



Compostability Testing





Reasons for Testing

Quality



Effects on the value of our finished product

Our Technology



Static Positive Aeration –
closely monitored



History

- ❖ Testing began with Compostable Bags
 - ❖ BPI Certification Required prior to Testing
- ❖ 2006 Field Test of Food Service Items
 - ❖ ASTM D6400 and D6868
- ❖ 2008 Formalized Substrate Acceptance
 - ❖ Historically Acceptable Materials
 - ❖ Paper, Clay and Wax Coated Paper, Wood



BPI and ASTM

ASTM D6400 and ASTM D6868

Spectral Analysis

Biodegradation
(CO₂ Conversion)

Toxicity

Heavy Metals

Disintegration



Reviews Laboratory Data

The Testing Process

- ❖ Manufacturer Sends in Samples for Testing
- ❖ A Profile Must be Completed Accurately

The Product Must

Be BPI Certified

Meet ASTM compostability standards



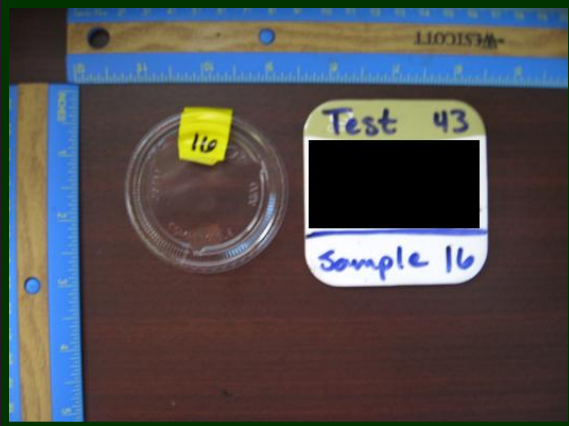
or

Cedar Grove * Compostability Profile Submittal Sheet	
Cedar Grove Composting, Inc.	Date:
A. General Information	
Manufacturer Name: _____	<input type="checkbox"/> Check Enclosed (payable to Cedar Grove Composting)
Manufacturing Site Address: _____	
City/ST/Zip: _____	<input type="checkbox"/> Visa or MasterCard
Contact: _____	
Position: _____	
Phone/Fax: _____	
E-mail: _____	
ME101788	
C. Manufacturer Certification:	
1. _____ I hereby certify that all samples and/or technical information provided for Cedar Grove Composting testing/review is supplied directly by the manufacturer.	
2. _____ I hereby certify that the above and attached description is complete and accurate, and that the items submitted for testing are consistent with material received and represented by the above noted item numbers for purchase and use in the market place.	
3. _____ I certify that samples submitted meet ASTM D6400 (bioplastic), ASTM D6868 (paper/bioplastic) criteria for biodegradability (compostability), and that any and all results from ASTM tests completed are submitted with this profile for proof of that standard.	
4. _____ I also acknowledge a testing fee will be charged for all groups of items to be tested.	
5. _____ I acknowledge that Cedar Grove (B) Composting reserves the right to purchase submitted items independently for testing accuracy. Any response indicating an item satisfactorily passed our test does not apply to any other item than specific item (or SKU), material, whether deemed related or unrelated in content or manufacturing method, and no longer applies to the item tested where there is any variation in the contents or manufacturing process of the item.	
6. _____ To remain on our list of items that have passed our test, we reserve the right to test items purchased directly by us or to require annual retesting or certification to ensure no changes in content and/or manufacturing process, at our discretion.	
7. _____ The testing on an item and an indication that the item passed our test does NOT authorize ANY use of any of our logos, trademarks, trade names, letterhead or company name on such item, on the packaging of such item, or in the marketing of such item. Any such uses can be authorized, at our discretion, only pursuant to a formal written license agreement through our affiliate, Cedar Grove Packaging LLC.	
8. _____ I acknowledge that this profile is good for one (1) year from signed date by Cedar Grove, and that annual technical review, testing and recertification may be required to ensure products are the same as initial samples submitted.	
Manufacturer's Authorized Signature: _____	Date: _____
(Please print out form and sign)	
Name (print): _____	Title: _____

Please see back page to complete submittal sheet



Testing Process



- ❖ Visual Data is recorded and logged

- ❖ Samples are placed in nylon bags
 - ❖ 80% Feedstock
 - ❖ 20% Products



Bags are Placed in Compost Heap



Phase Two



Test Remains in Covered Heap for 28 Days Phase I



Extract Test

After 28 Days...
After 28 Days...



Water Content Check



Locate Test



Place in Phase II

Phase Three

After Another 14 Days...



