



BPI Certification Scheme

Compostable products, resins, and intermediates according to ASTM D6400 and ASTM D6868

(Approve February 2019)

Foreword

The International Biodegradable Products Institute (BPI) was formed as non-profit in 1999 with the goal of scalable diversion of organic waste to composting, by verifying that products and packaging will successfully break down in professionally managed composting facilities, without harming the quality of finished compost. BPI operates North America's leading certification program for compostable resins, products and packaging, and maintains a publicly available database listing every certified item by SKU.

Amendments

No amendments

Earlier versions

This is the first edition

Remark

The English version of this certification scheme shall be taken as authoritative. No translation allowed without permission, and no guarantee is given to translated versions. BPI's logos are fully registered trademarks that cannot be used without license.

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1. Scope

This certification scheme applies for compostable resins, intermediates, components and final products, in connection with the testing foundations named below, and contains all requirements on issuing of the BPI certification compostability mark.

This certification scheme establishes the requirements that need to be met by the final product, resins, component or intermediate directly, as well as requirements relating to the associated testing, monitoring and certification.

If a final product, resin, component or intermediate demonstrates conformity to the criteria specified in this certification scheme, then a certificate will be issued, and the final product, resin or intermediate will be listed in BPI's online database.

There is no legal right to receiving a certificate or any other confirmation of conformity.

2. Test and certification specifications

The following referenced documents are the basis for testing and certification. For undated references, the latest edition of the referenced document (including any amendments) applies.

Final products, intermediates/components, and resins can be certified and/or registered according to the following standards (certification standards):

ASTM D6400	Standard Specification for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities
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ASTM D6868 Standard Specification for Labeling of End Items that Incorporate Plastics and Polymers as Coatings or Additives with Paper and Other Substrates Designed to be Aerobically Composted in Municipal or Industrial Facilities

Final products, intermediates and materials are required to demonstrate compliance with the requirements of one of the two ASTM standard specifications, whichever is applicable. For example, products made of compostable biopolymers like cutlery and bags are certified to ASTM D6400, whereas products containing natural fiber like coffee hot cups are certified to ASTM D6868.

Laboratory testing must be performed according to the stipulations in the standards named above according to the standardized test methods listed, unless otherwise noted in this certification scheme.

Test methods:

ISO 14851	Determination of the ultimate aerobic biodegradability of plastic materials in an aqueous medium - Method by measuring the oxygen demand in a closed respirometer
ISO 14852	Determination of the ultimate aerobic biodegradability of plastic materials in an aqueous medium - Method by analysis of evolved carbon dioxide
ISO 14855-1	Determination of the ultimate aerobic biodegradability of plastic materials under controlled composting conditions -- Method by analysis of evolved carbon dioxide -- Part 1: General procedure
ISO 14855-2	Determination of the ultimate aerobic biodegradability of plastic materials under controlled composting conditions -- Method by analysis of evolved carbon dioxide -- Part 2: Gravimetric measurement of carbon dioxide evolved in a laboratory-scale test
ASTM D 5338	Standard Test Method for Determining Aerobic Biodegradation of Plastics Materials Under Controlled Composting Conditions
ISO 20200	Plastics -- Determination of the degree of disintegration of plastic materials under simulated composting conditions in a laboratory-scale test
ISO 16929	Plastics - Determination of the degree of disintegration of plastic materials under defined composting conditions in a pilot-scale test
OECD 208	Terrestrial Plant Test: 208: Seedling Emergence and Seedling Growth Test

The obligation to comply with relevant local laws and regulations governing the respective products is in no way affected by this certification scheme.

The obligation to comply with relevant local laws and regulations is the responsibility of the manufacturer and is not relevant nor taken into account in this certification scheme

3. Definitions

For the purposes of this certification scheme, the following definitions shall apply:

Ingredient	Substances or constituents, including a mixture of chemicals, added to a product, resin, or intermediate/component, e.g. adhesives, anti-blocking agents, plasticizers, inks.
Applicant	Applicants can be either manufacturers or brand owners.
Blank compost	Compost obtained from a parallel process without addition of sample material.
Blend	Physical mixture of 2 or more resins/materials without reactive process.
Certification	Proof of conformity with the requirements of the named standards as well as with this certification scheme. A licence to use the mark is granted.
Intermediate/Component	Semi-finished item that will require disintegration testing when converted into a finished product (e.g., coating, adhesive, packaging roll stock, etc.).
Resin	Polymeric material consisting of molecules characterized by the repetition (neglecting ends, branch junctions, other minor irregularities) of one or more types of monomeric units.
Product	Finished article as received at a composting facility.
Production facility	Location at which production of manufactured items is carried out. This is not necessarily identical to the certificate holder's address.

