



Green Label Product Plastic Packaging (TGL-105-R1-22)

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Plastic Packaging

1 Background

Plastic has properties that are suitable for use as packaging because it is easy to transform, lightweight, strong, and durable. Plastic properties can be customized according to requirements. Plastic packaging can keep the product very well and can be used to replace other materials that are expensive. Therefore, plastics have been widely applied to many industries especially the packaging industry. Encouraging the recycling of plastics for packaging will help reduce the use of petroleum-based raw materials and the amount of plastic waste. For the most benefit, moreover, each type of plastic packaging may use different type of raw materials such as mono material, recyclable material and bio based material.

Therefore, developing the green label criteria of plastics packaging products, thus creating an alternative to reduce the environmental impact. These products must be able to reduce the burden of disposal and none harmful substances residue in the environment.

2 Scope

This green label requirement covers only plastic packaging used to contain or wrap products, where packaging made from OXO-degradable plastic or other substances that make plastic packaging compostable/biodegradable are not applicable.

3 Definitions

- 3.1 **Plastic packaging** refers to plastic contain or wrap for the purpose of collecting, prevent and maintain the product condition that convenient to transport and contributing to marketing and consumer benefits
- 3.2 **Recycled plastic** refers to plastic that is made of post-consumer plastic or post-industrial waste that was not contaminated with poisonous or hazardous substances.
- 3.3 **Post-consumer plastic** refers to plastic materials generated by households, or by commercial, industrial and institutional facilities as end-users of the product, in which they can no longer be used for their previous intended purposes. This includes returns of material from the distribution chain.

- 3.4 **Post-industrial waste** refers to waste or waste generated during manufacturing or processing processes in the factory before reaching the consumer. Products that are damaged or contaminated inside the factory are excluded from this definition.
- 3.5 **Bio based material** refers to products that mainly consist of a substance (or substances) derived from living matter (biomass) and either occur naturally or are synthesized, or it may refer to products made by processes that use biomass.
- 3.6 **Mono material** refers to a product which is only composed of a single type of plastic material whose composition is more than or equal to 90% by weight of the same type of primary plastic material and can be recycled into the original type of material.
- 3.7 **Recyclable material** refers to packaging made from used materials which can be recycled into the original type of material for use in the production of plastic packaging without causing toxic substances or residues to the environment exceed the threshold of these following requirements
- 3.8 **Letter for declaration of compliance** refers to a document issued by the applicant or manufacturers to ensure environmental requirements' compliance for respective products.
- 3.9 **Certificate** refers to a document issued by a certification body, which has been accredited by the Nation Accreditation Council (NAC) or International Accreditation Forum (IAF).
- 3.10 **Authorized director** refers to the person who has been authorized to sign on the behalf of a juristic person under Civil and Commercial code.

4 General requirements

- 4.1 The product shall be certified or passed the quality specification test from relevant Thai Industrial Standard (as Table 1), or tested for the required characteristics in accordance with relevant industrial standards or international standards (ISO) or national standards such as ASTM, JIS, DIN, EN, etc.

Table 1 Examples of the relevant Thai Industrial Standards

Standard	Product
TIS 665, Part 1	Plastic utensils for food- Part 1 Polyethylene, Polpropylene, Polystyrene, Poly (Ethlene Terephthalate), Poly (Vinyl Alcohol) and Poly (Methyl Pentene)
TIS 665, Part 2	Plastic utensils for food- Part 2 poly (Vinyl Chloride) polycarbonate polyamide and poly (Methylmethacrylate)
TIS 665, Part 3	Plastic utensils for food-Part 3 Acrylonitrile-Butadiene-Styrene and Styrene-Acrylonitrile

TIS 665, Part 4	Plastic utensils for food-Part 4 Melamine-Formaldehyde urea-Formaldehyde and Melamine-urea-formaldehyde
TIS 1027	Plastic bags for food
TIS 1136	Stretch cling film for food
TIS 2093	Acrylic plastics food utensils
TIS 2493, Part 1	Plastic food containers for microwave oven-Part 1 for reheating
TIS 2493, Part 2	Plastic food containers for microwave-Part 2 for single reheating
TIS 2504	Plastic sacks for packaging of foodstuffs
TIS 3022	Microwavable food plastic bag for reheating

Verification method

The applicant shall submit evidence such as a license of the Thai industrial product standard or the test result of the relevant Thai industrial product standard. or test results according to international standards or national standards

- 4.2 Manufacturing, transportation and post-industrial waste disposal shall comply with the national laws and regulations, or the manufacturer shall be certified by ISO 14001.

