



Green Label Product Natural material toys (TGL-111-16)

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TGL-111-16

Natural material toys

1 Background

Toy design and production has been dramatically developed, both of natural and electronic toys. At the moment, educational and stimulating toys made from natural materials, rubber in particular, including eco-friendly toys has increasingly demanded. Importantly, toys' design and manufacturing must be continually improved to ensure that they deliver the quality as well as minimizing their environmental effect.

Natural material toys herein refer to all toys that were made of wood, paper and natural rubber. The toys certified by Thai Green Label shall made from qualified natural materials, and the quantity of heavy metal is limited to the level that is not harmful to human health as well as restrict heavy metals' compound. In the end, prior measures aim to reduce pollution emission and ensure products' safety.

2 Scope

This criterion covers the toys that are made of wood, paper and natural rubber.

3 Definitions

- 3.1 **Natural material toy** refers to the products intended for children to play as defined in Thai Industrial Standard, TIS 685, which made of natural materials such as wood, paper and natural rubber.
- 3.2 **Children** refers to person who aged below 14
- 3.3 **Wood** refers to structural plant tissue that used as raw material, in a shape of a sheet or stick etc. Wood is classified as hardwood (such as shorea wood and phyllocarpus wood) and intermediate wood (such as pine wood and rubber wood).
- 3.4 **Natural rubber** refers to latex from the plants, commonly refers to latex from Pará rubber tree or *Hevea brasiliensis*, which consists of polymers with large molecule. Chemical structure of monomer consists of 5 carbon atoms and 8 hydrogen atoms (C₅H₈).
- 3.5 **Letter for declaration of compliance** refers to a document issued by the applicant or the manufacturer to ensure the compliance of respective products to environmental requirements.
- 3.6 **Certificate** refers to a document issued by a certification body, which has been accredited by the Office of the National Standardization Council (ONSC) or International Accreditation Forum (IAF).
- 3.7 **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 with Thai Industrial Standard, TIS 685 for Toys.

Verification method

The applicant shall submit the license to display industrial standard mark, TIS 685.

4.2 Manufacturing, transportation and post-industrial waste disposal shall comply with the national laws and regulations or the manufacturer shall be accredited by ISO14001.

Verification method

The applicant shall submit documents or evidence to prove that the process of production, disposal and transportation of waste follow the laws and regulations of the government, or certification of ISO 14001 from manufacturer.

5 Environmental requirements

5.1 The following additives shall not be used to manufacture a product.

5.1.1 Fragrances

5.1.2 Halogenated flame retardant such as Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs)

5.1.3 The materials that fall under Group 1, Group 2A and Group 2B, which are categorized as carcinogenic substances defined by International Agency for Research on Cancer (IARC). However, carbon black and titanium dioxide (TiO₂) shall be excluded because there is no risk of exposure by inhalation.

Verification method

The applicant shall submit a letter of declaration for compliance that the manufacturer did not use prohibited additives as defined in 5.1 together with list of chemical substances and safety data sheet (SDS) of additives that used in manufacturing process. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.2 Adhesives used in products shall not contain following substances.

5.2.1 Alkylphenol Ethoxilates and Alkylphenol derivatives

5.2.2 Ethylene Glycol Ethers (CAS Nos. 109-86-4, 110-49-6, 110-80-5, 111-15-9, 111-77-3 and 111-90-0)

5.2.3 Halogen solvents

5.2.4 Halogenated flame retardant such as PBBs, PBDEs

Verification method

The applicant shall submit a letter of declaration for compliance that the adhesives used in products did not contain prohibited substances as defined in 5.2 together with a list of chemical substances and safety data sheet (SDS) of adhesives that used in manufacturing process. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.3 Allergenic disperse dyes, carcinogenic dyes and other dyes specified in **Table 1-4** shall not be used as product manufacture.

