



PLASTIC FREE STANDARD PRODUCT FOURTH ISSUE



eco sphere academy

PLASTIC FREE STANDARD PRODUCT

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1. Introduction

The aim of this standard is to reduce the use of conventional plastics and encourage the adoption of more sustainable materials.

The Plastic Free standard - Product is the simplest way to certify that a certain product or packaging contains no conventional plastic. It is an international and voluntary standard that sets requirements for third party certification of Plastic Free products, packaging and materials, and is not intended to replace the legal or regulatory requirements of any country. It is the responsibility of each operation to demonstrate compliance with all applicable laws and regulations.

Conventional plastic is what we see everywhere - PET, PS, PVC, PP, PE etc. The vast majority is derived from unsustainable and non-renewable fossil fuel sources, although conventional plastic can now also be manufactured from plants to produce a product with the same chemical structure and, critically, the same indestructible qualities. Plant-derived plastic is sometimes called “bio-plastic”, and is a perfect example of the dated and confusing language used to define plastic.

For absolute clarity, we call these kinds of plastics conventional plastic to clearly differentiate them from any compostable material, and to be aligned with the terminology used by the EU.

Material Categories:

The standard covers two categories:

- Plastic Free – products without plastic components.
- Conventional Plastic Free – products without conventional plastic components and containing polymeric materials consisting of at least 80% of the mass of each individual component from biobased materials. For single use items, the required biobased percentage is 90%.

2. Definitions

Audit: assessment to measure compliance with a predetermined system, and whether the system is implemented effectively, and is suitable to achieve objectives.

Auditor: A person possessing the appropriate competencies and skills to carry out an audit.

Biobased: derived from biomass, i.e. from renewable organic material of vegetable, animal or microbial origin and from non-fossil fuel derivatives.

Certificate: the document issued by CUUK to confirm that an organisation has met the requirements of the Plastic Free standard - Product;

Certification: the procedure by which an authorised certification body, based on an audit and assessment of an organisation's competence, provides written assurance that an organisation conforms the standard's requirements.

Certification Body (CB): an independent third party that handles an audit and certification process.

Chain of Custody: the process by which inputs, outputs, and associated information are transferred, monitored, and controlled as they move through each step in the relevant supply chain.

Component/constituent: an identifiable component of a product that can be separated by hand or by using simple physical means.

Compostable/Compostable Material: material that undergoes degradation by biological processes during composting to yield CO₂, water, inorganic compounds and biomass at a rate consistent with other known compostable materials and leave no visible distinguishable or toxic residue.

Conventional Plastic: fossil fuels-based plastics, including polyethylene (PE), polypropylene (PP), polyurethane, polyethylene terephthalate (PET), polystyrene (PS), PVC, etc.

Manufacturer: a company that produces products from raw materials and/or components and supplies products to a customer.

Material: the elements, constituents, or substances of which a product is composed or made.

Non-conformity (NC): any failure to meet a standard requirement.

Organisation: The legally registered entity with legal ownership of the product/site which is being audited against the standard (alternative term is “company”)

Packaging: outer layer, such as a carton or tray, used to protect products from damage and often printed with information about the product.

Packaging Component: part of packaging that can be separated by hand or by using simple physical means.

Plastic: Synthetic or semi-synthetic material composed primarily of organic polymers of high molecular weight and which, at some stage in its processing into finished products, can be shaped by flow.

Plastic Free materials: metal, wood-based products, glass, and any other non-plastic material that can be recycled.

Procedure: Agreed method of carrying out an activity or process which is implemented and documented in the form of detailed instructions or process description (e.g., a flowchart).

Product: anything which is manufactured or sold and can be a material, a semi-finished/intermediate product, or a final retail ready product.

Single-use: any item for which only one use is foreseen before they are disposed of in waste.

Site: a unit of a company, the entity, which is audited, and which is included in the audit report and certificate.

