



Green Label Product Laundry Detergent Products (TGL-10-R1-10)

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Laundry Detergent Products

1. Background

Laundry detergent products mostly composed of surfactant, sequestering builders, and more than 20 other additional chemicals. Notably, these products' environmental impacts are mostly occurred during usage due to pollution caused products' leakage.

Therefore, Green Label Criteria for Laundry Detergent Products had been developed to minimize their environmental effect particularly water pollution as well as reduce resource consumption and the cost of water treatment. The criteria aim to promote products' biodegradability, reduce phosphate content, encourage packaging recycle, and raise producer and consumer awareness.

2. Scope

These criteria shall cover all laundry detergent products as follows:

1. Laundry detergent powder products
 - 1.1 for hand washing
 - 1.2 for washing machine
 - 1.3 for hand washing or washing machines
2. Liquid laundry detergent products
 - 2.1 for hand washing
 - 2.2 for washing machines

3. Definitions

- 3.1 **Laundry detergent product** refers to a product principally consisting of synthetic and/or natural surfactants, intended for application in fabric washing.
- 3.2 **Liquid laundry detergent product** refers to a laundry detergent product in liquid form primarily consisting of surfactants, intended for application in fabric washing.
- 3.3 **Surface-active agent or surfactant** refers to a chemical agent capable of reducing water surface tension when dissolving in water.
- 3.4 **Sequestering builder** refers to a chemical agent capable of reducing water hardness and improving surfactant's efficiency.
- 3.5 **Alkaline builder** refers to a chemical agent capable of maintaining alkalinity levels throughout the whole process.
- 3.6 **Optical brightening agent or optical brightener** refers to a chemical agent capable of absorbing ultraviolet radiation to brighten fabrics.
- 3.7 **Suds booster** refers to a chemical agent used in combination with surfactants to increase amount of suds.
- 3.8 **Suds depressor** refers to a chemical agent used in combination with surfactants to decrease amount of suds.

- 3.9 **Oxygen bleach** refers to a chemical agent used for bleaching by means of the nascent oxygen formation.
- 3.10 **Bleach precursor** refers to a chemical agent capable of generating bleaching substrates when dissolving in water.
- 3.11 **Stabilizer for bleach precursor** refers to a chemical agent used in combination with bleach precursors to reduce decomposition rate of such bleach precursors.
- 3.12 **Hydrotrope** refers to a chemical agent capable of enhancing water solubility of laundry detergent products.
- 3.13 **Anti-tarnishing agent** refers to a chemical agent capable of inhibiting tarnished metal components in fabric products.
- 3.14 **Anti-oxidant** refers to a chemical agent capable of reducing oxidation rate of some components in laundry detergent products.
- 3.15 **Enzyme** refers to an organic substance capable of decomposing large biopolymers proteins, starch, or lipids into small molecules. The enzyme herein includes proteolytic or amylolytic enzymes.
- 3.16 **Soil releasing agent** refers to a chemical agent capable of easily removing stains from fabric products.
- 3.17 **Anti-microbial compound** refers to a chemical agent capable of inhibiting microbial growth.
- 3.18 **Mildness additive** refers to a chemical additive capable of preventing skin damage caused by laundry detergent products.
- 3.19 **Storage stabilizer** refers to a chemical agent capable of extending the lifespan of laundry detergent products without degradation.
- 3.20 **Fabric softening agent** refers to a chemical agent capable of softening the fabric products after washing.
- 3.21 **Anti-static agent** refers to a chemical agent capable of eliminating static build up from fabric products.
- 3.22 **Anti-corrosion agent** refers to a chemical agent capable of reducing metal components' corrosion in fabric products.
- 3.23 **Anti-soil re-deposition agent** refers to a chemical agent capable of preventing dirt particles or stains' re-deposition after such particles have been removed from fabrics during washing, e.g. sodium carboxymethyl cellulose.
- 3.24 **Recycled plastics** refer to post-consumer plastics, and plastic scraps and wastes generated in the manufacturing processes.
- 3.25 **Recycled pulps** refer to pulps made from post-consumer waste papers. These pulps exclude pre-consumer waste papers including defected papers as dry broke and wet broke generated in the paper productions and processing prior to distribute to consumers. Exception is made for dry broke and wet broke made from recycled pulps of 100%.
- 3.26 **Wash** refers to a wash of fabric products with the total loading of 4.5 kg of dry weight.

4. General requirements

- 4.1 The product shall be qualified once it passed the quality requirement stated by Thai Industrial Standard for Laundry Detergent Powder, TIS 78 or Thai Industrial Standard for Liquid Laundry Detergent Product, TIS 1745 or equivalent international or national standards.

Verification Method

The applicant shall submit the certificate of relevant Thai Industrial Standard or test reports stating compliance with the product quality requirements according to relevant Thai Industrial Standard or equivalent international or national standards.

- 4.2 Manufacturing process, transportation and post-industrial waste disposal shall comply with national laws and regulations, for instance Factory Act, B.E. 2535 and Enhancement and Conservation of the National Environmental Quality Act, B.E. 2535. The factory located in industrial estate shall comply with Industrial Estate Authority of Thailand Act.

Verification Method

The applicant shall submit licenses or evidences to prove that the manufacturing process, transportation, and post-industrial waste disposal comply with national laws and regulations.

5. Environmental requirements

- 5.1 Laundry detergent powder products shall not contain total chemical substances of exceeding 100g of dry weight per a wash.