Table 1 Dyestuffs classified as allergenic

CAS No.	Substance	CAS No.	Substance
2475-45-8	C.I. Disperse Blue 1	12223-33-5	C.I. Disperse Orange 37
2475-46-9	C.I. Disperse Blue 3	13301-61-6	C.I. Disperse Orange 76
3179-90-6	C.I. Disperse Blue 7	2872-52-8	C.I. Disperse Red 1
3860-63-7	C.I. Disperse Blue 26	2872-48-2	C.I. Disperse Red 11
12222-75-2	C.I. Disperse Blue 35	3179-89-3	C.I. Disperse Red 17
12222-97-8	C.I. Disperse Blue 102	119-15-3	C.I. Disperse Yellow 1
12223-01-7	C.I. Disperse Blue 106	2832-40-8	C.I. Disperse Yellow 3
61951-51-7	C.I. Disperse Blue 124	6373-73-5	C.I. Disperse Yellow 9
23355-64-8	C.I. Disperse Brown 1	12236-29-2	C.I. Disperse Yellow 39
2581-69-3	C.I. Disperse Orange 1	54824-37-2	C.I. Disperse Yellow 49
730-40-5	C.I. Disperse Orange 3		

Table 2 Dyestuffs classified as carcinogenic

CAS No.	Substance	CAS No.	Substance
3761-53-3	C.I. Acid Red 26	573-58-0	C.I. Direct Red 28
569-61-9	C.I. Basic Red 9	2475-45-8	C.I. Disperse Blue 1
632-99-5	C.I. Basic Violet 14	82-28-0	C.I. Disperse Orange 11
1937-37-7	C.I. Direct Black 38	2832-40-8	C.I. Disperse Yellow 3
2602-46-2	C.I. Direct Blue 6		

Table 3 Others

CAS No.	Substance	CAS No.	Substance
85136-74-9	C.I. Disperse Orange 149	6250-23-3	C.I. Disperse Yellow 23

Table 4 Azodyestuffs

Dyes that contain azo group (-N=N-) as chromophores, which are the compounds that can be degraded into the following amines.

CAS No.	Substance	CAS No.	Substance
92-67-1	4-aminodiphenyl	95-69-2	4-chloro-o-toluidine
92-87-5	benzidine	91-59-8	2-naphthylamine
97-56-3	o-aminoazotoluene	101-14-4	4,4-methylene-bis-(2-chloroanilene)
99-55-8	2-amino-4-nitrotoluene	101-80-4	4,4-oxideaniline
106-47-8	p-chloroaniline	139-65-1	4,4-thiodianiline
615-05-4	2,4-diaminoanisole	95-53-4	o-toluidine
101-77-9	4,4-diaminodiphenylmethane	95-80-7	2,4-toluylenediamine
91-94-1	3,3-dichlorobenzidine	137-17-7	2,4,5-trimethylaniline
119-90-4	3,3-dimethoxybenzidine	90-04-0	o-anisidine
119-93-7	3,3-dimethylbenzidine	95-68-1	2,4-xylydine
838-88-0	3,3-dimethyl-4,4'-diaminodiphenylmethane	87-62-7	2,6-xylydine
120-71-8	p-cresidine	60-09-3	4-aminoazobenzene

Verification method

The applicant shall submit a declaration of compliance that the manufacturers did not use prohibited dyestuffs as defined in 5.3 together with a list of chemical substances and safety data sheet (SDS) of dyestuffs that used in manufacturing process. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.4 Wooden product

5.4.1 Product shall be made from wood harvested from certified planted forests according to government regulations or origin certified wood.

Verification method

Domestic wood: The applicant shall submit the utilization certificate (NS. 3) or title deed or a letter of declaration from Royal Forest Department or a letter of declaration from the responsible department.

Imported wood: The applicant shall submit the certificate of wood origin from supplier.

5.4.2 Product shall be made of at least 70% wood.

Verification method

The applicant shall submit a declaration of compliance letter that the product is made of at least 70% wood. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.4.3 In the classification of hazardous preservatives defined by WHO, the preservatives that fall under extremely hazardous (Class 1a) and highly hazardous (Class 1b) shall not be used.

Verification method

The applicant shall submit a declaration of compliance letter that the manufacturer did not use hazardous preservatives as defined in 5.4.3 together with a list of chemical substances and safety data sheet (SDS) of preservatives that used in manufacturing process. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.5 Products made of paper

5.5.1 In the production of paper used in a product, chlorinated bleaching agents shall not be used for bleaching.

Verification method

The applicant shall submit a declaration of compliance letter that the bleaching did not use chlorinated bleaching agents. The document shall be stamped with the company hallmark and signed by authorized personnel of the pulp manufacturer.