Scope Certificate: document detailing the scope of the certification, the certified company’s details, and the certified products details.

Standard Owner: organisation responsible for the development and maintenance of the standard, owns the logo, and manages the labelling scheme. The standard Owner must also ensure that the scheme continues to meet market needs.

Specification: An explicit and detailed description of a product, packaging, or material.

Traceability: ability to trace and follow raw materials, components, and products through all stages of receipt, production, processing, and distribution.

3. Scope

This standard applies to any product which is free from conventional fossil fuel-based plastics. It specifies the requirements and test methods for products to be accredited as Plastic Free or Conventional Plastic Free.

Products are only considered Plastic Free/Conventional Plastic Free if all the individual components and constituents meet the requirements set out herein.

This standard enables certified organisations to make claims about the Plastic Free/Conventional Plastic Free nature of their products/packaging/materials at each step of its transformation, up to the final consumer.

This standard does not provide information on requirements for the biodegradability of Plastic Free/Conventional Plastic Free products which end up in the environment as litter.

The scope of the Plastic Free standard - Product does not cover foods and drinks products.

Products can be qualified for six different scopes, as shown below.

Plastic Free - Product	Conventional Plastic Free - Product
Plastic Free - Packaging	Conventional Plastic Free - Packaging
Plastic Free - Material	Conventional Plastic Free - Material

With regard to the differentiation between plastic and conventional plastic, reference is made to the definitions above.

To qualify for the Plastic Free – Product scope, both the content and the associated packaging shall comply with the requirements of the standard.

Where just the packaging complies to the standard, then only the claim for packaging is allowed. If the contents of the packaging are intended for human or animal consumption (e.g., foods, drinks, pharmaceuticals, animal feed), the Plastic Free certification can be issued for the packaging only.

Any unfinished, semi-finished, and intermediate product, component and subcomponent, substances and production materials can be certified under the scope of Plastic Free/Conventional Plastic Free Material.

4. General requirements

All products must be fully characterised chemically, physically, and visually, regardless of the intended scope of application.

All products must demonstrate that they are either entirely made of non-plastic materials (including microplastics), and, whenever possible, fully recyclable in the territory in which they are deployed or made, or Conventional Plastic Free, as previously described.

4.1. Legal and social compliance

- 4.1.1. The Organization shall demonstrate compliance with national laws and requirements related to its operation.
- 4.1.2. The Organization shall not use child labour in any way. The Organization shall demonstrate compliance with the national minimum age for employment and/or the age of completion of compulsory education, whichever is higher. In no case shall the Organization rely on work performed by children under the age of 14.
- 4.1.3. The Organization shall not use forced or compulsory labour as defined by the International Labour Organization (ILO) Convention C029 - Forced Labour Convention, 1930 (No. 29) and shall especially forbid itself to create any condition that will generate an unfair dependence of workers towards the Organization (such as retaining identity documents, salaries, generating debts).
- 4.1.4. Certified Organizations shall have a documented policy that promotes equal opportunities between genders, in terms of recruitment, compensation, access to training, promotion, termination, or retirement, complies with legal minimum wage requirements, upholds the right of everyone to a workplace free from discrimination, violence, and harassment, including gender-based violence and harassment, in accordance with the International Labour Standards on Equality of opportunity and treatment promoted by ILO.
- 4.1.5. Workers have the right to freedom of peaceful assembly and to freedom of association with others, including the right to form and to join trade unions for the protection of their interests. No restrictions shall be placed on the exercise of these rights other than such as are prescribed by law and are necessary in a democratic society in the interests of national security or public safety, for the prevention of disorder or crime, for the protection of health or morals or for the protection of the rights and freedoms of others.

4.2. Management system

- 4.2.1. The organisation shall have a dedicated management system to ensure that it can maintain its compliance to the requirements of this standard.
- 4.2.2. One person within the organisation shall be appointed as quality manager to oversee the

implementation of the standards' requirements.

