Criteria for the award of Green Product Mark Control Board

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Contents

Foreword

The work of selecting and developing criteria for the award of Green Product Mark is carried out through Global 2PfG-E Technical Committees (PTC) convened by TÜV Rheinland. Interested parties participate in the selection and development of criteria for the award of Green Product Mark through either PTC membership or stakeholder consultation mechanism.

Criteria for the award of Green Product Mark are drafted in accordance with the rules given in following standards and guides:

- ISO/IEC Directives, Part 1 and Part 2
- ISO/IEC Guide 21, Part 1 and Part 2
- ISO Guide 64
- ISO Guide 82
- ISO 14024
- US EPA Guidelines for Environmental Performance Standards and Ecolabels for Use in Federal Procurement
- ISEAL Code of Good Practice for Setting Social and Environmental Standards

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. TÜV Rheinland shall not be held responsible for identifying any or all such patent rights.

This document was developed using a multi-stakeholder approach involving experts from multiple stakeholder groups including but not limited to consumers, government, industry, labour, non-governmental organizations (NGOs), and service, support, research, academics. Although efforts were made to ensure balanced participation of all the stakeholder groups, a full and equitable balance of stakeholders was constrained by various factors, including the availability of resources and the need for English language skills.

Introduction

Product environmental labels are claims which indicate the environmental aspects of a product and provide information about a product in terms of its overall environmental character, a specified environmental aspect, or any number of aspects. Green Product Mark is a voluntary environmental labelling scheme operating in accordance with ISO 14020 *Environmental labels and declarations – General principles* and ISO 14024 *Environmental labels and declarations – Type I environmental labelling – Principles and procedures*. Green Product Mark has been developed in accordance with ISO/IEC 17067 *Conformity assessment – Fundamentals of product certification and guidelines for product certification schemes*. Certification activities under Green Product Mark scheme shall be performed in accordance with ISO/IEC 17065 *Conformity assessment – Requirements for bodies certifying products, processes and services*.

Through the communication of verifiable and accurate information on environmental aspects of products, Green Product Mark aims to encourage the demand for and supply of those products that cause less stress on the environment, thereby stimulating the potential for market-driven continuous environmental improvement.

Green Product Mark certification scheme is owned by TÜV Rheinland, a leading international technical service provider who have been developing solutions to ensure the safety, quality and economic efficiency of the interaction between man, technology and the environment.

This document is intended to convey clear and unambiguous requirements to be fulfilled for products to get awarded with Green Product Mark.

1 Scope

This document lays out prerequisites, product environmental criteria and product function characteristics that a control board shall comply with, in order to get awarded with Green Product Mark.
Note: The control board in this document is not a final product, without enclosure, which can't operate independent and must need to work together with other devices. A typical control board is computer motherboard or computer video card.

All products which demonstrate compliance with relevant prerequisites, product environmental criteria and product function characteristics set forth in this document are entitled to be awarded Green Product Mark.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- SA 8000 Social Accountability
- ISO 14001 Environmental Management Systems-Requirements with Guidance for use
- Product Environmental Footprint (PEF) Guide
- 2001/95/EC General Product Safety Directive
- Low Voltage Directive 2014/35/EU
- EN 62368-1 Audio/video, information and communication technology equipment – Part 1: Safety requirements
- ISO 14040, Environmental management -- Life cycle assessment – Principles and framework
- ISO 14044, Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 14067, Carbon footprint of products – Requirements and guidelines for quantification and communication
- ISO 14021, Environmental labels and declarations–Self-declared environmental claims (Type II environmental labelling)
- Directive 2011/65/EC (RoHS Directive)
- Regulation (EU) No 1907/2006 (REACH Regulation)
- Regulation (EU) No 2019/1021 on persistent organic pollutants (POP Regulation)
- Battery directive (EU) 2023/1542
- Packaging and packaging waste Directive 94/62/EC
- Directive 2002/96/EC and 2012/19/EU (WEEE Directive)

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1 Green Product Mark

A voluntary environmental labelling program owned by TÜV Rheinland to indicate the overall environmental prefer ability of a product within a particular product category based on life cycle considerations and contribute to a reduction in the environmental impacts associated with products.

3.2 Control Board

A control board is a printed circuit board (PCB) that controls the functions of a device. It's essentially the "brain" of the device, interpreting signals from inputs and translating them into actions by the device's components. Control boards are found in a wide range of devices, from computers and smartphones to appliances and industrial machinery.

3.3 Pre-requisites

Preconditions that a product shall comply with to be awarded Green Product Mark, which in principle consist of two pillars: legislative/regulatory requirements that the product shall meet in order to access target market; social compliance requirements prescribed to the site where the product has been manufactured.

3.4 Product environmental criteria

Environmental requirements that the products shall meet in order to be awarded an environmental label. [SOURCE: ISO 14024: 1999, definition 3.4]

3.5 Product function characteristics

Attribute or characteristic in the performance and use of a product. In the context of environmental labelling, fitness for purpose implies that a product satisfies health, safety and consumer performance needs. [SOURCE: ISO 14024: 1999, definition 3.5]

4 Prerequisites

4.1 Social compliance

The social compliance of brand owner, manufacturer and production site shall be maintained with all statutory and regulatory requirements for the jurisdiction in which the manufacturing operations are located.

