

Hong Kong Green Label Scheme
Product Environmental Criteria for
Personal Computers (Excluding Monitor) (GL-006-001)



BACKGROUND

The Hong Kong Green Label Scheme (HKGLS) is an independent and voluntary scheme, which aims to identify products that are, based on life cycle analysis consideration, more environmentally preferable than other similar products with the same function. The Scheme is organized by the Green Council (GC) with contributions from the HKGLS Advisory Committee and a number of supporting organizations.

The prime objectives of HKGLS are:

- For Consumers: assist in making purchases of products that are less harmful to the environment;
- For Industry: stimulate development and production of environmentally preferable alternatives.

This specification sets out the requirements that personal computers will be required to meet in order to be licensed to use the HKGLS label. The requirements include environmental criteria and product characteristics. The specification also defines the testing and other means to be used to verify conformance with the criteria and product characteristics.

POTENTIAL ENVIRONMENTAL IMPACTS

Personal computers impact the environment throughout the entire product life cycle stages, including the consumption of natural resources, the production of raw materials, the production of electronic and other components, the assembly into a finished product, the use of products, the transport and maintenance services, and finally the waste disposal. The packaging of the computer products also contributes to solid waste generation.

LABEL OBJECTIVE

The aim of the environmental criteria developed for personal computers is to:

- Reduce the material types and the use of the environmentally harmful substances;
- Reduce energy consumption and promote energy-saving computers;
- Promote improved durability and recyclability of computers; and
- Minimize waste production by reducing the amount of primary packaging and promotion its reusability and/or recyclability.

PRODUCT DEFINITION

This document and all product environmental criteria therein apply to the main system units of both stationary and portable personal computers. Separate system components such as monitor, mouse, modem, memories and other accessories located outside the system units are not included in this product category.

The product criteria do not apply to printers, for which there are separate criteria (GL-006-003).

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PRODUCT ENVIRONMENTAL CRITERIA

The table below sets out the product environmental criteria for personal computers (GL-006-001) under the HKGLS.

Product Environmental Criteria	Verification Method(s)*
<p>1. The product shall meet the following power consumption in the sleep mode and off mode:</p> <ul style="list-style-type: none"> • Desktop & Integrated Desktop: Sleep Mode $\leq 3W$; Off Mode ≤ 1 • Notebook: Sleep Mode $\leq 4W$; Off Mode ≤ 2 <p><i>**For product meet the requirement of Energy Star, it can be regarded as equivalent to the above standard.</i></p>	<p>✓ Review of laboratory test report(s).¹</p>
<p>2. The default activation period (DEP)² shall not exceed 20min.</p>	<p>✓ Review of laboratory test report(s).¹</p>
<p>3. The control unit shall have a modular design allowing components to be easily accessible without any special tools. Documented user instructions on such modular design features shall be included.</p>	<p>✓ Inspection of product samples; AND ✓ Review of supporting information;</p>
<p>4. The upgradeability of the personal computer shall be ensured for at least the processor, the graphics card, the random access memory, the hard disk and if available, the CD-ROM drive. The personal computer shall provide for at least one empty slot. Documented user instructions on such upgradeability features shall be included.</p>	<p>✓ Inspection of product samples; AND ✓ Review of supporting information;</p>
<p>5. The following design-for recycling features shall be incorporated into the casing and chassis of personal computer:</p> <ul style="list-style-type: none"> • Plastic parts weighing over 25g and with an even surface of over 200mm, excluding extruded plastic materials, shall be marked for identification. • Plastic parts and metal parts shall be separable; • Plastic parts made of recyclable and non-recyclable materials shall be separable; and • Labels/markings/stickers must be made of the same material as the parts to which they are affixed or meet VDI 2243 Part I⁴ requirement if they are difficult to separate 	<p>✓ Inspection of product samples; AND ✓ Review of supporting information;</p>

Hong Kong Green Label Scheme
Product Environmental Criteria for
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Product Environmental Criteria	Verification Method(s)*
6. Plastic parts shall have no lead or cadmium added by the manufacturer and plastic parts weighing over 25g shall not contain flame retardants containing polybrominated biphenyls (PBBs), polybrominated diphenylethers (PBDEs) and chloroparaffins with 10-13 carbon atoms per molecule and chlorine content of greater than 50% by weight.	✓ Review of laboratory test report(s). ³
7. For product equipped with a battery, the content of lead shall not exceed 100mg/kg, cadmium shall not exceed 10mg/kg and mercury shall not exceed 1mg/kg	✓ Review of laboratory test report(s). ⁴
8. Packaging requirements: <ul style="list-style-type: none"> • Packaging materials shall not contain chlorine-based plastics; • General packaging requirements (refer to criteria for packaging materials: GL-Packaging). 	✓ Inspection of product samples; AND ✓ Review of supporting information; AND ✓ Interview with relevant personnel.

*Analytical testing should be accredited and performed by laboratories that meet the requirement laid out in the IEC/ISO 17025 or EN45001 standards or any equivalent systems e.g. HOKLAS, CNAS. Under special situation and with the approval from GC, test can be performed by in-house method by the accredited laboratory or manufacturer.

Note:

1. **Test Method:** ENERGY STAR Computer Test Method (Version 5.0) or International Energy Star Program or certificate of equivalent
2. **Default Activation Period (DEP):** refers to the time period needed to enter the sleep mode from the time the last user input was made.
3. **Test Method for cadmium, lead, hexavalent chromium and mercury:** US EPA 3050B/3051A/3052/3060A or equivalent with detection limits shall be no greater than 2 ppm.
Test Method for PBBs and PBDEs: US EPA 3540C/8081A/8082A/8270D or equivalent with detection limits shall be no greater than 5 ppm.
Test Method for chloroparaffins: US EPA 8270D/3540C/GC-MSD or equivalent with detection limits shall be no greater than 5 ppm.

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4. **Test Method for Lead and Cadmium:** Atomic Adsorption Spectrochemical Analysis, ICP Emission Spectrochemical Analysis, ICP-MS or equivalent.

Test Method for Mercury: Atomic adsorption spectrochemical analysis by using gold amalgamation method or equivalent.

5. In case synthetic resin is mixed, 'compatibility of thermoplastic resin' for evaluating the recyclability of mixed synthetic resin is as follows. Here, the level which does not cause inconvenience in recycling is set less than '3'.

Plastic Matrix		Additive of Plastic											
		PE	PVC	PS	PC	PP	PA	POM	SAN	ABS	PBTP	PETP	PMMA
Plastic Matrix	PE	1	4	4	4	1	4	4	4	4	4	4	4
	PVC	4	1	4	4	4	4	4	1	2	4	4	1
	PS	4	4	1	4	4	4	4	4	4	4	4	4
	PC	4	3	4	1	4	4	4	1	1	1	1	1
	PP	3	4	4	4	1	4	4	4	4	4	4	4
	PA	4	4	3	4	4	1	4	4	4	3	3	4
	POM	4	4	4	4	4	4	1	4	4	3	4	4
	SAN	4	1	4	1	4	4	4	1	1	4	4	1
	ABS	4	2	4	1	4	4	3	4	1	3	3	1
	PBTP	4	4	4	1	4	3	4	4	3	1	4	4
	PETP	4	4	3	1	4	3	4	4	3	4	1	4
PMMA	4	1	3	1	4	4	3	1	1	4	4	1	

Remarks

1 : suitable 2 : limitedly suitable 3 : suitable in small amounts 4 : unsuitable

Data: The Association of German Engineers(VDI: Verein Deutscher Ingenieure) VDI 2243 Part 1