This person shall also be the main contact person with the Certification Body during audits and their preparations.

4.2.3. The organisation shall have procedures that can be made available to the CB to demonstrate its compliance with requirements of this standard.

4.2.4. The organisation shall maintain documentation to prove conformity to the standard requirements. The organisation must be able to produce at least the preceding 4 years of audit records, accompanying data and documentation at the request of the auditor. The documentation to be maintained shall include a non-exhaustive list of records, including methods and procedures, product lists, purchases and sales documents including invoices, contracts, accounting records, list of customers and suppliers, list of subcontractors, training material, logo use and claims approvals.

4.3. Material sourcing and traceability

4.3.1. The Organization, depending on its nature and its production objective with regards to Plastic Free, shall purchase from:

- An Organisation certified to the Plastic Free Products, Packaging, Material standard;
- An Organisation certified to the Conventional Plastic Free Products, Packaging, Material standard;
- A non-certified organisation, providing that all the technical details and documentation can be provided as specified in the supply chain model section.

4.4. Supply chain model

The Plastic Free certification is structured as a hybrid Chain of Custody.

Plastic Free CoC can be started at any point of the supply chain. Once started, traceability must be maintained until the products, packaging and/or material is in the final state.

If the CoC does not stop at the material level, the applicant must be able to provide all the specifications to ensure that the product and/or packaging continues to maintains compliance with the standard.”

Plastic Free CoC can be started at any point of the supply chain. Once started, traceability must be maintained until the products, packaging and/or material is in the final state. If the CoC does not start at the material level, the applicant must be able to provide all the specifications to ensure that the product and/or packaging comply with the standard.

5. Technical requirements

Each product and, if applicable, its components under assessment, shall be identified and characterised. Each of the following characteristics shall be established and declared including, where relevant, quantity relative to the requirement.

5.1. Conventional Plastic Free products

5.1.1. Chemical, physical, and visual characterisation

- Product identification: information necessary to identify the product (product description, product design)
- Product composition: detailed information to identify the composition of the product and its components has to be outlined and recorded. Testing is always required to verify the composition. Accepted testing methods are outlined in Annex 3.
- Absence of hazardous substances (Annex 1)
- Declaration of conformity: all products and components shall conform to all relevant national, regional, and international regulations and restrictions regarding food contact, substances deemed harmful to the environment, and substances of very high concern.
- Equivalent form: a product or component which has demonstrated to be Conventional Plastic Free in a particular form shall be accepted as being Conventional Plastic Free in any other form having the same composition or specifications.

5.1.2. Biobased content

- Products must be tested or certified 80% biobased, with the test or certification issued within the last 12 months.
- Single-use items must be tested or certified as 90% biobased, with the test or certification issued within the last 12 months.

5.2. Plastic Free products

5.2.1. Product characterisation

- Product identification: information necessary to identify the product (product description, product design)
- Product composition: detailed information to identify the composition of the product and its components has to be outlined and recorded. Testing is always required to verify the composition. Accepted testing methods are outlined in Annex 3.
- Absence of hazardous substances (Annex 1).
- Declaration of conformity: all products and components shall conform to all relevant national, regional, and international regulations and restrictions regarding food contact, substances deemed harmful to the environment, and substances of very high concern.

- Equivalent form: a product or component which has demonstrated to be Plastic Free in a particular form shall be accepted as being Plastic Free in any other form having the same composition or specifications.

5.3 Recycling

Products and their components should be suitable for recycling in the territory of their intended market.

Known impediments to recycling shall be avoided.

Residual quantities of substances like glues and inks containing plastic are allowed only if there are more stringent or legally mandated regulations to which the product must comply, or if there are no commercially available alternatives. However, the recyclability must not be affected.

All end-of-life claims should comply with ISO 14021:2016 - Environmental labels and declarations.

