Green Label Product
Leather Care Product

(TGL-100-15)

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Thailand Environment Institute (TEI)
16/151 Muang Thong Thani, Bond Street, Bangpood, Pakkred,
Nonthaburi 11120 Thailand
Phone:0-2503-3333 ext.303, 306, 315, 316, 329
Fax: 0-2504-4826-8
Website: http://www.tei.or.th/greenlabel/

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TGL-100-15
Leather Care Product

1 Background

A leather care product is used for maintenance of real or synthetic leather products such as leather furniture, shoes, leather wallet and other products. The manufacturing process, use, and disposal of this product may have environmental and health impacts such as the emission of hazardous substances and heavy metal contaminations.

Therefore, the Green Label certification for leather care products aims to tackle the effects it has on the environment and consumer safety by considering the ingredients used and biodegradability of the ingredients. Moreover, heavy metals are prohibited in color ink and pigment for printing on packaging. Finally, plastic packaging is required to display symbols to indicate the plastic type and a message "recyclable" to promote recycling and convenience in separating waste as well as encouraging manufacturers and consumers to take part in reducing environmental impacts.

2 Scope

This Green Label covers leather care products for real and synthetic leather in liquid and gel form packaged in a container. However, it does not include products that are packaged in metallic cans and compressed with aerosols.

3 Definitions

3.1 Leather care product refers to the product made from a mixture of aqua, organic solvent, and pigment for maintenance of real or synthetic leather products such as wallets, shoes, and belts.

3.2 Leather refers to product made from leather, which may be dyed with color before cut, sew, weaved, banded, stamped, perforated, and painted for design and desired patterns. It can be coated or varnished or can be composed of other accessories such as metals, plastic, and wood.

3.3 Synthetic leather refers to synthetic materials with surface, color and pattern that mimic real leather. It can be used to replace real leather in leather products.

3.4 Acute toxicity refers to the adverse effects occurring following oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or an inhalation exposure of 4 hours, which is expressed as LD_{50}.

3.5 LD_{50} (median lethal dosage) refers to the value at which the concerned substance causes 50% mortality of tested population when introduced.

3.6 Certificate refers to the certified document issued by recognized certification body, which is accredited by national accreditation body under IAF (International Accreditation Forum).

4 General requirements

4.1 The product shall pass the product quality requirements as follows:

4.1.1 General properties

4.1.1.1 Liquid form

Shall be homogeneous, even in colour, no secluded layer or precipitation, no contamination, and no disagreeable odour such as sour smell or rancidity.

4.1.1.2 Gel form

Shall be in semi-liquid (slurry) or semi-solid form, has a fine texture, homogenous, even in colour, no contamination, and no disagreeable odour such as sour smell or rancidity, which can be tested by inspection or shall pass product quality requirements under acceptable standards.

4.1.2 Utility

Shall be easily applied, not agglomerated, and leather product should be shined after coating with no stains (refer to test method in annex 1, section 1.2)

4.1.3 Drying period

Shall be dried within 5 minutes; product shall not stick to the hand and if fingerprints appeared on the leather surface, then it shall be easily cleaned (refer to test method in annex 1, section 1.3)

4.1.4 Stability

4.1.4.1 At low temperature

No secluded layers shall appear, touching or rubbing the product shall not cause irritation to the finger, easily attached to cloths and does not fall into pieces (refer to test method in annex section 1.4.1).

4.1.4.2 At high temperature

No secluded layers shall appear (refer to test method in annex 1, section 1.4.2)

Verification method

The applicant shall submit a test report as required in 4.1 or test report according to other recognized standards.

4.2 The product shall be registered with notification for import-export and for possession of hazardous substances under Thailand Hazardous Substance Act, B.E.2535 according to annex 1 and annex 2 in the Notification of Ministry of Industry on List of Hazardous Substances, B.E.2538 and its addenda (if any).

Verification method

The applicant shall declare a certificate for registration, notification for import-export and for possession of hazardous substances according to Ministry of Health regulations.

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

Verification method
The applicant shall submit one of the following documents:
1. License or evidence to prove that manufacturing, transportation, and post-industrial waste disposal complies with national laws and regulations
2. Certification of ISO14001 from the manufacturer

5 Product environmental requirements

5.1 Acute oral toxicity for oral lethal dose (LD_{50}) shall be more than or equal to 5,000 mg/kg.

Verification method
The applicant shall declare the calculations for acute toxicity of the product as required in 5.1 by using the following formula:

$$100/T_m = C_1/T_1+C_2/T_2+C_3/T_3+\ldots\ldots$$

Where,
T_m is acute toxicity value of product (mg/kg of tested animal body weight)
C_1, C_2, C_3,.. is percent concentration of each active substance in product
T_1, T_2, T_3,... is acute toxicity value of each active substance in product

5.2 The product shall be biodegradable according to the following requirements:
5.2.1 Removal of dissolved organic carbon (DOC) shall be more than 70%.
5.2.2 Biochemical oxygen demand (BOD) shall be more than 60%.

Verification method
The applicant shall declare a test report for the biodegradability of the product according to test methods under ISO 9439 or ISO 14851 or ISO 10707 or ISO 9408 or OECD 301 B or OECD 301 C or OECD 301 D or OECD 301 F.