4. Certification Program for Compostability

Licensor will issue a Certificate to an Applicant, the Licensee or prospective Licensee, for a Product if it is determined, pursuant to the procedures set forth below, that all of the following criteria are met:

- The item (ie, resin, component/intermediate, or finished product) meets or exceeds the specifications set in ASTM D6400 or D6868, as demonstrated by tests performed by an Approved Testing Laboratory according to the methodologies specified in these specifications and approved by BPI.
- The item meets the Application and Review Requirements set forth in this document and is in continuing compliance with the BPI License Agreement.

The obligation to comply with laws and regulations governing the respective products is in no way affected by this certification scheme.

5. Application Requirements and Review

A. Customer Documentation and Samples

- a) Customers must complete the following forms:
 - a) Completed application (see formulation details below)
 - b) Manufacturing facilities must be listed
 - c) Confidentiality Agreement (CDA) if there is not a current version on file.

B. Formulation and Material Characteristics

- a) Full formulation disclosure of each ingredient, even if below 0.1%, including its associated dry weight percent and supplier information, CAS#'s and Safety Data Sheets (SDS) shall be submitted with the application for any ingredients that are not already BPI certified. The overall formulation percentage shall equal 100.
 - o In general, carcinogens, mutagens, or reproductive toxins (CMR) shall not be intentionally used as ingredients. Any unintentional traces or impurities classified as Category 1A or 1B carcinogens, mutagens, reproductive toxicants according to the most current version of the GHS¹, shall not exceed 0.1% per chemical by dry weight in the product being certified, as assessed by SDS or additional disclosures from suppliers.
 - o In general, substances identified as Persistent, Bioaccumulative, and Toxic (PBT) under US EPA or EU REACH Annex XIII shall not be intentionally used as ingredients, and shall not exceed 0.1% per chemical by dry weight in the final product.
- b) Any external ingredient/additive such as inks, coatings, lacquers and adhesives must be included in the formulation information.
- c) For multi-layer structures, each component must be separately listed, regardless of weight used, including adhesives.
- d) Description of the Product(s) as well as intended end use(s) and manufacturing processes for resins (injection, extrusion, thermoform, foodservice, film bags, laminations etc.) must be included in the application.
 - o Note: Once certified, only the specific brand names and item numbers (also known as stock keeping units or SKU under which the product is identified to customers) listed on the certificate are considered covered by the certification.
- e) Maximum thickness
- f) Maximum density/grammage (required for bagasse, molded pulp and paper products)
- g) Supplemental information (e.g. existing third party compostability certifications, test reports from approved testing laboratories).

C. Test Data to demonstrate compliance with ASTM D6400 or ASTM D6868

To carry out the inspections and tests necessary for the evaluation and certifications, BPI uses test laboratories either accredited in the appropriate scope, or audited to show compliance, managed by DIN CERTCO and published on BPI's website as an approved list.

BPI may consider review of test data under AS 4736 or EN 13432 if the resin or product is currently certified by a third party, within the time frame accepted by BPI. However, the final resin/product must still meet the requirements of either ASTM D6400 or ASTM D6868 in order to be considered for BPI Certification, the laboratory must then meet the requirements

¹ https://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

(retroactively based on raw data in an audit) and the tests must be released to BPI for their files.

All documents must be submitted in English.

D. Upon receipt of sample shipping forms, representative samples must be submitted to DIN CERTCO

Samples will be documented, with thickness/grammage measured, FTIR and photographs.

6. Testing requirements

A. Biodegradation: If test report is older than two years, at the time of application, the testing laboratory will be asked to confirm the validity of the results in writing and the manufacturer must confirm that the product/resin/intermediate/component has not been changed since testing.

a) For ASTM D6868, biodegradation by at least one of the following:

- (1) Provide evidence of biodegradation through the use of a Licensor Certified Product.
- (2) Provide evidence of biodegradation through testing performed by an Approved Testing Laboratory
 - (a) 90 % absolute biodegradation or 90 % relative to a suitable positive reference substrate, within 6 months. Evidence must be proven via a test according to the standards named under Section 2.
- (3) Ligno-cellulosic substrates are permitted to fulfill the biodegradation requirements by demonstrating that they are "materials of natural origin" and therefore assumed to be biodegradable by showing that over 95% of their carbon comes from biobased resources, using ASTM D6866.
 - (a) Any product using this rule must be evaluated under D6868, regardless of how small a proportion the paper is in the end item.
- (4) Ingredients added during the paper-making process or substrate formation do not require evidence of biodegradation if each remain below 1% by dry weight of the final product AND the total of these ingredients does not exceed 5% by dry weight.
- (5) External/surface modifiers, coatings, adhesive or must be evaluated separately for biodegradation regardless of the dry weight percentage within the formulation.
 - (a) This includes anything added to the surface of the base paper, even "in line" surface treatments like primers, water-based coatings, and clay coatings that have a polymeric binder.
- (6) Components on the Positive List in Appendix A may be permitted without biodegradation testing.
- (7) Any end item using the biobased qualification of a lignocellulosic ingredient must be evaluated to D6868.
- (8) Coffee capsules and multilayer flexible structures are evaluated according to D6868.
- (9) All waxes, including natural waxes, are not exempt and must be tested for biodegradation.

b) For ASTM D6400, biodegradation testing by at least one of the following:

- (1) Provide evidence of biodegradation through the use of a Licensor Certified Product.
- (2) Provide evidence of biodegradation through testing performed by an Approved Testing Laboratory

- (a) 90% absolute biodegradation, or 90% with a suitable reference substrate, within 6 months. Evidence must be proven via a test according to the standards named under Section 2.
- (b) Individual organic ingredients present in concentrations between 1%-10% by dry weight, including, pigments, inks, colorants, scents, secondary polymers, and glues, etc., must be tested separately.
- (c) Ingredients at or below 1% by dry weight are exempt from biodegradation testing, so long as the total of these does not exceed 5% by dry weight.
- (d) Ingredients used with proportions of more than 10% by dry weight of the item being certified may be tested separately or as part of the end item.
 - (i) If a copolymer or homopolymer is used above 10%, BPI reserves the right to request separate biodegradability testing of that component, with sufficient justification (e.g., for a traditionally non-biodegradable polymer such as polyethylene).
- (e) Components on the Positive List in Appendix A may be permitted without biodegradation testing.

B. Disintegration of the Final Product: If the test report is older than two years, at the time of application, the testing laboratory will be asked to confirm the validity of the results in writing and the manufacturer must confirm that the resin/product/component/intermediate has not been changed since testing. NOTE: Disintegration tests for components can be omitted. The other requirements need to be met.

- a) Quantitative disintegration of the final product at its maximum thickness, grammage and/or density, according to methods accepted in the most recent versions of ASTM D6400 or ASTM D6868 standard specifications.
 - (1) After composting for no more than 12 weeks, no more than 10% of the tested material's original dry weight may be found in a > 2 mm screen fraction. The test shall be carried out in accordance with the pilot-scale test in ISO 16929, or in case of smaller, two-dimensional materials like films, the lab-scale test ISO 20200. For ASTM D 6868 the test according to ASTM D 5338 is applicable as well. The particles or pieces which do not differ from the compost for color, structure, dimension, moisture feeling, and brightness/gloss are considered to be compost.
 - (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 introduced packaging material.
 - (3) Residues remaining in packaging or substances that may be dispatched along with the compost product must be suitable for composting.
 - (4) Manufactured items where the contents for the most part remain present in the product during and after use (e.g. beverage extraction from a bag or capsule), and would be received by composting facilities in this condition, shall be tested according to the Special Rule prescribed in Section 11, item VI.
 - (5) Deviating from the standard, the following shall apply additionally for uncoated paper and natural fiber products during sieving process, for those that have passed at least 80% of the quantitative disintegration but have not reached 90% quantitative disintegration:
 - i. The particles or pieces which do not differ from the compost in color, structure, dimension, moisture feeling, and

brightness/gloss are considered to be compost if the other requirements are met as well (biodegradation, ecotoxicity, heavy metals). Specifically, the following must be recorded at a minimum the beginning and the end of the disintegration test, and intermittently if possible:

- Evaluation of size distribution of the remaining particles of the product, their visual relevance for compost quality
- Description of the microbial population on the product (fungi, bacteria, etc.),
- Texture and material thickness
- Changes in color (e.g. decolorization) to match that of the compost
- Consistency and compactness of the material;
- Signs of local disintegration (e.g. the presence of holes)
- How easy (or difficult) it was to pick out the test material
- Documentation (e.g. photography) of all of the above

C. Compost Quality: If the test report is older than two years at the time of application, the testing laboratory will be asked to confirm the validity of the results in writing and the manufacturer must confirm that the product/resin/intermediate/additive has not been changed since testing.