6. Audit protocol

6.1. Selection of an Audit Protocol

There are 2 ways for organisations to demonstrate their compliance to the Plastic Free standard: on-site audit and desk audit. The type of audit shall be decided according to a risk assessment conducted by the auditor.

6.1.1 On-site audit

The on-site audit consists of the following stages:

- Opening meeting, to confirm the scope of the audit
- Facility inspection, to review practical implementation of the system, including observing production procedures and interview of personnel
- Document review, a review of all the relevant documents for the management system, material sourcing, material handling, material and products record, and sales
- Final review of findings by the auditor and discussion of any non-conformity raised during the audit
- Closing meeting

6.1.2 Desk audit

The Desk audit consists of the following stages:

- Opening meeting
- Conducting interviews
- Completing checklists and questionnaires
- Conducting document review with client participation
- Conducting document review (e.g., records, data analysis)
- Analysing data

6.2. Non-Conformities Management

During the audit detailed notes should be made by the auditor regarding the conformities and non-conformities (NC) against the standard and these will be used as the basis for the audit report.

It is imperative to categorise and address these non-conformities systematically to ensure a consistent and effective approach. Each identified NC must be resolved by presenting a complete analysis of causes, corrections and corrective actions.

- 6.2.1. Major Non-Conformities: Issues considered critical to the integrity of the Plastic Free

Certification. organisations must resolve these within 30 days to avoid suspension from the date of the closing meeting.

6.2.2. Minor Non-Conformities: organisations are expected to address these issues within the certification window (12 months). If they persist at the renewal request, the new certificate cannot be issued.

6.2.3. Opportunities for Improvement: Suggestions that, while not obligatory, present opportunities for the organisation to enhance its plastic free commitment.

Specific criteria are established for categorising non-conformities. Reference is made to Annex 2 for the cited documentation.

6.2.4. Non-compliance related to "Product Characterisation (Section 5.1.1, 5.2.1 and Annex 2) "Hazardous Substances (Section 5.1.1, 5.2.1 and Annex 1)" "Equivalent Product" (where applicable, Section 5.1.1, 5.2.1 and Annex 2), "Biobased Content" (for Conventional Plastic Free Scopes, Section 5.1.2 and Annex 2) and deficiencies in providing the "Organisation Sheet" (Section 4 and Annex 2) are considered major non-conformities.

6.2.5. Non-compliance related to the "Legal and Social Compliance Sheet" (Section 4.1 and Annex 2), "Management System Sheet" (Section 4.2.3, 4.2.4. and Annex 2), "Organigram" (Section 4 and Annex 2), and "Appointment Letter" (Section 4.2.2 and Annex 2) within the General Requirements, as well as "Regulatory Compliance" (Section 5.1.1, 5.2.1 and Annex 2) and "Product Recycling Statement" (Section 5.3 and Annex 2), result in minor non-conformities.

6.2.6. Opportunities for Improvement encompass areas such as the "Code of Conduct" (Annex 2), the "Sustainability Report" (Annex 2) and the "Compostability Certificate" (Annex 2) when relevant.

More specific NCs and additional opportunities for improvement may be identified by auditors or certifying bodies.

At the closing meeting, the auditor shall present all the findings but shall not make comment on the outcome of the certification process.

Following a technical review of the audit report, the decision to award certification will be determined independently by the certifier.

If a non-certified organisation fails to provide proof of corrective actions on the detected Major NC within 30 days from the date of the closing meeting of the initial audit, the certificate will not be issued, and a full re-audit will be needed to proceed with the certification.

If a certified organisation fails to provide proof of corrective action within 30 days from the date of the detection of the Major NC, the certificate will be withdrawn.

Identified Major or Minor NC should be documented and actioned and the organisation must provide appropriate evidence of close-out within the indicated timescales. The Certification Body should review the information and confirm or withdraw the certification decision.