- ❖ Placed Inside to Dry for Four Days
- ❖ Sifted Through
- ❖ Products and ID Tags are Located

Test Parameters

pH

5 - 8

C:N

25-35:1

Temperature

Must reach above 131°F for 10 day consecutive interval

150°F - 180°F for a 7 day consecutive interval

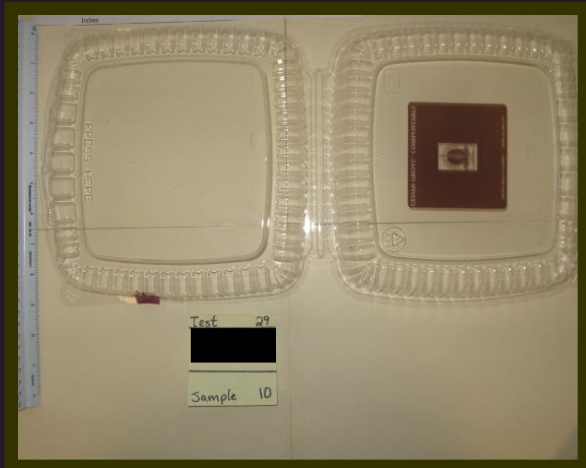
Moisture

Porosity

Above 55%

Test Conclusion

Fragments are located and placed in accordance with Procurement Data



Percentage of Degradation is Logged

99%



ASTM D5338 - Disintegration

ASTM

3 Month Old Stable Compost

C:N - 13:1

Temperature - 136°F

Duration – 84 to 180 days

Cedar Grove

Incoming Feedstock

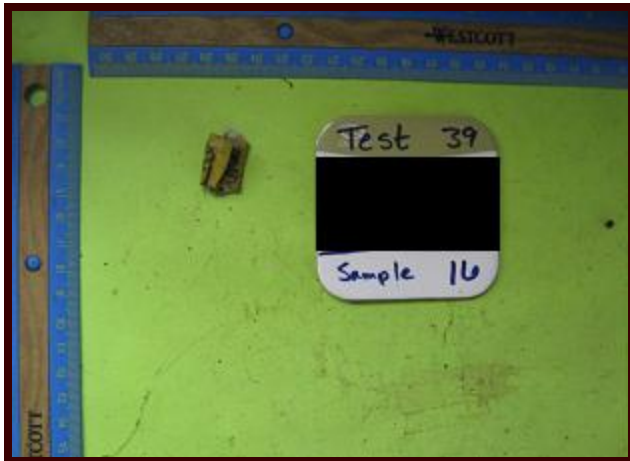
C:N - 30:1

Temperature - 170°F to 140°F

Duration – 49 to 60 days

C:N Parameter

C:N – 40.2:1



C:N – 28.2:1



C:N – 40.2:1



C:N – 28.2:1



Compost vs Feedstock

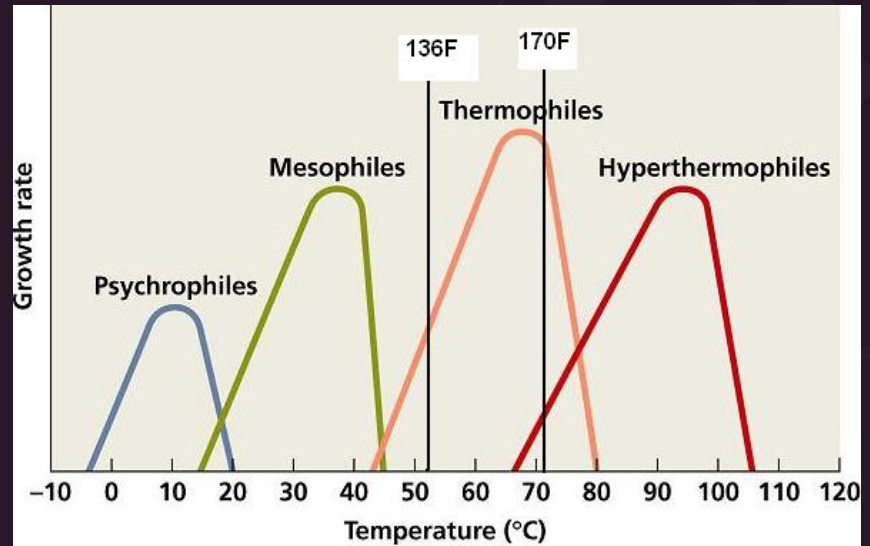
Finished compost contains beneficial microbial populations for soil structures.



Feedstock contains bacteria and fungi that promote degradation of organic compounds.

Temperature

Different fungi and bacteria, propagate at different temperatures.



The Science of Composting pt.1

By: Elliot Epstein

Microbiology Section

Non-Certified Products



News Articles



7343 E. Marginal Way S.
Seattle, WA 98108
877-994-4466
GoGreenScene.com

May 15, 2010

Dear Valued Customer:

We have seen an influx of cutlery manufactured by Taterware and Jaya (A sear Corporation) in our course compost material. This material is primarily used for storm water and construction applications. These unapproved items cause us excessive expense to segregate and dispose of as well as contaminate our sale product. We are contacting you to remind everyone that the **only** food service products allowed to go into commercial food waste carts are those that have been accepted by Cedar Grove Composting.

Please go to this link to view commercially accepted items:
<http://www.cedar-grove.com/acceptable/Accepted%20List.asp>

These specific cutlery brands are *not* listed on our site, and *are not* accepted at Cedar Grove® facilities.