Verification Method

The manufacturer shall submit the test report for total chemical substances of not exceeding 100g of dry weight per a wash. In addition, declaration letters for components and quantities of substrates used in the products and the calculations shall be concurrently submitted to ensure compliance with Environmental criteria 5.1. The declaration letters shall be signed by authorized personnel of the manufacturer.

- 5.2 Allowed substances
- Fragrances used in the products must be allowed by International Fragrance Raw Material Association or Research Institute for Fragrance Material.

Verification Method

The manufacturer shall submit the declaration letters issued by the Green Label applicant and by fragrance manufacturers or wholesalers to ensure that the fragrances have been certified by International Fragrance Raw Material Association or Research Institute for Fragrance Material. The declaration letters shall be signed by authorized personnel of the manufacturer.

- 5.3 Surfactants used in the products shall be aerobic biodegradable and/or anaerobic biodegradable of at least 90%.

Verification Method

The manufacturer shall submit the test reports on surfactants' biodegradability by using test methods according to Thai Industrial Standard for Methods of analysis and test for laundry detergent powder, TIS 578 or equivalent international or national standards.

5.4 Prohibited substances

- 1) Substances added as product constituents or substances used for preparation of laundry detergent products as follows:
 - Alkyl phenol ethoxylates :APEOs and derivatives
 - Nitromusk and polycyclic musks, e.g. musk xylene:5-tert-butyl-2,4,4-trinitro-m-xylene, musk ambrette:4-tert-butyl-3-methoxy-2,6-dinitrotoluene, muskene: 1,1,3,3,5-pentamethyl-4,6-dinitroindan, musk tibertine: 1-tert-butyl-3,4,5-trimethyl-2,6-dinitrobenzene, musk ketone:4'-tert-butyl-2',6'-dimethyl-3',5'-dinitroacetaphenone, HHCB:1,3,4,6,7,8-hexamethylcyclopenta (g) -2-benzopyran, AHTN: 6-acetyl-1,1,2,4,4,7-hexamethyltetralin
 - EDTA (Ethylenediamine tetraacetate)
 - NTA (Nitrilotriacetate)
- 2) Non-biodegradable quaternary ammonium salts
- 3) Total amount of non-biodegradable phosphonates of exceeding 0.5g/wash
- 4) Substances classified or may be classified in the following groups:
 - R40 (Possible risk of cancer)
 - R45 (May cause cancer)
 - R46 (May cause heritable genetic damage)
 - R49 (May cause cancer by inhalation)
 - R50-53 (Very toxic to aquatic organisms, May cause long-term adverse effects in the aquatic environment)
 - R51-53 (Toxic to aquatic organisms, May cause long-term adverse effects in the aquatic environment)
 - R59 (Dangerous for the ozone layer)
 - R60 (May impair fertility)
 - R61 (May cause harm to the unborn child)
 - R62 (Possible risk of impaired fertility)
 - R63 (Possible risk of harm to the unborn child)
 - R64 (May cause harm to breastfed babies)
 - R68 (Possible risks of irreversible effects)

or any combination thereof, in accordance with Directive 67/548/EEC and its amendments, or in accordance with Directive 1999/45/EC (31 May 1999)

These include substrates or other compounds used in the product preparation of more than 0.01% of the finished products.
- 5) Substances listed in Group R43 (May cause sensitization by skin contact) in accordance with Directive 1999/45/EC (31 May 1999)
- 6) Reactive chlorine compounds, such as sodium hypochlorite and organic chlorine compounds
- 7) Halogenated hydrocarbon
- 8) Formalin

Verification method

The applicant shall submit the declaration letters to ensure the absence of prohibited substances in their products according to Environmental criteria 5.4. The declaration letters shall be signed by authorized personnel of the manufacturer.

5.5 Packaging

- 1) Inks, paints, pigments or additives used for printing on the product packaging shall not contain heavy metals including mercury, lead, cadmium and hexavalent chromium of exceeding 0.01 % (≤ 100 mg/kg) by weight (dry basis).

Verification method

The applicant shall submit at least one of the following evidences:

1. Test reports for heavy metals in inks, paints, pigments or additives by using recognized international or national standards or
2. The declaration letters issued by relevant packaging manufacturers to ensure the absence of heavy metals according to Environmental criteria 5.5 (1). The declaration letters shall be signed by authorized personnel of the packaging manufacturers.

2) Plastic packaging

Plastic packaging symbols shall be portrayed according to Thai Industrial Standard for recycled plastics, TIS 1310 or ISO 1043 or ISO 11469.

Verification method

The applicant shall submit samples of the plastic packaging to declare plastic markings according to Thai Industrial Standard for Recycling Plastics, TIS 1310 or ISO 1043 or ISO 11469.

3) Paper packaging

Paper packaging shall contain recycled pulp of at least 80% of its weight.

Verification method

The applicant shall submit the declaration letters stating that recycled pulp content in the paper packaging, together with the samples thereof. The declaration letters shall be signed by authorized personnel of the packaging manufacturers.

Notes: Testing and certification

- 1) The test shall be performed in laboratories as follows;
 - Governmental laboratories
 - Private laboratories accredited in accordance with the Thai Industrial Standard on general requirements for the competence of testing and calibration laboratories, TIS 17025 (ISO/IEC 17025)
- 2) Test reports for the Green Label application shall not exceed 1year duration following the application date.