6.3. Recertification

Recertification is required to maintain the validity of the Plastic Free Product Certification. The following procedures shall apply:

6.3.1. Audit Timing: The recertification audit must be conducted within a period starting three months before and no later than 30 days before the expiration date of the current certification. This timeframe ensures adequate opportunity to address any identified non-conformities.

6.3.2. Evidence Submission: For the recertification, organizations are required to provide evidence that the product continues to comply with the requirements of the Plastic Free Standard. This includes the following:

- Periodic Laboratory Testing: As part of the recertification process, organizations must submit evidence of laboratory testing as described in Annex 3. This testing conducted every 12 months confirms that the product continues to meet the standard's criteria.
- Other Evidence: For all other evidence specified in Annex 2, if the requirements continue to be met and there have been no changes in the relevant aspects since the previous certification, a signed declaration confirming that no changes have occurred for each specific "subject" is sufficient.

However, if there have been changes, the organization must submit to a comprehensive recertification process. The audit report must provide detailed information regarding the changes, along with the necessary supporting documentation to demonstrate ongoing compliance.

6.4. Pre-audits / preassessments

Applicants wishing to gain certification against the Plastic Free standard can, as a first step and voluntarily, undergo an pre-assessment in which the applicants performance is provisionally evaluated against the Plastic Free standard. This type of assessment allows any potential issues in an applicant's performance to be identified in a confidential manner and enables clients prepare for a full Assessment by addressing any obstacles to certification identified during the pre-assessment.

From a wider perspective, a Pre-assessment process is also an excellent diagnostics tool to help clients towards improved sustainability.

In brief, the main objectives of a pre-assessment are to:

- Determine the likelihood of the applicant achieving Plastic Free Certification
- Identify the obstacles to certification as well as the likely non-conformities which certification would be subject to
- Clarify the practical aspects for a full assessment, i.e. determine the scope, identify the key tests

and determine the likely assessment outcomes.

The pre-assessment would be conducted in accordance with the prevailing Plastic Free Requirements and Processes and would result in the completion of a pre-assessment report. The applicant may want to select the sections of the requirements to concentrate on rather than go through the full criteria.

It is important to note that undertaking a pre-assessment does not confirm any certification status and any outcome from a pre-assessment does not guarantee a positive certification outcome.

7. Logo and claims

7.1. General requirements

- 7.1.1. Plastic Free claims are made when a certified organisation wishes to inform publicly, generally for marketing purposes, its compliance to the Plastic Free certification scheme.
- 7.1.2. All claims shall always conform with the requirements detailed in the standard and shall be true, accurate, and not misleading.
- 7.1.3. The use of the logo is compulsory for all claims, except on commercial documents such as invoices, quotations, and transport documents.
- 7.1.4. The logo shall be accompanied by the certificate number, displayed immediately beneath it, in order to uphold transparency and enable the search of the Certificate on the Scheme Owner's website.
- 7.1.5. Plastic Free Claims shall not be made in a way that may:
- Damage the reputation, credibility and goodwill of the Plastic Free certification scheme, the trademarks and/or the standard owner.
 - Cause confusion or induce misunderstanding.
 - Induce to understand that the certification covers aspects of the product beyond the scope of the Plastic Free certification scheme (quality for example).
 - Cause the public to believe that the standard owner, or the Certification Body is responsible, endorses or supports the activity of the SC (Scope Certificate) holder beyond the scope of the Plastic Free certification scheme.
- 7.1.6. In addition to the requirements outlined in this section, compliance with the "Regulation for the Use of the Trademark" by Eco Sphere Academy is required.

7.2. Approval

- 7.2.1. Prior to use, all assured claims require approval by the claim maker's certification body through a formal claim approval application, which grants use of the claim.
- 7.2.2. Designed artwork containing the Claim that the Organization wishes to use shall be sent for approval to the organisation's Certification Body prior to its use. The organisation shall keep a register of all approved uses by the Certification Body for at least 4 years. The standard owner will not approve claims of non-certified organisations.