- (1) Effects of compost on two higher plants shall be determined by comparing compost produced with and without addition of test material, according to OECD 208 with the modifications mentioned in EN 13432 (using compost instead of water or soil).
- (2) Compost to be used for plant toxicity tests shall be prepared according to ISO 16929 using a 10% sample input concentration, or ISO 20200 (so long as the concentration of the test items at the start of testing is in accordance with the requirements of ISO 16929, i.e. 10% dry weight test item). It is acceptable to use up to 9% of this input quantity in reduced-size form (e.g. as a powder).
- (3) Testing shall be run in line with OECD 208 with the modifications mentioned in EN 13432 (using compost instead of water or soil) and must include the germination rate and biomass results.
 - (a) Deviating from the standard, the use of minimum 50 seeds per replicate is allowed, if the test is performed using barley.
 - (b) It is possible to test samples designed to establish a maximum loading rate, rather than testing the actual finished item to be certified.
- (4) Ingredients above 0.1% by dry weight must be determined to be harmless for the composting process by one or more of the following:
 - (a) Safety Data Sheet
 - (b) Pass testing of the finished product containing that ingredient
 - (c) Pass testing of individual ingredient, either tested on its own or in combination with other ingredients
- (5) Ingredients below 0.1% by dry weight are not required to be tested separately. However, if these ingredients sum up to more than 0.5 % dry mass the following plant toxicity testing applies:
 - (a) Pass testing of the finished product containing these ingredients with their maximum intended usage or
 - (b) Pass testing of individual ingredients, either tested on their own or in combination with all the other ingredients summing up to 0.5% or more.

- (6) Regulated Metals & Total Fluorine Content (Test data must not be older than one (1) year)
 - (a) To be performed on the final product. Alternatively, in case of printed or colored products, the unprinted product and (a blend of) the inks can be analyzed separately as well. Must be no greater than 50% of thresholds listed for both the US (40 CFR Part 503.13) and Canada (Trade Memorandum T-4-93), without exception.
 - (b) Maximum of 100 ppm total Fluorine, to restrict fluorinated chemicals
 - (i) Naturally occurring fluorine resulting in greater than 100 ppm may be accepted if ingredients are isolated to demonstrate the source is not from a fluorinated chemical.
- (7) Ash Content - Volatile Solids Content (Test data must not be older than one (1) year)
 - (a) To be performed on the final product
 - (b) Must not exceed 50%
- (8) ATR or FTIR (Test data must not be older than one (1) year)
 - (a) To be performed on the final product / product layers.
 - (b) In case of multi-component structures, all components need to be analyzed (e.g., items that have been physically bonded that can be separated)

7. Certification Validity

BPI Reviews for an application will be valid for three (3) years, providing that the Product formulation is unchanged and the Product thickness or density is not increased. Applicants may recertify the Products within three (3) years of such approval. Recertification testing is performed on products, materials and intermediates every three years, to ensure that the formulation and configuration remain unchanged. This must be evidenced on schedule via confirmation of the current formulation, test reports from the last 12 months (Metals, Total Fluorine, Ash, FTIR, thickness, grammage), and samples sent in for assessment. If the formulation has changed significantly, additional testing may be required.

Applicant must follow instructions in Section 5 "Application Requirements and Review."

8. Modification of an existing Certification

The type and scope of supplementary testing will be determined by BPI in individual cases in coordination with the DIN CERTCO. This is typically for small changes, such as adding printing inks to a previously unprinted item.

Alterations/Amendments

The certificate holder is required to notify BPI of all alterations to the manufactured item without delay. BPI will decide the extent to which testing must be performed and whether the change is significant. The respective test report(s) shall be sent to BPI by the approved testing laboratory.

Should BPI and DIN CERTCO determine that a substantial alteration has occurred, the certificate with the corresponding registration number shall expire. For the modified manufactured item, a new application for initial certification authorizing the use of the compostability mark may be submitted.

The certificate holder remains responsible to notify of any changes in the formal details (e.g. name of certificate holder or his address). For this purpose an application for amendment must be sent to BPI. The certificate will be changed respectively.

The certificate holder may apply to BPI for an extension of the existing certificate for further design-types (sub-types) of the same type. It is for BPI to decide whether these amendments require a complementary examination. The design-types shall be entered in the certificate for the already certified product and, provided that the conditions are fulfilled, shall be regarded as an integral part of same.

9. Sampling

The samples used for initial, verification and re-certification testing must be delivered by the manufacturer to the testing laboratory which has been commissioned to perform the tests, and similar samples must be sent to DIN CERTCO as BPI's appointed technical reviewer (or a lab designated by DIN CERTCO). The manufacturer bears the associated costs.