5.3 The acidity and alkalinity for liquid product shall be in the range of pH 6.0 to 9.0

Verification method
The applicant shall declare a test report for the acidity and alkalinity according to test methods under Thai Community Product Standard TCPS 560 or other equivalent standards.

5.4 The emission volume of volatile organic compounds (VOCs) from product shall be as specified in Table 1.

Table 1 Volume of VOCs emission from product

Type of product	Emission of VOCs (percent)
Liquid	≤ 55
Gel	≤ 15

Verification method
The applicant shall declare a test report for VOCs according to the test method under ISO 11890-1 or ISO 11890-2 or ASTM D 3960 or other equivalent standards.

5.5 Ingredients used in the formula of the product shall not contain the following substances:

5.5.1 Hazardous substances

1) 2-butoxyethanol
2) Alkylphenol ethoxylate
3) Halogenated organic solvent
4) Nitro-musks
5) *o*- Phenylphenol or 2-Phenylphenol
6) Phthalates
7) Polycyclic musks
8) Triclosan

5.5.2 Heavy metals such as mercury, cadmium, selenium, hexavalent chromium and its compound.

5.5.3 Carcinogenic, mutagenic and reprotoxic in categories 1 or 2 according to Table 3.2 or categories 1A and 1B according to Table 3.1 of Annex VI in accordance with regulation (EC) No.1272/2008

Verification method
The applicant shall submit a declaration letter to ensure that prohibited substances in requirement 5.5.1, 5.5.2 and 5.5.3 were not used as well as declare list of actual chemical substances used in product.

5.6 Fragrances shall be certified from the International Fragrance Association (IFRA)

Verification method
The applicant shall declare names of chemical substances used as fragrances and submit a declaration letter to ensure that these substances have been certified by the International Fragrance Association (IFRA).

5.7 Plastic packaging shall be symbolized to indicate the type of plastic used according to TIS 1310 or display an abbreviation according to ISO 1043 or 11469.

Verification method
The applicant shall submit a declaration letter to ensure that plastic packaging is clearly symbolized by type of plastic used according to TIS 1310 or ISO 1043 or 11469 and other evidences such as a picture of the symbolized plastic packaging.

5.8 Metallic packaging, with no aerosol compression, shall display a logo with a message "recyclable packaging" on the label or mark on the package.

Verification method
The applicant shall submit a declaration letter to ensure metallic packaging has a logo for recycling as required in 5.8 as well as declare other evidences such as a picture of the logo and the message on the package.

5.9 Ink or pigments used for printing on packaging or labels on packaging shall not contain mercury, lead, cadmium, and hexavalent chromium.

Remarks: Total concentration of heavy metals (cadmium, lead, mercury, and hexavalent chromium) used for printing on packaging due to impurities or traces deriving from raw materials shall not exceed 0.01% (100 mg/kg) of the total weight.

Verification method

The applicant shall submit one of the following documents:

1. Declaration letter and test report for cadmium, lead, mercury, and hexavalent chromium from ink or pigment manufacturer (refer to test methods in no. 2)
2. Test report for cadmium, mercury, lead, and hexavalent chromium according to the following methods:
   - 2.1 For mercury, test method under ISO 3856-7 or ASTM D 3624 or IEC 62321, or other equivalent methods;
   - 2.2 For lead, test method under ISO 3856-1 or ASTM D 3335IEC 62321, or other equivalent methods;
   - 2.3 For cadmium, test method under ISO 3856-4 or ASTM D 3335 IEC 62321 or other equivalent methods;
   - 2.4 For hexavalent chromium, test method under ISO 3856-5 IEC 62321 or other equivalent method.

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 17025[1] or ISO 17025[2].

6.1.2 Test results

6.1.2.1 Test results shall comply with testing methods defined 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 Declaration letter to verify compliance 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).

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

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

Annex

1. Test methods for product properties

1.1 The acidity and alkalinity test

Weigh 1 g of leather care product sample with 0.001 significant levels in a beaker. Add 100 ml of distilled water and heat the mixture for 2 minutes at 35±5 ^{o}C until sample melted. Leave the mixture to cool down at room temperature, then separate the water layer from the wax layer. Determine acidity and alkalinity of liquid using pH meter.

1.2 Utility test

Prepare 150x150 mm of smooth/rough surface leather and cleaned the surface using clean fabric before coating with sample product. Apply leather care product following user manual guidelines and inspect the results after 5 minutes.

1.3 Drying period test

Cut and clean leather, then apply leather care product similar to number 1.2. Place the sample on the weighing apparatus. Then, use a dry thumb to push on surface of leather until the weight reached 2.5 kilogram for 1 minute. Lift the thumb up and determine whether or not the sample sticks to the thumb. If fingerprints appear on the sample, then it should be easily removed with clean cloth.

1.4 Stability test

1.4.1 At low temperature

Place the new closed lid product sample at 10± 2 ^{o}C for 2 hours. Afterwards, open the container and determine seclusion of liquid and texture of the sample.

1.4.2 At high temperature

Place the new closed lid product sample at 45± 2 ^{o}C for 2 hours. Afterwards, open container and determine seclusion of liquid and texture of the sample.