatic, solution dyed PLA)” after 85 days of test resulted biodegradable in mature compost, having reached an average biodegradation value equal or higher than 90% as required by UNI EN 13432-2000 (section A.2.2.2).

Annex 1 and Annex 2 report Cumulative CO₂ and Biodegradability data collected during the 85 days of test.

NB: The above results solely refer to the received samples. The reproduction of individual parts of this report without our approval, is prohibited. The residual samples are stored for 3 months.

HEAD OF THE LABORATORY

(Dr. Patrizia Sadocco)



THE DIRECTOR

(Prof. Bruno Marcandalli)