10. Certification

Certification in the sense of this scheme relates to the assessment of conformity of an end item, intermediate or a resin by BPI and DIN CERTCO on the basis of test reports submitted by testing laboratories recognized by BPI and DIN CERTCO. In doing so, the end products, intermediate, or resin being certified with the requirements of this scheme and the respective standards are examined and subsequently monitored.

For certified resins and intermediates the right to use the logo is only granted for marketing and advertising reasons, not for labelling the product itself. A certification number is issued to the Applicant by BPI upon successful completion of the certification process.

References to manufactured items or resins that have already been certified could minimize testing expenditures.

Test reports may only be used by multiple Applicants with explicit written agreement about ownership.

11. Special Rules

I. Manufactured items composed of materials already certified (Blends)

If certification is being requested for an item consisting solely of materials already certified by BPI, and no further ingredients/additives are used, the following documents and information must be submitted along with the application form:

- A. List of the ingredients used, including percentages by dry weight.
- B. Quantitative disintegration test as specified in Section 6B.
- C. An infrared transmission spectrum and Ash test, a photo and a measurement of thickness or grammage.

The maximum layer thickness will be defined depending on the layer thicknesses tested.

II. Ranges in blends made from 2 different resins/materials:

It is possible to register composition ranges of two different resins/materials (A and B) that have already been registered. Doing so requires disintegration tests of the various compositions and continuous phases (e.g. ratio A/B of 20/80 and 80/20).

Provided that the range within the blend remains inside a certain threshold, some of the tests may be omitted. This must be determined in coordination with BPI, DIN CERTCO and, if applicable, the approved testing laboratory. This requires proof that the material forming the continuous phase does not change within the range (resin/material B instead of resin/material A is the continuous phase instead). A disintegration test is required for each continuous phase that occurs. If the quantitative disintegration tests for each continuous phase are performed with materials of different thicknesses, then the range of blends will only be certified up to the lowest thickness tested.

Example:

Tests required for a range of a blend of registered resin/materials A and B under the assumption that the resin/material with a share of 80 % forms the continuous phase (this shall be evidenced in the certification procedure):

Determination of degradation properties with resin/material A as continuous phase:

$$A/B = 80/20$$

Determination of degradation properties with resin/material B as continuous phase:

$$A/B = 20/80$$

If A/B 80/20 and A/B 20/80 are tested at different thicknesses, the range will be certified up to the lowest thickness only.

III. Variations in the manufacturing process.

To cover for variations in composition which are inherent to the manufacturing process, the BPI certificate, granted to a well-known basic material, is valid for a variant of this same material under the condition that this variant contains the same and no more constituents as the certified basic material and the ratio between the different constituents does not vary more than 20 % relatively speaking (e.g. the certification of a basic material with a composition of 70% - 20% - 9% - 1% is also valid for a variant with a composition of 70 +- 14% - 20 +- 4% - 9 +- 1.8% - 1 +- 0.2 % for the same components, taking into account that the total is still 100%). Subsequent variations must be compared to the tested material used in the original certification. BPI certification of a variant of a tested basic material having a composition falling within these levels of tolerance is not automatically granted and need to be checked by BPI for compliance.

IV. Manufactured items consisting of recycled paper

If BPI certification is sought for a final product or intermediate/component consisting of recycled paper, then the following information must be submitted along with the application form, in addition to the standard requirements.

- a) Initial Certification on finished product must additionally have:
 - i) Test report on the quality of the compost (plant toxicity) per ASTM D6868. If available, use samples from three (3) production runs to capture variation (lot to lot) as a composite sample.
 - ii) Signed self-declaration from Applicant of quality management procedures (GMPs) for recycled paper sourcing, such as FDA requirements guaranteeing a program is in place.² Self-declaration document should address, but not be limited to, the

² 21 CFR 176.260 Pulp from reclaimed fiber is referenced as basis for self-declaration

following elements to document an appropriate program is in place:

- (a) Control of fiber source
- (b) Safe for intended use
- (c) Contains no and was not used to hold a poisonous or deleterious substance
- (d) Processes to prevent contamination (e.g., biological, chemical, and/or physical).

b) Recertification of finished products must additionally have

- i) Self-declaration document should address, but not be limited to, the following elements to document an appropriate program remains in place:
 - a. Control of fiber source
 - b. Safe for intended use
 - c. Contains no and was not used to hold a poisonous or deleterious substance
 - d. Process to prevent contamination (e.g., biological, chemical, and/or physical)

V. Manufactured items composed of certified materials and materials indicated in Appendix A.

If certification is being requested for a manufactured item that is intended to contain the fillers and processing auxiliaries indicated in Appendix A, it is possible to certify individual compositions within a predefined composition range, without a new disintegration test (section III above).