5.5.2 Product shall be made of at least 70% paper.

Verification method

The applicant shall submit a declaration of compliance letter that the product is made of at least 70% paper. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.6 Products made of natural rubber

5.6.1 Product shall be made of at least 70% natural rubber.

Verification method

The applicant shall submit a declaration of compliance letter that the product is made of at least 70% natural rubber. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.6.2 The content of nitrosamines shall not exceed 0.05 mg/kg and the content of N-nitrosatable substances shall not exceed 1 mg/kg.

Verification method

The applicant shall submit either of the following evidences;

1. A declaration letter together with test reports on the content of nitrosamines and N-nitrosatable substances that issue by manufacturer.
2. Test reports for the content of nitrosamines and N-nitrosatable substances, test according to EN 71-12 or equivalent standards.

5.6.3 Lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Cr⁶⁺) and organotin compounds (TBT, TPT) shall not be used in product manufacturing.

Verification method

The applicant shall submit a declaration of compliance letter that the manufacturing process did not use substances as defined in 5.6.3 together with list of chemical substances and safety data sheet (SDS) of additives that used in manufacturing process. The document shall be stamped with the company hallmark and signed by authorized personnel of the manufacturer.

5.7 Packaging (if available)

5.7.1 The packaging shall be certified with Thai Industrial Standard, TIS 685-2 for Toys part 2 packages and labelling.

Verification method

The applicant shall submit the license to display industrial standard mark, TIS 685-2.

5.7.2 Plastic packaging shall meet one of the following criteria:

- 1) Plastic packaging shall be certified by Thai Green Label for plastic packaging (TGL-105).
- 2) Plastic packaging 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.

In the event of any conflict arising, the original criteria in Thai is to be final authority

Verification method

The applicant shall submit either of the following evidences;

1. The certificate of Thai Green Label for plastic packaging (TGL-105) or
2. 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 to confirm the existence of plastic identification. The document shall be stamped with the company hallmark and signed by authorized personnel of the packaging manufacturer.

5.7.3 Paper packaging shall meet one of the following criteria:

- 1) Paper packaging shall be certified by Thai Green Label (TGL-104).
- 2) Paper packaging shall contain recycled pulp and/or pulp made from agriculture residues as specified in product environmental requirements no. 5.1 of Thai Green Label for paper packaging (TGL-104) as shown in **Table 5**.

Table 5 Content of recycled pulp and/or pulp made from agriculture residues

Product categories	Content of recycled pulp and/or pulp made from agriculture residues (%by weight)
Shock-absorbing material	≥ 70
Tray	≥ 75
Cardboard box	≥ 70
Corrugated cardboard box	≥ 60
Mail envelope	≥ 20
Kraft paper bag	≥ 50
Molded products	≥ 90
Other packaging product	≥ 40

Verification method

The applicant shall submit either of the following evidences;

1. The certificate of Thai Green Label for paper packaging (TGL-104) or
2. An evidence indicating that the paper packaging is made from recycled pulp and/or pulp made from agriculture residues with specified content given in Table 5. The document shall be stamped with the company hallmark and signed by authorized personnel of the paper packaging manufacturer.

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

Remark: In the event that paper packaging or plastic packaging was certified by Thai Green Label, the applicant need not to submit the evidence as specified in the criteria no. 5.7.4.

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 suppliers.
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

6. Testing and certification

6.1 Testing

6.1.1 The laboratory shall be operated by the government or under governmental control as defined by clause 5 of the Industrial Standard Act B.E. 2511 (and its addenda) or certified by TIS 17025¹ or ISO 17025².

6.1.2 Test results

6.1.2.1 Test results shall comply with testing methods stated in this document.

6.1.2.2 If “comparable test methods” are submitted, the following documents shall be submitted with the test results:

(1) Declaration letter from the laboratory verifying that the test methods are comparable to the methods defined in this document.

(2) Method validation documents which enable unequivocal scientific verification that the testing methods and requirements defined in this document have been met.

6.1.2.3 Test results shall have been issued no more than 1 year following the application date.

6.2 A Declaration of compliance letter with Green Label requirements

6.2.1 Shall have been issued no more than 1 year following the application date.

6.2.2 Shall be signed by the authorized directors and have the company seal affixed (if relevant).

¹TIS 17025 General Requirements for the Competence of Testing and Calibration Laboratories.

²ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories.