

**TEST REPORT****EN 13432-2000****Packaging -****Requirements for packaging recoverable through composting and biodegradation –  
Test scheme and evaluation criteria for the final acceptance of packaging****Report**

Report reference No.....: SCC(10) -320-10

Tested by (+signature).....: *Jia Jin Chun*Reviewed by (+signature).....: *Zengtao*Approved by (+ signature).....: *Hetis*

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**Testing laboratory**

Name.....: CHINA CEPREI (SICHUAN) LABORATORY

Address.....: No.45 Wenming Dong Road Longquanyi, Chengdu 610100 P. R. China

Testing location.....: Same as above

**Client**

Name.....: CIXI CHONGGAO SEAL PRODUCTS MATERIAL CO.,LTD

Address.....: HUSHAN STREET,CIXI,ZHEJIANG,315300,CHINA

**Test specification**

Standard.....: EN 13432-2000

Test procedure.....: commission

Procedure deviation.....: N.A.

Non-standard test method.....: N.A.

**Test report form/blank test report**

Test report form No.....: SCC13432

TRF modified by.....: CHINA CEPREI (SICHUAN) LABORATORY

Master TRF.....: PS\_INFO\2-ELS.MES\REPORTS\CCA

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Clause	Requirement-Test	Result-Remark	Verdict
<b>Test item</b>			
Type of test object .....	Plastic Pellets		
Trademark .....	/		
Model and/or type reference.....	biodegradable plastic pellet 0.20g, biodegradable plastic pellet 0.25g		
Manufacturer.....	CIXI CHONGGAO SEAL PRODUCTS MATERIAL CO.,LTD		
Rating(s).....	/		
<b>Testing</b>			
Date of receipt of test item.....	Feb.25, 2010		
Date(s) of performance of test.....	Feb.25 2010 to July. 21, 2010		
<b>Possible test case verdicts</b>			
Test case does not apply to the test object.....	N(A.)		
Test object does meet the requirement.....	P(ass)		
Test object does not meet the requirement.....	F(ail)		
<b>General remarks</b>			
“(see remark #)” refers to a remark appended to the report.			
“(see appended table)” refers to a table appended to the report.			
Throughout this report a comma is used as the decimal separator.			
The test results presented in this report relate only to the object tested.			
This report shall not be reproduced except in full without the written approval of the testing laboratory.			
Brief description of the tested sample(s):			
Ambient temperature :68-70 °CF humidity:63-65 %.			
Complete test was conducted on biodegradable plastic pellet 0.20g			
Roundness:5.95±0.01mm			
Actual Weight:0.20 gram and 0.25 gram			
Breaking Pressure(Hardness): >20kg/cm <sup>2</sup>			
Water Soluble & physically disappear over time			
Time to degrade:Visible process of degradation, tests indicate the product will specific weather			
Conditions,including, without limitation, the relative humidity.			

Clause	Requirement-Test	Result-Remark	Verdict
<b>4</b>	<b>Requirements</b>		
<b>4.1</b>	<b>Control of constituents</b>		
	Constituents known to be, or expected to become, harmful to the environment during the biological treatment process (see clause 8), in excess of the limits given in Annex A.1, shall not be deliberately introduced into packaging or packaging materials intended to be designated as suitable for organic recovery.		P
<b>4.2</b>	<b>Assessment</b>		
<b>4.2.1</b>	<b>General</b>		
	Except as identified in clause 4.3, assessment of the biological treatability of packagings and packaging components shall include the following 5 assessment procedures as a minimum : _ characterization (see 4.2.2) ; _ biodegradability (see 4.2.3) ; _ disintegration including effects on the biological treatment process (see 4.2.4) ; _ compost quality (see 4.2.5) ; _ recognizability (see 4.2.6).		P
<b>4.2.2</b>	<b>Characterization</b>		
	Each packaging material under investigation shall be identified and characterized prior to testing including at least : _ information on, and identification of, the constituents of the packaging materials ; _ determination of the presence of hazardous substances, e.g. heavy metals ; _ determination of the organic carbon content, total dry solids and volatile solids of the packaging material used for biodegradation and disintegration tests.		P
	NOTE In addition to the chemical characteristics for volatile solids, pass levels for heavy metals are also provided as their total absence is not possible.		N
<b>4.2.3</b>	<b>Biodegradability</b>		
	To be designated as organically recoverable, each packaging, packaging material or packaging component shall be inherently and ultimately biodegradable as demonstrated in laboratory tests (clause 6) and to the criteria and pass levels given in Annex A.2.		P
<b>4.2.4</b>	<b>Disintegration</b>		
	To be designated as organically recoverable, each packaging, packaging material or packaging component shall disintegrate in a biological waste treatment process (see clause 7) to the criteria and pass levels given in Annex A.3, without any observable negative effect on the process.		P
<b>4.2.5</b>	<b>Compost quality</b>		
	To be designated as organically recoverable, no packaging or packaging component thereof, submitted to a biological waste treatment process, shall be recorded as having a negative effect on the quality of the resulting compost (see clause 8).		P
<b>4.2.6</b>	<b>Recognizability</b>		