Methodology for assessing and demonstrating compliance:

The brand owner, manufacturer and the factory/third-party producer must submit audit reports and CAPs.

Independent audits must be conducted by organizations accredited to ISO 17021 and carried out by SA8000, RBA or BSCI certified lead auditors.
Types of accepted audits are:
a. SA8000,
b. RBA VAP ,
c. amfori BSCI,
d. SMETA, or
e. Report developed according to the GRI Sustainability Reporting Guidelines or GRI Sustainability Reporting Standards.

The documented proof/report shall be maximum of 12 months old at the time of application for Green Product Mark certification.

4.2 Environmental compliance

All production facilities must assure compliance with the applicable national and local legal environmental law and regulations applicable to their processing/manufacturing stage.

Methodology for assessing and demonstrating compliance:

The manufacturer and factory shall fulfil the environmental requirements by providing a valid ISO 14001 or EU EMAS Certificate(s).

5 Product environmental criteria

5.1 Restriction of hazardous substances

Requirement	Regulation	Limit
Odour	In house-method,concerning SNV 195651 Rating scale 1~5 (TÜV Rheinland expertise)	Grade 2 (in operation)
RoHS	Directive 2011/65/EU and amendments	The product shall meet the substance restriction requirements of the European RoHS Directive, using the version which is in force at the time the product is declared to conform to this standard. All exemptions to the substances restrictions as defined by the Directive are applicable. Also, a RoHS Declaration of Conformity to Directive 2011/65/EC shall be provided by the applicant.
Substances of Very High Concern (REACH SVHC)	Regulation (EU) No 1907/2006	The product needs to comply requirements of REACH SVHCs, also it is necessary to establish an information database of substances of concern in items or complex objects (products) established by the Waste Framework Directive (WFD) -SCIP database; Plastics used in housings and housing parts shall not contain SVHC as constituent components.
Phthalates: DEHP, DBP, BBP, DINP, DIDP, DNOP + SVHC Phthalates	With reference to Regulation (EC) No 1907/2006 Annex XIV, Annex XVII and Directive 2011/65/EU	Refers to 0.1% of each finished material of the article Plastics used in housings and housing parts shall not contain SVHC as constituent components.
Perfluorooctane sulfonic acid and its derivatives (PFOS)	Regulation (EU) No 2019/1021 on persistent organic pollutants (POP) Annex I	1. The concentration in the substance or mixture is less than 10mg/kg; 2. The mass percentage concentration in semi-finished products, article or article components is equal to or less than 0.1%; 3. Textiles or other coating materials with a content equal to or less than 1 μg/m2

Requirement	Regulation	Limit
Perfluorooctanoic acid and Its salts & related substances(PFOA)	Regulation (EU) No 2019/1021 on persistent organic pollutants (POP) Annex I	1. The concentration of PFOA in substances,mixture or article is less than or equal to 0.025 mg/kg; 2. The sum of PFOA related compounds or PFOA related compounds in substances, ,mixture or article is equal to or less than 1 mg/kg
Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds PFHxS	Regulation (EC) No 519/2012 (POPs)	PFHxS or any of its salts equal to or below 0.025 mg/kg, the sum of concentrations of all PFHxS-related compounds equal to or below 1 mg/kg (for main components materials)
Perfluorinated carboxylic acids (C9-C14 PFCAs) and related substances	Requirements according to Annex XVII of Regulation (EC) No 1907/2006 entry 68 (REACH) for perfluorinated carboxylic acids (C9-C14-PFCA) their salts and C9-C14-PFCA related substances amended by Regulation (EU) 2021/1297.	The concentration in the substance, the mixture, or the article is below 25 ppb for the sum of C9-C14 PFCAs and their salts or 260 ppb for the sum of C9-C14 PFCA-related substances. (For main components materials)
Organotin Compounds	With reference to Regulation (EU) No 1907/2006	0.1% : MBT, DBT, DOT;TBT for skin contact materials
Flame retardants (PBBs, PBDEs, TRIS, TEPA, Arsenic trioxide)	With reference to Regulation (EU) No 1907/2006	TRIS / TEPA: Not detected (only for main components materials) OctaBDE : 1000mg/kg Conduct all materials except metals, glass, ceramic and wood.
Cadmium	Regulation (EU) No 1907/2006	100 mg/kg (accessible materials)
Lead	Regulation (EU) No 1907/2006	90 mg/kg (accessible coating materials)
PAH (Polycyclic Aromatic Hydrocarbons)	15 PAH according to AfPS GS 2019:01 PAK	Requirements set by AfPS