Within the separate subgroups or sections (as per Appendix A), other mixtures may, under the following conditions, be certified up to the upper limit documented in the test report:

- a. For a certified material, a supplier change for a specific constituent(s) on the Positive List in Appendix A may be approved without a new disintegration test under the condition that the constituent formulation from the new supplier is identical to the original constituent(s) under consideration. As proof that the constituent from the new supplier does not introduce unacceptable levels of regulated metals into the environment, metals and FTIR tests must be submitted along with the application form.

VI. Products/packages where the contents remain in the item as received by compost facilities (e.g. coffee pods)

For the purpose of assessment, these products are defined to be composed of an outer envelope or enclosure and internal contents, where the purpose is water extraction of the contents. The contents remain within the envelope or enclosure during product use and, for the most part, after use (e.g. after water extraction through a capsule), and the item would be received by a compost facility in this condition. The products allowed under this Special Rule are coffee, tea, soup, and similar food or beverage substances.

The outer envelope or enclosure represents the part of the product containing the contents and includes capsules, pads, and bags.

Assessment of products under this Special rule shall consist of the following:

“(1) Industrial waste from the manufacture of paper and paperboard products excluding that which bears or contains any poisonous or deleterious substance which is retained in the recovered pulp and that migrates to the food, except as provided in regulations promulgated under sections 406 and 409 of the Federal Food, Drug, and Cosmetic Act. (2) Salvage from used paper and paperboard excluding that which (i) bears or contains any poisonous or deleterious substance which is retained in the recovered pulp and that migrates to the food, except as provided in regulations promulgated under sections 406 and 409 of the act or (ii) has been used for shipping or handling any such substance.”)

- a) The biodegradation, ecotoxicity, and material characterization on the product shall be performed only on the outer envelope or enclosure without the contents (i.e. without the coffee, tea, or other food or beverage substance).
- b) The quantitative disintegration shall be performed on the whole product, that is, outer envelope or enclosure with contents. The quantitative disintegration test can be performed on a wet product, corresponding to an actually used coffee pad/capsule or tea bag. The 1% sample loading specified by ISO 16929 and in Section 4, Disintegration of the Final Product, would in this case refer to the dry weight of the outer envelope or enclosure without contents. Because the envelope or enclosure will still contain its contents when it is tested for disintegration, the amount of sample material compared to the compost might become too high and possibly hinder the composting process. Therefore, only for items assessed under this Special Rule, it is allowed to reduce the percentage of the dry weight of the outer envelope or enclosure down to 0.5% relative to the wet weight of the compost.
- c) An additional quantitative disintegration test is required for a change of content category (e.g. changing from tea to coffee) of a previously tested outer envelope or enclosure. This additional test is not required for changes within a content category (e.g. changing types of coffee).
- d) No additional quantitative disintegration test is required for a change in filter or lid, if that filter or lid is certified separately or if test reports on the new item demonstrate compliance with the ASTM standards. A change to the main structure (e.g., the rigid ring or cup) would require a new quantitative disintegration test.
 - i. If the new filter/lid in use contains a new adhesive for the ring/filter/lid/capsule substructure, then a new quantitative disintegration test is required.

VII. Special cases for Products/Intermediates

a. Hollow body

In the case of hollow bodies with small diameter apertures (e.g. drinking straw), the maximum permissible wall thickness d_{max} is limited to 50 % of the certified material thickness. This applies to all hollow bodies for which the ratio of volume to aperture area yields a value for x greater than 10 cm.

Calculation is based on the following formula:

$$x = \frac{\text{container volume}}{\text{aperture area}}$$

b. Packaging units

Packaging units are distinguished in easily manually separable units and not easily manually separable units.

1. Easily separable units (e.g. yoghurt containers with lids).

These products will be processed as a packaging unit. All parts must independently show conformity with this certification scheme. Therefore, the calculation of potential ingredients will be referred to each single unit. Nevertheless, the complete and un-separated packaging unit needs to meet the requirements as well.

2. Not manually separable units

This refers to products like labels on packaging. These products will be processed as one unit. Any ingredients contained are being related to the whole unit.

If only part of the item is compostable, and would need to be disassembled, consideration is needed for appropriate labeling, and likelihood that a consumer will actually do the sorting. These must be reviewed on a case-by-case basis.