Clause	Requirement-Test	Result-Remark	Verdict
	The packaging or packaging component which is intended for entering the biowaste stream must be recognizable as compostable or biodegradable by the end user by appropriate means.		P
<b>4.3</b>	<b>Exemptions</b>		
<b>4.3.1</b>	<b>Equivalent form</b>		
	A packaging material demonstrated to be organically recoverable in a particular form, shall be accepted as being organically recoverable in any other form having the same or a smaller mass to surface ratio or wall thickness.		P
<b>4.3.2</b>	<b>Materials of natural origin</b>		
<b>4.4</b>	<b>Recording of assessment outcome</b>		
<b>4.4.1</b>	<b>Check list</b>		
	For each packaging the result of each assessment or test undertaken (as required in 4.2.1), shall be recorded on an assessment check list and their combined outcome used to determine whether a packaging material or a packaging is biologically treatable and therefore suitable for organic recovery. The check list shall provide for the identification of any supplementary information (see Annex C).		P
<b>4.4.2</b>	<b>Supporting documentation</b>		
	The check list together with any other information( including externally sourced technical data) necessary to support the conclusions reached in the assessments shall be retained and made available for inspection if required.		P
<b>4.5</b>	<b>Application</b>		
	The application of this standard to any particular packaging shall be as specified in EN 13427:2000.		P
<b>5</b>	<b>Organization of a test scheme</b>		
	In view of the relative complexity of some of the procedures involved, it is essential that assessment and testing be undertaken in a formal and organized way. Whilst this standard does not attempt to specify such organization, a flowchart of a recommended scheme is provided in Annex B. Where required the disintegration test may also be used to obtain information on any negative effects that the packaging material or packaging could have on the composting process. Compost is not only the final product of the aerobic composting process but also the aerobically stabilized product of the anaerobic biogasification process. Where appropriate an anaerobic disintegration test may be performed additionally.		P
	NOTE It is important to recognise that it is not necessary that biodegradation of packaging material or packaging be fully completed by the end of biological treatment in technical plants but that it can subsequently be completed during the use of the compost produced.		N
<b>6</b>	<b>Laboratory tests on biodegradability</b>		

Clause	Requirement-Test	Result-Remark	Verdict
	<p>Only biodegradation tests that provide unequivocal information on the inherent and ultimate biodegradability of a packaging material or its significant organic constituents shall be used. The controlled aerobic composting test , which is technically identical with ISO 14855:1999 shall be used unless inappropriate to the type and properties of the material under test.</p> <p>In the event that alternative methods are necessary an internationally standardized biodegradability test method (see ISO/TR 15462) shall be used, in particular ISO 14851:1999 and ISO 14852:1999 which are designed for polymeric materials.</p>		P
	<p>NOTE 1 Information on how to handle materials having poor water solubility for use in aquatic biodegradation tests may be obtained from ISO 10634.</p>		N
	<p>NOTE 2 For the purpose of this standard it is sufficient to determine biodegradability under aerobic conditions. If in a special case additional information on biogasification is required, a method with a high-solids test environment such as ISO 15985 should preferably be used. For screening anaerobic biodegradability for example ISO 14853:1999 or ISO 11734 may be used.</p>		N
<b>7</b>	<b>Determination of disintegration</b>		