7.3. Logo

- 7.3.1. The standard owner will distribute the Plastic Free logo and on-product labels high-definition files to the approved Certification Bodies for this certification scheme.
Certified organisations shall request these files from their CB.
- 7.3.2. The logos used shall always be from the original high-definition files as given by the

Certification Body. There are certain allowed variations of the original logo, to facilitate their usage on a broader scale, especially on products and packaging. The variations must be confirmed and agreed in writing with the scheme owners prior to use.

7.3.3. Certified organisations are allowed to use only the specific logo that corresponds to its particular certification category, as defined in chapter 3 "Scope".

7.3.4. There are two categories of claims under the Plastic Free Scheme, promotional claims, and product specific claims.

7.4. Promotional Claims

7.4.1. Promotional claims are claims made by a certified organisation to advertise its status as a scope certificate holder, its involvement in the Plastic Free certification scheme, and for the promotion of its products and services.

7.4.2. Promotional Claims can be for internal or external communications and are typically expected to be on marketing material, websites, corporate documentation as well as other promotional items.

7.4.3. Claims should be accurate, true, and never mislead consumers. organisations shall be very careful when making promotional claims so that the public clearly understands which products effectively are Plastic Free, especially when the organisation deals with non-certified products.

7.4.4. Clear separation between Plastic Free products and non-Plastic Free products shall be made on website, catalogue, banners, etc. Language such as "some of our products are Plastic Free certified" shall be used to clarify any possible ambiguity.

7.5. Product specific claims

Product-related claims are used to indicate that a product, category of products, or product component are certified. Because these claims are tied to an assurance process, particular care shall be taken to ensure they are true, accurate, and not misleading.

7.5.1. Product-related claims may be made on-product (e.g., hang tags/swing tags, labels, product packaging) or off-product (e.g., e-commerce/online product page, social media, magazine/online advertisement).

7.5.2. Product-related claims that appear on-product, such as on a label or statement printed, heat-transferred, affixed, or otherwise physically attached or applied to the product or its packaging, shall only be done so by certified organisations.

7.6. Suspension

Situations of non-compliance on the use of the logo and claims will result in the suspension of the certificate, which will be valid until the non-compliance is properly rectified. the rectification of non-compliance must be properly reported accompanied by objective evidence.

Annex 1 - Prohibited and restricted inputs

While the principal aim of this certification relates to a product being Plastic Free, concerns are increasing around the impact of certain chemical substances being applied in the market. In particular, the use of BPA, PFCs and substances known to be environmentally persistent and potentially damaging. As a result, the Precautionary Principle has been applied to BPA, PFCs, hazardous substances and all the Substances of Very High Concern.

Certified Organizations shall maintain Safety Data Sheets (SDS) for each substance, mixture, component, or material used in the production of Plastic Free Products.

The SDS shall meet at least one of the following criteria:

- ANSI Z400.1-2004, which identifies information that shall be included to comply with the U.S. OSHA Hazard Communication standard.
- Regulation (EC) No 1907/2006 (REACH), as adapted to take into account the rules for safety data sheets of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and the implementation of other elements of the GHS into EU legislation that were introduced by Regulation (EC) No 1272/2008 (CLP)⁹.
- Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Annex 2 - Required Documentation

This annex outlines the necessary documentation that must be provided as part of the application process for the Plastic Free - Product certification. The information presented in this annex serves as a guideline for applicants and certifying bodies to ensure compliance with the certification standard.