VIII. Self-adhesive labels

1. The certification mark shall only be used on self-adhesive labels in the following cases:
 - a. When directly applied to fruits or vegetables;
 - b. If sold exclusively with a certified product or package, and fulfilling the following requirements.
2. A certified self-adhesive label and a certified product (film, takeout container, packaging) can be combined into a finished package or product, provided the following conditions are fulfilled:
 - a. The maximum surface area of the label does not exceed 10 % of the total surface area of the package/film.
 - b. The maximum thickness of both the label and the package/film does not exceed 50 % of the certified thickness/grammage.

If above 10% of the total surface area then a quantitative disintegration test would be required. Additionally, the backing paper must be clearly identified to consumers as non-compostable, unless it has also been certified.

12. Sublicences

According to BPI's License Agreement the rules governing logo use and logo usage guidelines, sublicences are necessary if certified manufactured items are intended to be brought onto the market on behalf of companies other than the main certificate holder.

In all cases, a sublicense is only possible if the BPI License Member (in good standing) requests the sublicense be given to the applicant and the product to be sublicensed is not different in any way from what was BPI certified. This includes but is not limited to any changes in source or suppliers, printing, coatings, thickness, or if the product will be packaged with other products that are not BPI certified, etc. A sublicense is only valid as long as the original certificate is valid. All use of the BPI logo or claims on any sublicensed product, packaging or promotional materials must be approved by BPI.

Films, resins, and components are not typically sublicensed, due to the potential for false certification claims from companies converting these items into finished products.

I. **Types of sublicenses**

Sublicense 1: A sublicense agreement is required between BPI, the certificate holder and the sublicense applicant and the sublicense applicant must have its own unique logo/ID.

- A company (sublicense applicant) who does not hold the certificate wants to sell a BPI certified product as a product to be resold.
- The product is not visibly co-branded with the original certificate holder (only the sublicense applicant will have their brand on the product.)

Sublicense 2: A sublicense agreement is required between BPI, the certificate holder and the sublicense applicant may choose to use either its own unique logo/ID or the certificate holders but it must be uniform across all products.

- A company (sublicense applicant) who does not hold the certificate wants to sell a BPI certified product as a product to be resold.
- The product is visibly co-branded with both the sublicense applicant's brand and the original certificate holder's brand.

Sublicense 3: No sublicense is necessary – must use certificate holders BPI logo/ID.

- If a company (sublicense applicant) who does not hold the certificate wants to use a BPI certified product that will not be resold as a product (example: restaurant using a BPI certified cup) and it is visibly co-branded with both the sublicense applicant's brand and the original certificate holder's brand (the product must be co-branded, not just the outer packaging).

II. Certifying an identical product

If a company (not owned by the certificate holder) wants to make the same exact product certified by BPI, with the original certificate holders' permission, a sublicense is not sufficient; they must certify the product.

III. Adding a manufacturing site

If a company wants to add an additional production site or change the production site (owned or hired by the certificate holder) to make the same exact product certified by BPI for their use, then a sublicense is not necessary; they must demonstrate that it is the same exact product (e.g., sending samples produced at that site and FTIR testing, and thickness/grammage.)

13. Conformity assessment

On the basis of the documents submitted to BPI, DIN CERTCO will conduct the conformity examination. The assessment is made with the aid of the test reports as to whether the product meets the requirements of the certification scheme and of the underlying standards. The applicant will receive written notification from BPI in the event of any possible deviations.

14. Publication

All certificate holders can be viewed on BPI's database (www.products.bpiworld.org). Manufacturers, users and consumers use this research possibility for obtaining information on certified products.

Besides the contact details of the certificate holders (telephone, telefax, e-mail, homepage), it is also possible to view the technical data regarding dimensions and maximum layer thicknesses for the certified product and registered intermediate or material. Individual SKUs are listed for each certified item, and the published list is considered definitive.

15. Cancellation of certificates

In the event that the new certification assessment according to Section 5 has not been completed before expiration of the validity period, the certificates and the registration number expires without the necessity for explicit notification from BPI.

Furthermore, certificates can be cancelled if, for example:

- a. the BPI mark is misused by the certificate holder.
- b. the requirements laid down in the certification scheme or its accompanying documents are not fulfilled.

- c. if invoices are outstanding beyond 60 days.
- d. the prerequisites for the issuing of the certificate are no longer fulfilled.

16. Alterations to ASTM Standards, tests used in ASTM Standards or BPI Certification Scheme

If the test specifications/requirements are modified, an application for the alteration of the certification shall be generally submitted within 6 months of receiving notification from BPI, and, as a rule, after 12 months, proof of conformity with the modified specifications shall be submitted (e.g. in the form of a positive test report), where applicable. The exact time limit will be defined by BPI based on the alterations that were made.