Clause	Requirement-Test	Result-Remark	Verdict
	<p>Unless technically impossible the packaging, packaging material or packaging component shall be tested for disintegration in the form in which it will ultimately be used. The controlled pilot-scale test shall be used as the reference test method. A test in a full-scale treatment facility, may, however, be accepted as equivalent. The pilotscale test simulates, as closely as possible, the real conditions of a high-level aerobic composting facility whereas a full-scale facility (technical composting plant) has always by definition real conditions and treatment periods.</p> <p>In practice packaging materials are tested and from this it is concluded that a complete packaging will be disintegrated if all of its materials are capable of disintegration. A complete packaging should, however, be tested in cases where a direct conclusion is not possible e.g. if two or more packaging materials are firmly joined together forming a fixed multi-layer structure.</p> <p>Due to the nature and analytical conditions of the disintegration test the test results cannot differentiate between biodegradation and abiotic disintegration but they are required to demonstrate that a sufficient disintegration of the test material is achieved within the specified treatment time of biowaste. By combining these observations with the information obtained from the laboratory tests it can be concluded whether a test material is sufficiently biodegradable under the known conditions of biological waste treatment and whether biodegradability can be brought to a conclusion with the use of the compost. Pilot-scale composting tests are also suitable instruments for investigating any negative effects of the test material on the composting process if sufficient test material is introduced. This can be achieved by direct comparison of process parameters in reactors with and without test material.</p> <p>The compost obtained at the end of the disintegration test may be used for analytical and biological quality control testing. When tests on ecotoxicity are performed it is important to use compost from disintegration tests which have been run with and without the test material to compare the test results directly and to find out any relative ecotoxic effects (see clause 8).</p>		P
	NOTE 1 For the purpose of this standard it is sufficient to determine disintegration under aerobic composting conditions. If in a special case information on anaerobic treatability is required an anaerobic pilot-scale test or a full-scale facility for solid waste treatment should be used.		N
	NOTE 2 Special attention should be given to the visual aspects of compost. Visual contamination of compost, as evidenced by reduction of aesthetic acceptability, should not be significantly increased by any post composting residues of the packaging material introduced.		N
<b>8</b>	<b>Quality of the final compost</b>		
<b>8.1</b>	<b>Rationale</b>		

Clause	Requirement-Test	Result-Remark	Verdict
	<p>As the quality of compost may be influenced by any packaging, packaging material or packaging constituent added, it is preferable that evaluation of any possible environmental risk attaching to such compost to be based upon the best criteria on compost quality available. This may be achieved, for example, by determination of the ecotoxicological effects of the biodegradation products of packaging materials or by performing ecotoxicological tests with compost produced with and without packaging material and comparison of the test results. Other methods for the same purpose and the pass levels required for the evaluation of the test results are, however, not yet established and need to be elaborated before they can be specified as reference methods for the purpose of this standard. Test methods and limit values based on such tests may be introduced into future revisions of this standard as more experience is gained.</p> <p>The final compost has to fulfil European or in absence national requirements for compost quality which include analytical and biological tests.</p>		P
<b>8.2</b>	<b>Determination of negative effect</b>		
	<p>The supplier of packaging, packaging material or packaging components, designated as organically recoverable, on the market shall as a minimum establish by a process of direct comparison that the quality of compost produced by a given "controlled waste treatment" process, as defined by the criteria listed below, is not negatively affected by the addition of that packaging material or packaging component. Physical-chemical parameters by which the compost quality shall be defined are :</p> <ul style="list-style-type: none"> <li>_ volumetric weight (density),</li> <li>_ total dry solids,</li> <li>_ volatile solids,</li> <li>_ salt content,</li> <li>_ pH,</li> <li>_ the presence of total nitrogen, ammonium nitrogen, phosphorus, magnesium and potassium.</li> </ul> <p>Ecotoxic effects on 2 higher plants shall be determined by comparing compost produced with and without addition of packaging material. The plant growth test OECD 208 shall be used, with the modifications described in Annex E.</p>		P

**Photos of the sample**



Picture 1



Picture 2

《1》 Indoor test

Day 1

Mar 1<sup>st</sup>, 2010; 09 30am  
Laboratory room test temperature 68° F,  
Humidity: 60%



Picture 3

《2》 Indoor test

Day 30

Mar 30<sup>th</sup>, 2010;09 30am  
Laboratory room test temperature 70° F,  
Humidity: 63%