Always feel free to contact us regarding purchasing or disposal of these items.

Here are examples of these items:



Any products that are not listed on our site are not accepted at Cedar Grove® facilities.

Thank You for your business.
Sincerely,

Cedar Grove Composting

Tracking Contamination


First line of defense: Correct Packaging Purchases



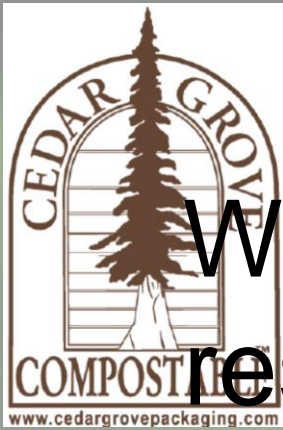
Truck Drivers

Educational Outreach Coordinator

Building Monitor

	LOAD INSPECTION FORM ORGANICS RECYCLING PROGRAM 2009
	Inspector Name: _____ Company Name: _____ Route Number: _____
Was contamination detected by upon receiving? YES NO If "YES" pick out a representative sample of contaminants only and take 3 pictures.	
Describe Contaminants:	
Styrofoam _____ % Plastic _____ % Metal _____ % Glass _____ % Other _____ %	Product Identification Type: _____ Color: _____ Identifying Marks or Script: _____
Ratio of Total Contaminants by Volume: 1-3% 4-7% 7-10% >10% Reject	
Scale Attendant Name: _____	
Date Received _____ Customer Account _____ Account Address _____ Account Contact _____ Phone _____	
Was contamination detected by driver upon pick-up? YES NO Written Warning last 3 Months? YES NO Date _____	
Actions Taken: No Action Written Warning Written Warning w/ Up charge Rejected	
Correspondence submitted to Customer if Action was taken and copy to Driver of Inspection Log with 3 Pictures? YES NO Date Submitted _____	

Cedar Grove Packaging



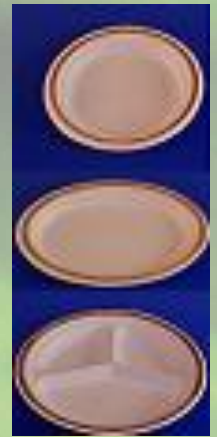
CEDAR GROVE™ COMPOSTABLE

Made in the USA

What are we to do about residential contamination?



SOLD



PAK-SHER



FK Fabri-Kal



On the Horizon.....

Biodegradable Painting Accessories

Manufactured of compostable material

♻️ Meets ASTM 6400
 ♻️ Composts in less than 60 days
 ♻️ Made in U.S.A.

Our new line of high-value, low-cost Painting Accessories is made with renewable and ecologically sound substitutes for petroleum-based plastic products. Materials such as corn, wheat, tapioca and potato starches are used in place of traditional plastics to provide an environmentally friendly solution. This also reduces the need for oil and replaces it with products primarily from the Midwest.

Our products are made from resins that are certified as biodegradable and compostable in the United States and Europe. They meet Biodegradable Products Institute (BPI) standards for compostability (ASTM 6400 D99 and ASTM 6868) and European Bioplastics Standards (EN 13432). Composting reduces the amount of carbon dioxide that is released into the atmosphere.



Item No. 10509	Item No. 10531	Item No. 10525	Item No. 10508	Item No. 10521	Item No. 10522	Item No. 10517	Item No. 10518	Item No. 10520
1 1/4" Paint Scraper	2 1/2" Paint Scraper	8-in-1 Paint Saver	Gallon Paint Mixer	Triple-Edge Paint & Trim Guide	12" Plastic Paint Guide	1 1/2" Putty Knife	3" Putty Knife	6" Broad Knife



Paper isn't just paper.....



Quilon (Chromium)

Sterylated Melamine

Over Varnish Print
(aka OVP)

Titanium Dioxide

Etc.....

Substrate Analysis

Manufacturer's must provide:

MSDS on inks and other treatments

If MSDS shows any signs of hazard:

FDA approval for direct food contact must be submitted

If FDA is for indirect food contact:

Metals analysis will be conducted.

If there are any extra coatings or treatments – item may be tested.

Levels must meet ASTM requirements and molybdenum must not be higher than 9ppm

If treatment is new to us item must be tested.

ASTM testing may be required:
Toxicity, Biodegradation, Spectral Analysis

If item meets disintegration requirement

Collaborate

City Representatives

Haulers

Processors

Manufacturers

Restaurants

Distributors



Myth vs Fact

Myth	Fact
Cedar Grove will not certify sugarcane bagasse products.	Cedar Grove will accept any product that has met our testing requirements.
Cedar Grove only tests items domestically manufactured.	Cedar Grove tests products from around the world.
Cedar Grove shows favoritism to CGP manufacturer's.	Cedar Grove Packaging, LLC is strictly a licensing company who issues logo use on behalf of Cedar Grove Composting.

Thank You



Michele Riggs

Biodegradable Technical Specialist

micheler@cgcompost.com

(206) 437-5682