17. Compliance checks for products, intermediates, materials

In the event that a certified product on the market is found to be defective, the certificate holder shall be contacted in writing by BPI to rectify the defects.

In conjunction with BPI, DIN CERTCO shall decide whether it is a serious or a minor defect.

In the case of serious defects having a direct or indirect effect on the degradation properties, the manufacturer must ensure that, until the defects have been rectified, the products are no longer marked with the mark of conformity.

The defects must also be rectified without delay in installed products or products in storage. The manufacturer must submit proof to BPI within 3 months, in the form of a test report on the product that the defects have been rectified and that the product in question again fulfils the stipulated requirements.

In the case of defects that have no influence on the degradation properties of the product (minor defects), the manufacturer must submit suitable proof to BPI within 3 months that the defects in the product in question have been rectified.

Should the manufacturer fail to observe these deadlines, the product certification will be cancelled.

Should grounds for complaint continue to exist, BPI shall initially suspend the certificate and at the same time issue a final deadline for the rectification of the defects. Should the certificate holder fail to meet this demand, or fail to meet it within the grace period, or if it is not possible to prove that the defects have been rectified, the certificate shall be cancelled.

APPENDIX

A Fillers, colors and processing auxiliaries

If a certification is being requested for a manufactured item that is intended to contain fillers and processing auxiliaries indicated below, it is possible to register individual compositions within a predefined composition range.

Materials that may be used in varying proportions up to the given upper limits as ingredients in manufacturing or processing of compostable materials, so long as metals requirements for the finished product are still met. Filler or fiber in excess of 3% by dry weight present in a product, regardless of whether it is listed below, requires the product + filler/fiber to be tested quantitatively for disintegration.

For a certified material, a supplier change for a specific constituent(s) on the list below may be approved without a new disintegration test under the condition that the constituent formulation from the new supplier is identical to the original constituent(s) under consideration. As proof that the constituent from the new supplier does not introduce unacceptable levels of regulated metals into the environment, metals and FTIR tests must be submitted along with the application form.

Main Group 1: Fillers

Subgroup 1.1: Inorganic constituents (fillers and pigments) - admixture up to a maximum of 49 %

- a. Aluminium silicates
- b. Ammonium carbonate
- c. Calcium carbonate or chalk
- d. Calcium chloride
- e. Carbon black (pigment)
- f. Dolomite
- g. Iron oxides (pigment)
- h. Graphite (pigment)
- i. Gypsum
- j. Kaolin clay
- k. Mica
- l. Natural silicates
- m. Silicon dioxide; quartz
- n. Sodium carbonate
- o. Talc
- p. Titanium dioxide (pigment)
- q. Wollastonite

Subgroup 1.2: Organic fillers - admixture up to a maximum of 49 %

Subgroups 1.2.1 and 1.2.2 refer to filler materials, not to substrates.

Section 1.2.1: Non-modified native cellulose

- a. Vegetable fibers

Section 1.2.2: Non-modified native ligno-cellulose

These chemically unmodified materials are used as filler materials or reinforcing materials for biopolymers according to ASTM D 6400. They are excluded from biodegradation testing, however, disintegration, ecotoxicity and metal and Fluorine requirements must be met. For the use as substrates, biobased testing rules in ASTM D 6868 applies.

- a. Wood flour/wood fibers
- b. Vegetable fibers
- c. Cork
- d. Bark

Section 1.2.3: Chemically Non-modified natural starch

- a. Starch
- b. Rye flour and other flours

Examples for chemically unmodified starch are physical reduction of molecular weight (e.g. by means of mineral acids) or similar. They are excluded from biodegradation testing, however, disintegration, ecotoxicity and metal and Fluorine requirements must be met, if applicable, e.g. depending on the information in the Safety Data Sheet (purity, CAS-No., etc.)

Main Group 2: Processing auxiliaries**Subgroup 2.1: Processing auxiliaries - admixture up to a maximum of 10 %**

- a. Benzoic acid/sodium benzoate
- b. Erucic acid amide/erucic amide
- c. Glycerol monostearate
- d. Glycerol monooleate
- e. Stearates
- f. Urea

Subgroup 2.2: Processing auxiliaries - admixture up to a maximum of 49 %

- a. Glycerin/glycerol
- b. Sorbite
- c. Citric acid ester (with linear, aliphatic chains up to a chain length of C22)
- d. Glycerol acetates
- e. Xylite