Requirement	Regulation	Limit
Halogen	IEC 61249-2-21 and IPC-4101B	Cl, Br: 1000 mg/kg (in each material) All Printed circuit board (PCB) and substrate laminates shall meet Br and Cl requirements for low halogen as defined in IEC 61249-2-21 and IPC-4101B per 1a (refer to IEC and IPC standards for actual requirements). The maximum total halogens contained in the plastic parts exceeding 25 g, resin plus reinforcement matrix should be less than 1500 ppm with maximum chlorine of 900 ppm and maximum bromine being 900 ppm. For plastic parts exceeding 25 g manufacturer shall provide a declaration which declares the materials used in the production meet the above seen requirement
Packaging testing	Directive 94/62/EC and amendments	Limit: Pb+ Hg+ Cd+ Cr(VI) < 100 mg/kg
Beryllium	DIN EN ISO 11885	Refers to 0.1% in each finished part of the article (all sub-products which can be separated without tools) and each packaging separately.
Antimony	DIN EN ISO 11885	Refers to 0.1% in each finished part of the article (all sub-products which can be separated without tools) and each packaging separately.
Short chain Chlorinated Paraffins C10- C13 (SCCP)	Regulation (EU) No 2019/1021 on persistent organic pollutants (POP) Annex I	Refers to 0.1% of each finished material of the article and each packaging (made of PVC, soft plastic and leather material)
Hexabromocycl ododecane (HBCDD)	Regulation (EC) No 2019/1021 on persistent organic pollutants (POP) Annex I	Refers to 0.01% of each finished material of the article and each packaging (made of EPS and PS foams)
Battery directive	(EU) 2023/1542	Limit: Hg 0.005% Cd 0.002% and Pb 0.004%(before 2024.08.18), Pb 0.001% (after 2024.08.18)

For restricted substances, where a substitution at the time being due to missing alternatives is not possible, or the technology cannot be achieved at this stage, an exemption maybe granted. To support this exemption the supplier has to provide technical assessment and relevant documents.
The applicant provides a certificate(s) or accredited test report, which shows compliance with the legal requirement of each respective substance. TÜV Rheinland reviews that limits are kept. Alternatively, TÜV Rheinland evaluates the values by the provided product data from the manufacturer.
TÜV Rheinland reserves the right to accept existing reports issued by accredited laboratories.

5.2 Product climate resilience

The producer shall quantify/assess the life cycle carbon emissions of products using life cycle assessment techniques, i.e. by describing the inputs and their associated emissions attributed to the delivery of a specified amount of the product functional unit.
The applicant shall provide a report of Product Carbon Footprint (PCF) based on ISO 14067 or LCA based on ISO 14040& ISO 14044. The report shall be issued by TÜV Rheinland.

5.3 Product recycled material content

5.3.1 WEEE

The final product shall compliance with following requirements:

- 75 % shall be recovered, and
- 55 % shall be prepared for re-use and recycled.

Methodology for assessing and demonstrating compliance:
The applicant shall provide an evaluation report and TÜV Rheinland carries out a verification of the reports according to WEEE Directive 2012/19/EU and amendments.

5.3.2 Recycled material content of Packaging

The recycled part content need to be more than 80%, and needs to be made from post-consumer recycled materials.
The applicant shall provide a certificate(s) or accredited test report per ISO 14021 or equuivalent standard from accredited third party laboratories to TÜV Rheinland for reviewing. The certificate or test report shall not be older than 1 year.
TÜV Rheinland reserves the right to accept existing reports issued by accredited laboratories.

5.4 Product Safety

Compliance shall be maintained with safety requirements set forth in statutory regulations for the jurisdiction in which Green Product Mark certified products will be sold.

Requirement	Standard
Safety	IEC 62368-1 Audio/video, information and communication technology equipment – Part 1: Safety requirements

Methodology for assessing and demonstrating compliance:

The applicant shall provide the certificate of national safety approval relevant to the jurisdiction in which Green Product Mark certified products will be sold. The certificate shall not be older than 1 year.

6 Take Back

The applicant undertakes to take back eco-labelled and own-manufactured products after use in order to channel them with preference to reuse or to material recycling.
Non-recyclable device parts shall be disposed of in an environmentally sound manner.
The devices shall be taken back free of charge - either personally or by shipment - at applicant's facility or at a return facility named by the applicant.
The product documentation of the device shall provide detailed information on the return options.

7 Product function characteristics

7.1 Warranty

The applicant undertakes to offer a 3 years warranty on product, where a minimum of 1 year must be included free of charge.

7.2 Repair and Spare Parts Availability

The applicant undertakes to perform repairs or provide infrastructures for repair services for at least four years from the time that production ceases and to make sure that the availability of spare parts for device repair is guaranteed for at least four years from the time that production ceases. Spare parts shall be offered at reasonable prices by the manufacturer itself or by a third party. Spare parts are those parts which, typically, may fail or break down within the scope of the ordinary use of a product, as for example USB module, Video/audio output module/Port(if any).
The product documents shall provide information on the assembly of components, spare parts supply and repair services.

7.3 User instructions

The applicant shall provide the operating instructions and short guide demonstrating that the information listed above are available.

7.4 Information for User

information that the product has been awarded the Green Product Mark, including a summary of the major features for award of the Green Product Mark on a separate page and a link to:
www.tuv.com/world/en/green-product-mark.html

7.5 Product characteristics

Product functions, dimensions and weight to be recorded.