Picture 4

《3》 Indoor test

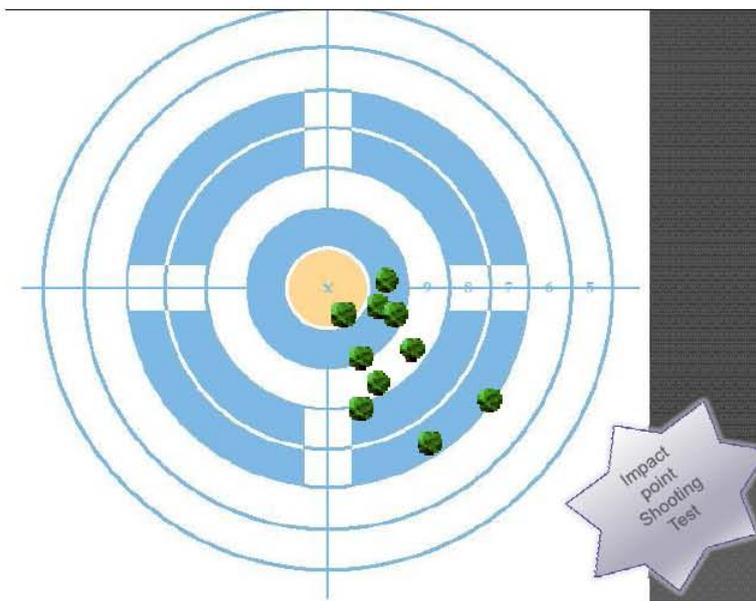
Day 140

Jul 18<sup>th</sup>, 2010;09 30am

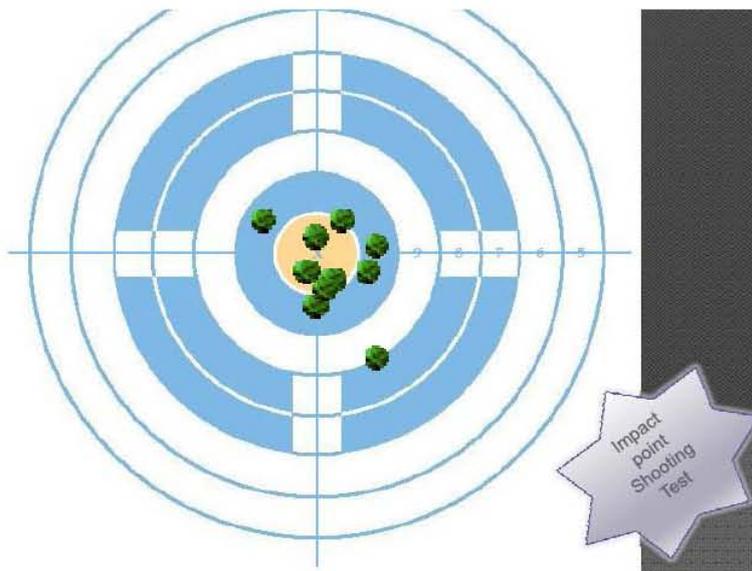
Laboratory room test temperature)70°F,  
Humidity: 65%



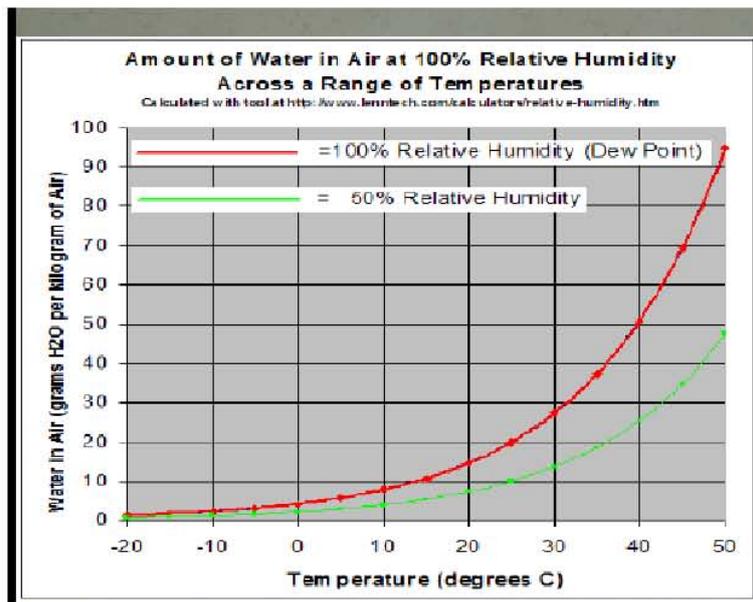
Picture 5



Picture 6



Picture 7



Picture 8



Picture 9



Picture 10



Picture 11



Picture 12

# **EC Declaration of conformity**

**Council Directive 94/62/EC (packaging and packaging waste Directive)**

**CIXI CHONGGAO SEAL PRODUCTS MATERIAL CO.,LTD**

HUSHAN STREET,CIXI,ZHEJIANG,315300,CHINA

Complies with the requirement set out the Council Directive 94/62/EC  
(packaging and packaging waste Directive)

**Product Name : Plastic Pellets**

**Item No: biodegradable plastic pellet 0.20g, biodegradable plastic pellet 0.25g**

The product has been assessed by the application of the following standards:

**EN 13432-2000**

\_\_\_\_\_  
Issue place and date

\_\_\_\_\_  
Company stamp and Signature of authorized personnel

## *Notice*

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4. This altered report shall be invalidation.
5. Client shall put forward demurrer within 15days after received report. The testing laboratory shall refuse disposal if exceeded the time limit.
6. The test results presented in this report relate only to the object tested.

Tel: 028-84874183

Fax: 028-84874181

Post code: 610100

Add: No.45 Wenming Dong Road Longquanyi District, Chengdu,  
Sichuan.