Subject	Requirements	Document	Description	Plastic Free Scopes	Conventional Plastic Free Scopes
General Requirements	As defined in Section 4.	Organisation Sheet	Description of the Organization and detailed specifications referred to legal and social compliance, Management system, Material sourcing and traceability, Supply Chain Model.	Necessary	Necessary
		Legal and social compliance Sheet	Report that comprehensively outlines the corporate policy adopted by the organisation.	Necessary	Necessary
		Management System Sheet	Standard operating procedure/ working instruction related to the plastic-free scheme.	Necessary	Necessary
		Organigram	Organizational chart, representing the hierarchical structure of the Organization.	Necessary	Necessary
		Appointment letter	Plastic-free management system responsible team's appointment letter.	Necessary	Necessary
		Code of conduct	Code of conduct of the Organization or any document defining its ethical standards and reflecting its values and principles.	Advisable	Advisable
		Sustainability Report	Sustainability Report of the Organization or any document that highlights its commitment to environmental, social, and economic responsibility.	Advisable	Advisable
Product identification	Absence of plastic or conventional plastic materials as defined in Section 5.1.1 and 5.2.1.	Product Technical Specification Sheet	Detailed description of the product, including chemical, physical, and visual characterisation, product design, dimensions, any relevant technical details.	Necessary	Necessary
Product composition		Materials and Components Sheet	A signed statement from the organization declaring the comprehensive list of all materials and components used in the product.	Necessary	Necessary
		Testing	Testing results as specified in Annex 3.	Necessary	Necessary
Hazardous substances	Absence of hazardous substances as defined in Annex 1	Material Safety Data Sheets	The MSDS shall meet at least one of the following criteria: - ANSI Z400.1-2004, which identifies information that shall be included to comply with the	Necessary	Necessary

			<p>U.S. OSHA Hazard Communication standard.</p> <ul style="list-style-type: none"> - Regulation (EC) No 1907/2006 (REACH), as adapted to take into account the rules for safety data sheets of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and the implementation of other elements of the GHS into EU legislation that were introduced by Regulation (EC) No 1272/2008 (CLP)9. - Globally Harmonised System of Classification and Labelling of Chemicals (GHS). 		
Regulatory compliance	Products and components shall conform to all relevant national, regional, and international regulations and restrictions regarding food contact, substances deemed harmful to the environment, and substances of very high concern, as defined in Section 5.1.1 and 5.2.1.	Declaration of conformity	A signed statement from the organization declaring its regularity is required.	Necessary	Necessary
Equivalent product	Same composition and/or specification of an already demonstrated Conventional Plastic Free/ Plastic Free product, as defined in Section 5.1.1 and 5.2.1.	Equivalent form	A product or component which has demonstrated to be Conventional Plastic Free/ Plastic Free in a particular form shall be accepted as being Conventional Plastic Free/ Plastic Free in any other form having the same composition or specifications. In this case, a signed statement from the organization including relevant evidence is required.	Only if relevant	Only if relevant
Recycling	Products and their components should be suitable for recycling in the territory of their intended market. Known impediments to recycling shall be avoided, as defined in Section 5.3.	Product recycling statement	A signed statement from the organization declaring the recyclability of the products and their components in the territory of their intended market. All end-of-life claims should comply with ISO 14021:2016 - Environmental labels and declarations.	Necessary	Necessary
Biobased content	Products must be tested or certified 80% biobased and single-use items must be tested or certified 90% biobased, as defined in Section 5.1.2.	Laboratory Test Reports Results or Biobased content certifications	<p>Products must be tested or certified 80% biobased. Single-use items must be tested or certified 90% biobased.</p> <p>Reference:</p> <ul style="list-style-type: none"> - EN 16640: "Biobased products - Biobased carbon content - Determination of the biobased carbon content using the radiocarbon method"; - European norm EN 16785-1 "Biobased products - Biobased content - Part 1: Determination of the biobased content using the radiocarbon analysis and elemental analysis"; - American standard ASTM 6866 "Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis"; - CEN TS 16137 "Plastics – Determination of biobased carbon content". 	Not relevant	Necessary
Compostability		Compostability certificate	The compostability certificate for the product verifies its adherence to internationally recognized standards, including ISO 17088 (Requirements for packaging recoverable through composting and biodegradation), EN 13432 (Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging), and ASTM D6400 (Standard Specification for Labeling of Plastics Designed to be Aerobically Composted). These standards ensure that the product undergoes thorough testing for its compostable attributes, encompassing biodegradability, ecotoxicity, and disintegration in composting conditions.	Not relevant	Advisable

Annex 3 - Testing admitted methodologies

This annex outlines the admitted methodologies for verifying the compliance of products with the Plastic Free Standard - Product. All testing results are treated confidentially.

