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# LABORATORY REPORT

**Advanced  
Materials  
Center, Inc.**

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**Client:** KTM Industries  
Timothy Colonnese

**Date:** December 5, 2007  
**Project #:** 07P1178-ASTM D 6868

**Purpose:**

Evaluate the compost disintegration of two (2) materials per ASTM D 6868, D 6400-04 using a modified ASTM D-5338 @ 58 ± 3 °C by contact with composting material for nine (9) weeks. Compare the results to the biodegradation rate of a positive control of cellulose. The compost used for the ASTM D 6868 evaluation will also be used for the OECD 208 Plant Toxicity Test. This compost has been charged with each sample to conduct the Cress and Barley Testing.

**Sample Identification:**

**Source**

A.	Positive Cellulose Control (1) Each	
B.	Foam Sheet (1) Each	KTM Industries
C.	Adhesive (1) Each	KTM Industries

**Conclusions:**

In our opinion, based on the overall weight loss and disintegration, the materials evaluated have met the compostability requirements stated under ASTM D 6400-04 and 6868 methods.

**Results:**

The test samples % weight change of those recovered (Refer to Table I and Figure 1):

		<u>% Weight Loss</u>
Sample A	Positive Cellulose Control	100.00%
Sample B	Foam Sheet	96.70%
Sample C	Adhesive	98.70%

**Discussion:**


The evaluation of the samples were run per ASTM D 6868, D 6400 using a modified ASTM D-5338 @ 58 ± 3 °C by contact with composting material for nine (9) weeks. Each sample container contained 10% by weight of each sample type of which 9% was ground material and 1% was solid material. Two (2) replicates per sample were tested. Composting material was purchased from Monterey Mushrooms Inc in Princeton, IL. The composting material had a Carbon : Nitrogen ratio of 14:1 which was within the specifications for this test. The pH of the compost material was 7.3 with a total dry solids percentage of 50% when dried at 105 °C until constant weight was achieved and was within the limits of 50%-55%. The volatile solids had a dry matter content of 28% which was under the 70% allowed. The compost material in each flask was stirred weekly and deionized water added when needed to keep the compost material moist. Percent ash content of each sample is listed in Table I. Figure I represents the average weight loss percentage of each material. Also, refer to Figure 1 for average weight losses of each material.

Sample A had an average total (100.00%) compost disintegration. None of the sample could be found in the composting material over the 9 week exposure period.

Sample B had an average total (96.7%) compost disintegration. Nearly all of the sample had degraded in the composting material over the 9 week exposure period and only a minute amount could be found.

Sample C had an average total (98.7%) compost disintegration. Nearly all of the sample had degraded in the composting material over the 9 week exposure period.

In our opinion, based on the overall weight loss, these two (2) materials can be considered disintegratable after the 9 week exposure period, meeting ASTM D 6868 requirements.

  
Greg Geil  
Environmental Scientist  
Attachments: Table I / Figure I

# ASTM D-6868 Aerobic Biodegradation - 64 Days

Client: KTM Industries

Started: 09/28/07

Project #: 07P1178

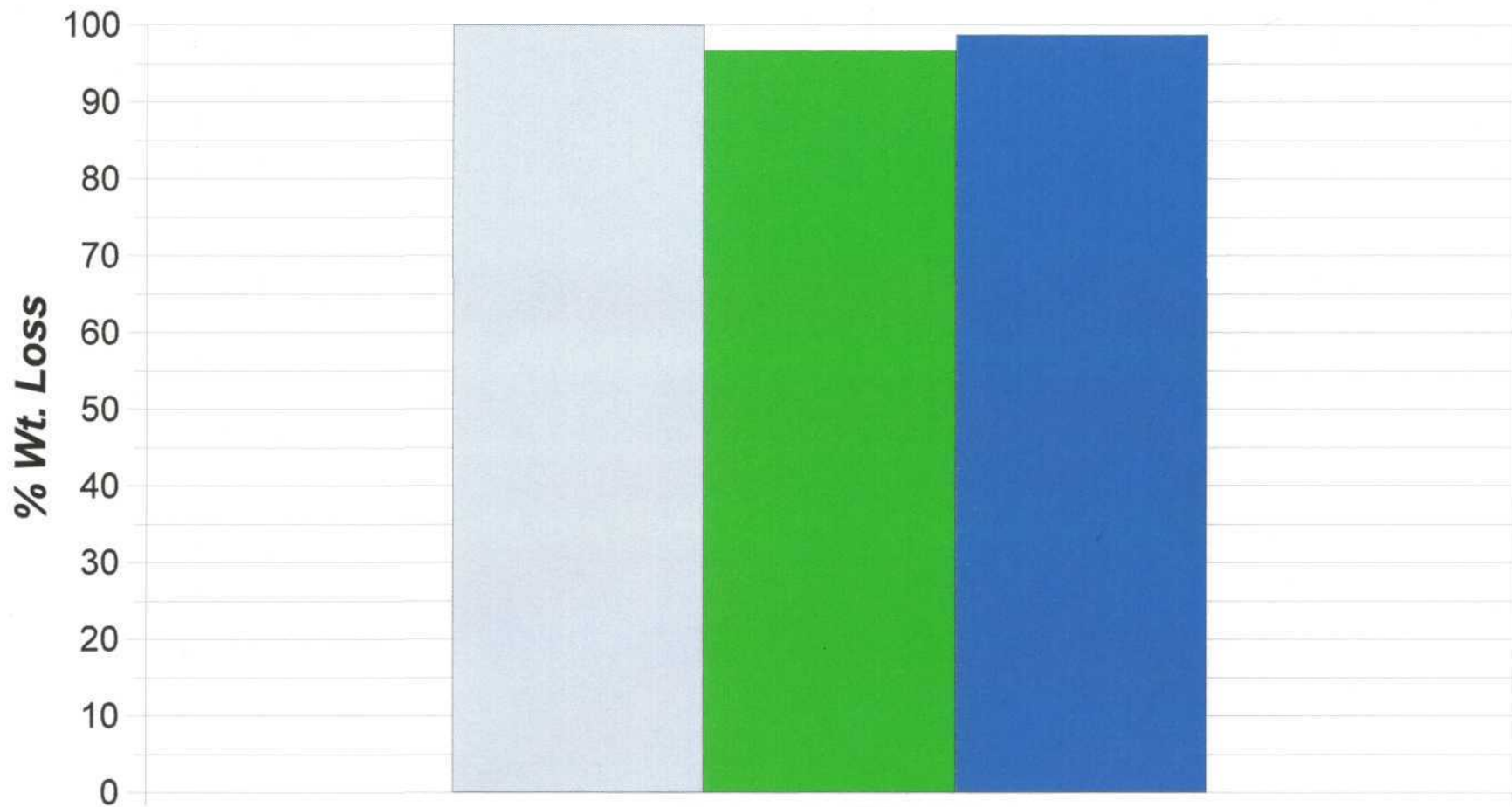
Finished: 12/04/07

Table 1

Total: 64 Days

Sample Reference	Sample Size	Initial Weight (1%) (g)	Final Weight (g)	% Weight Loss	% Ash	Flask Number	9% Ground Weight (g)
Positive Cellulose Control	Cut Squares	1.8000	0.0000	100.00	0.00	1	16.2000
Foam Sheet	Cut Circles	2.7686	0.0904	96.70	1.92	2	24.8400
Adhesive	Cut Squares	2.2134	0.0298	98.70	7.59	3	19.8900

# Figure 1: ASTM D 6868 Percent Weight Loss



Project #: 07P1178

**Sample Identification**