Verification method

The applicant must submit one of the following evidences:

1. License or evidence that the production, transportation and disposal of waste generated by the process produced in accordance with the laws and regulations of the government; or
2. ISO 14001 certificate

Remark: In the case of products imported into the factory, they must be certified with ISO 9001 (Quality Management System) and ISO 14001 (Environmental Management System)

5 Environmental requirements

- 5.1 In case that plastic package used for packing/contact with food, it shall pass the qualities or standards of plastic containers according to the Notification of the Ministry of Public Health (No. 295) Re: Qualities or standard for container made from plastic

Verification method

The applicant must submit a certificate specifying the qualities or standards of plastic containers according to the Notification of the Ministry of Public Health (No. 295) Re: Qualities or standard for container made from plastic.

5.2 In the case of plastic package used for functional purposes, the heavy metals shall not be used or intentionally added in the plastic packaging such as mercury, lead, cadmium, and hexavalent chromium

In case of heavy metal contamination in products caused by impurity and contamination from raw materials. Mercury, lead, cadmium and hexavalent chromium are allowed caused by contamination total not more than 100 mg/kg.

Verification method

The applicant shall submit test reports for products' heavy metal concentrations according to IEC 62321 or equivalent national standards (ASTM, JIS) or regional standards (EN) or international standards.

5.3 The following additives shall not be added in the manufacturing process.

1. OXO-degradable or other substances that make plastics biodegradable /compostable/ degradable
2. Arsenic, copper
3. Halogenated organic substances and halogenated organic solvents such as fluoropolymer additives CFC, HCFC, HFC, methylene chloride
4. 1,3-butadiene shall not more than 1 mg/kg
5. Chloroparaffins with a chain length of 10 to 13 carbon atoms, and chlorine concentration is more 50% by weight
6. Polyurethane foam made from blowing agent with CFC, HCFC, and HFC
7. Substances specified in Regulation (EC) No 1272/2008 as follows:
 - 1) H350 (may cause cancer)
 - 2) H340 (may cause genetic defects)
 - 3) H372 (causes damage to organs through prolonged or repeated exposure)
 - 4) H373 (may cause damage to organs through prolonged or repeated exposure)
 - 5) H360 (may damage the unborn child)
 - 6) H361d (suspected of damaging the unborn child)
 - 7) H341 (suspected of causing genetic defects)

Verification method

The applicant shall submit the letter of declaration for compliance notifying that did not use prohibited additives in the manufacturing process as defined in 5.3. The letter must be signed by the managing director or the authorized signatory of the manufacturing company or the person authorized to sign the juristic person certificate of the applicant company and stamp the company's seal.

5.4 The following flame retardants and plasticizers must not be used in the production process.

- Polybrominated biphenyls (PBB),
- Polybrominated diphenyl ethers (PBDE),
- Bis (2-ethylhexyl) phthalate (DEHP),
- Butyl benzyl phthalate (BBP),
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)

In case the contamination each type must not exceed 0.1% by weight (1,000 mg/kg).

Verification method

The applicant shall submit the results of the flame retardant and plasticizer test by using the test method according to IEC 62321 or other test methods that can test for the content of prohibited substances in plastic parts.

5.5 In case that plastic package used for packing/contact with food. Plastic resins used (classified by type) must meet one of the following requirements:

5.5.1 Made from mono material that is recyclable material.

Verification method

The applicant shall submit the certificate that ensure the packaging for food packaging made from mono material that is recyclable material following 5.5.1

5.5.2 Made from bio based material at least 25% by weight of the plastic package product

Verification method

The applicant shall submit the result testing of biomass-based plastic mass ratio requirement by C¹⁴ measurement accordance with the ASTM D6866-05

5.5.3 Recycled material shall be purified as a based substrate and meets the material standards for example, the process

- Depolymerization is degradation of the polymers or plastics used to contain food into monomer or oligomer, or
- Purification is purifying the raw material used as the based material, or
- Repolymerization is re-polymerize the based substance, or
- Chemical recycling is recycle used or residual plastics and plastic packaging as new precursors; or
- Innovation that can take post-consumer plastic and plastic packaging into the process as a new substrate

Verification method

The applicant shall submit the certificate to ensure that the apply packaging meet the requirements following 5.5.3

5.6 In the case of plastic package used for functional purposes. The product shall consist of a mixture of recycled plastic and/or post-industrial waste as follows.

5.6.1 Rigid plastic packaging shall meet one of the following criteria.

- 1) The product shall contain at least 30% by weight of recycled plastic content.
- 2) The product shall contain at least 40% by weight of post-industrial waste.
- 3) The product shall contain at least 35% by weight of recycled plastic and post-industrial waste.