For the initial certification of a product, one of the following methodologies must be applied to ensure a thorough analysis of the material composition:

1. Fourier Transform Infrared Spectroscopy (FTIR)

FTIR identifies and characterizes materials by analyzing the absorption of infrared light by their chemical bonds.

Purpose: To detect and confirm the presence of polymeric materials.

Methodology: The product or its components are exposed to infrared radiation, and the resulting spectra are compared to a reference library of known materials to identify polymeric functional groups (e.g., C-H, C=O, C=C).

Advantages: Non-destructive, reliable, and widely applicable to both natural and synthetic polymers.

2. Raman Spectroscopy

Raman spectroscopy provides complementary insights to FTIR, particularly for complex or opaque samples.

Purpose: To identify polymers and distinguish between similar materials.

Methodology: A laser illuminates the sample, and the scattered light is analyzed to generate a Raman spectrum, providing molecular structural information.

Advantages: Non-destructive and effective for samples that absorb infrared light poorly.

3. Gas Chromatography-Mass Spectrometry (GC-MS)

GC-MS offers a detailed molecular analysis of the material's composition.

Purpose: To confirm the absence of synthetic polymers and detect any additives or contaminants.

Methodology: The sample is vaporized, separated into components via gas chromatography, and analyzed by mass spectrometry to identify chemical compounds.

Advantages: Highly sensitive and capable of detecting specific compounds that other methods might miss.

If any plastic is detected and the product falls within the scope of Conventional Plastic Free certification, radiocarbon (carbon-14) testing to determine its biobased content will also be required.

4. Radiocarbon Analysis (Carbon-14)

Carbon-14 is a naturally occurring isotope found in all living organisms, its presence indicates that the material is biobased.

Purpose: To confirm the biobased content of the polymers and ensure that no fossil-based polymers are present.

Methodology: Radiocarbon testing measures the amount of carbon-14 present in the material.

Biobased content tests must comply with one of the following reference standards:

- **ASTM 6866:** An American standard that uses radiocarbon (carbon-14) analysis to determine biobased content in solids, liquids, and gases. Widely utilized in the United States for sustainability certifications.
- **EN 16785-1:** A European standard combining radiocarbon and elemental analysis to assess the biobased content of a wide range of products. It is the main reference in Europe for biobased products.
- **EN 16640:** Focused specifically on biobased carbon, using only radiocarbon methods without elemental analysis. It targets the biobased carbon fraction in materials.
- **CEN TS 16137:** A European technical standard dedicated to determining biobased carbon content in plastics using radiocarbon analysis. Primarily applied in the plastics industry.

For recertification, organizations may opt for Selective Solubility Testing with Solvents only if the product's composition has remained unchanged since the initial certification. However, this method cannot be used for three consecutive years.

5. Selective Solubility Testing with Solvents (Not Valid for First-Time Certification)

This method evaluates the solubility of materials in specific solvents known to dissolve common synthetic polymers.

Purpose: To confirm the absence of some fossil fuel polymers.

Methodology: The product is immersed in solvents such as acetone, toluene, or chloroform, and its reaction (e.g., dissolution, swelling, or no reaction) is observed.

Annex 4 - Laboratories for Product Testing

The latest version of Annex 4 is available on the Eco Sphere Academy APS website (www.esasphere.com).

It serves as a reference guide for laboratories that perform FTIR testing and biobased content analysis, as required by the Plastic Free Standard - Product - Fourth Issue.



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