5.6.2 Soft plastic packaging and film shall contain recycled plastic and/or post-industrial waste according to Table 2.

Table 2 Proportion of recycled content and /or post-industrial waste for soft and film plastic

Type of product	Proportion (% by weight of product)
Plastic shopping bag	≥ 50
Big bag	≥ 20
Woven sack	≥ 30
Film	≥ 30
others	≥ 30

Verification method

The applicant shall submit letter of declaration for compliance that the type and quantity of the composition are used in the manufacturing process as according in 5.6. The letter must be signed by the managing director or the authorized signatory of the manufacturing company or the person authorized to sign the juristic person certificate of the applicant company and stamp the company's seal.

- 5.7 The product must have a symbol indicating the plastic type according to the industrial product standard; Symbols for recycling plastics TIS 1310 or The abbreviation for plastic type, in accordance with ISO 1043 or ISO 11469, is indicated on the package or product.

Verification method

The applicant shall submit letter of declaration for compliance that the type and quantity of the composition are used in the manufacturing process as according in 5.6. The letter must be signed by the managing director or the authorized signatory of the manufacturing company or the person authorized to sign the juristic person certificate of the applicant company and stamp the company's seal.

5.8 Gathering package

- 5.5.1 Paper packaging shall contain recycled pulp at least 60% by weight.

Verification method

The applicant shall submit letter of declaration for compliance that the paper packaging is made from recycled pulp $\geq 60\%$. The document shall be stamped with the company hallmark and signed by authorized personnel of the packaging manufacturer.

- 5.5.2 Plastic packaging shall contain recycled plastic at least 20% by weight and shall be symbolized according to Thai Industrial Standard, TIS 1310 for recycling plastics or be marked according to plastic symbols and abbreviated terms given in ISO 1043 or ISO 11469.

Verification method

The applicant shall submit the letter of declaration for compliance that the plastic packaging is made from recycled plastic $\geq 20\%$ and a declaration letter indicating that the plastic packaging has been symbolized according to Thai Industrial Standard, TIS 1310 for recycling plastics or marked according to plastic symbols and abbreviated terms given in ISO 1043 or ISO 11469 and submit a photo of plastic packaging that shows the existence of plastic identification for inspection. The document shall be stamped with the company hallmark and signed by authorized personnel of the packaging manufacturer.

- 5.5.3 Inks, paints or pigments used for printing on the packaging or labeling on the packaging are allowed to have concentrations of mercury, lead, cadmium and hexavalent chromium not exceeding 0.01% (100 mg/kg) by weight due to impurity and contamination.

Verification method

The applicant shall submit either of the following evidences;

1. A declaration letter together with test reports for mercury, lead, cadmium and hexavalent chromium concentrations, issued by ink, paint or pigment manufacturer.
2. Test reports for mercury, lead, cadmium and hexavalent chromium concentrations using test method as following;
 - 2.1 Mercury concentration, test according to ISO 3856-7 or ASTM D 3624 or IEC 62321 or equivalent standards
 - 2.2 Lead concentration, test according to ISO 3856-1 or ISO 6503 or ASTM D 3335 or IEC 62321 or equivalent standards
 - 2.3 Cadmium concentration, test according to ISO 3856-4 or ASTM D 3335 or IEC 62321 or equivalent standards
 - 2.4 Hexavalent chromium concentration, test according to ISO 3856-5 or IEC 62321 or equivalent standards

- 5.9 There are guidelines to promote the waste management arising from the production process or from the use of plastic packaging, for example:

- Design to have a system to take back in the process to post-industrial waste or goods that have been disposed of which can still be used back into the new process to reduce waste as much as possible
- Product or components design for long-lifetime and facilitates easily recycling
- Plan or guideline for purchasing the waste packaging of manufacturer, etc.

Verification method

The applicant shall submit document of guideline for waste management with at least one example of the implementation of that approach. That document must be signed by the managing director or the authorized signatory of the manufacturing company or the person authorized to sign the juristic person certificate of the applicant company and stamp the company's seal.

6. Testing and Certificate

6.1 Testing

6.1.1 Laboratory with the competence of testing and calibration by TIS 17025 Standard or ISO/IEC 17025 or a laboratory registered with Green Label only (RR-203)

6.1.2 Testing result

6.1.2.1 The testing report that the method specified in the green label requirements.

6.1.2.2 In case, the applicant submits the testing report with according to other test methods equivalent to the method specified in the green label requirements, the applicant shall submit the document as follow;

1) The certified signature document of the apply product from the laboratory that equivalent with test method standard specified in the green label requirements

2) The method validation document of the product specified in the green label requirements.

6.1.2.3 The test report must not be more than 3 years up to the date of application for green label certification

6.2 Certificate of compliance with green label requirements

6.2.1 The certificate shall not exceed 1-year duration since the apply date

6.2.2 The certificate signed by legally authorized person and stamped with the company hallmark (if any)