

The Australian Ecolabel Program **Good Environmental Choice Australia Standard**

Printers and Imaging Equipment



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Use of This Standard

This voluntary environmental labelling standard may be used by competent environmental assessors to establish product compliance to the Australian Ecolabel Program. Products that are certified with the mark of conformity, the “Good Environmental Choice Label” have been independently tested and demonstrate compliance to the environmental and social performance criteria detailed in this standard. The overall goal of environmental labels and declarations is the communication of verifiable and accurate information, which is not misleading, on environmental aspects of products and services. This encourages the demand for, and supply of, those products and services that cause less stress on the environment, thereby stimulating the potential for market-driven continuous environmental improvement.

This standard identifies environmental, quality, regulatory and social performance criteria that products sold on the Australian market can meet in order to be considered as good “environment practice”. Products that have been certified as complying to this standard may gain greater market recognition and a marketing advantage in government and business procurement programs, as well as broad consumer preference.

This standard can be used by Australian producers to guide their designs for environment programs by using the environmental criteria as key performance benchmarks to reduce the environmental loads of their product. The standard is necessarily restricted in its identification of environmental loads from the product life-cycle. Producers should consider other environmental measures along the product cycle, which are not included in this standard, in their environment program designs for and aim for even higher levels of environmental performance where technically possible.

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GOOD ENVIRONMENTAL CHOICE AUSTRALIA STANDARD

Printers and Imaging Equipment

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Abstract

This Standard specifies environmental performance requirements of photocopiers, printers, faxes, scanners, multifunction devices and associated parts for the Australian Ecolabel Program. The Australian Ecolabel Program complies with ISO 14024: "Environmental labels and declarations - Guiding principles" which requires environmental labelling specifications to include criteria that are objective, reasonable and verifiable.

Definitions

Common Parts means standardised parts that may be used in other similar devices of the same brand. If a part is used as a general common part in the whole industry, it is not included in this classification.

CPM is an acronym for Copies per Minute, the primary speed output measurement for printers and photocopiers.

HCFC means hydrochlorofluorocarbons.

IEEE is the acronym for the Institute of Electrical and Electronic Engineers.

ISO means the International Organisation for Standardisation.

Label means the Good Environmental Choice Australian Label.

Low Power Mode means a low power consuming condition which is activated automatically after some defined period of inactivity.

MFD is an acronym for a Multi-function Device

OECD means Organisation for Economic Co-operation and Development.

Off Mode means the condition in which a power supply is cut, either by the user or automatically after some defined period of inactivity.

Recycled includes:

Post-Consumer: Material generated by households, or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Pre-Consumer: Material diverted from the waste stream during a manufacturing process. Excluded is re-utilisation of materials such as rework, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

Reused Part means a part reused in a product, which was previously used in another product.

Safety Data Sheet means a document that describes the properties and uses of a substance, that is, identity, chemical and physical properties, health hazard information, precautions for use and safe handling information in accordance with the Plastics and Chemical Industry Association of Australia – Preparation of Safety Data Sheets Code of Practice.

Sleep Mode means a state in which power consumption is reduced below that of the low power mode, without switching off the power supply.

VOC (Volatile Organic Compound) means any organic compound having a vapour pressure of 0.01 kPa or more, at 20 °C, or having a corresponding volatility under the particular conditions of use.

1 INTRODUCTION

1.1 Purpose

This Standard seeks to define good environmental performance benchmarks for imaging and printing equipment. The voluntary environmental labelling standard implemented by Good Environmental Choice Australia (GECA) as part of the Australian ecolabel program specifies environmental performance criteria for photocopiers, printers, scanners, faxes and multifunction devices and stipulates the environmental load of such products throughout the major aspects of their life cycle.

1.2 Background

This Standard is a voluntary environmental labelling standard which specifies requirements for printers and imaging equipment. The environmental loads from the production, service and use of such equipment are widespread and numerous. Therefore it is important to develop low energy equipment containing re-usable and or recyclable components in order to reduce the amount pollutants going into the environment and reducing the amount of energy used. The primary purpose of this standard is to define environmental performance criteria for the most harmful environmental and human hazards of imaging equipment and to use these criteria as indicators of general environmental performance of this product group.

The standard aims in particular at promoting:

- The minimisation of material types and amount used
- The minimisation of environmentally hazardous substances during manufacturing/use
- The reduction of energy consumption and noise during use
- The environmental issues of disposal and recycling at the end of the consumption life

2 STANDARD CATEGORY SCOPE

This standard is applicable to the following categories of printers and imaging equipment for both home and office:

2.1 Photocopiers

This category includes stand-alone photocopiers, namely commercially available electrostatic image reproducing units. The copier must, as a minimum, contain a system for inking paper, an image projecting system and a paper-handling unit.

2.2 Printers

This category includes any image output device capable of creating a hard copy from data provided by a stand alone computer, over a network, USB drive, digital camera or other electronic device.

2.3 Scanners

This category includes any product capable of converting a hard copy into electronic format.

2.4 Fax machines

This category applies to any product capable of providing electronic transmission from a hard copy, either over a telephone line or via a network.

2.5 Multifunction Devices

This category applies to products that perform two or more of the above functions.

2.6 Componentry and Parts

This category includes add-ons such as extra paper handling units and consumables such as toner powder and cartridges, drums and optical photosensitive kits. This category expressly excludes paper-based consumables, which are covered under other GECA Standards.

Individual components certified under this category will not be assessed against energy use criteria, but are required to comply with relevant materials requirements (Section 3.3), hazardous materials (Section 3.4), emissions during use when installed in a certified device (Section 3.5.1), post-consumption recycling (Section 3.6.1 (where applicable)) and packaging (Section 3.6.4).

This standard does not apply to any product that is solely powered by batteries.

3 ENVIRONMENTAL PERFORMANCE CRITERIA

3.1 Fitness for Purpose

Certified products should be good performers in their intended application. Certain standards of quality and durability are implicit in the Label. The manufacturer must ensure that the product is fit for its intended purpose and:

3.1.1 Applicable Standards

The product meets or exceeds the requirements of the relevant Australian Standard, or the product meets the applicable and accepted standard (e.g., the relevant IEEE Standard) in its target market if it is to be exported, or

3.1.2 Demonstrated Performance

If there is no relevant Australian or International Standard, the product can demonstrate sufficient quality by providing testing reports from an independent organisation or case studies from installations demonstrating market suitability and quality.

3.2 Energy Use

The energy performance of certified devices shall meet or exceed the performance characteristics of the current Energy Star criteria. See:

http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductCategory&pcw_code=OEF

Power consumption test measurements shall be made in accordance with current Energy Star procedures for the product type.

If the product is certified as a multifunction device and consists of a number of integrated (but removable) components, the manufacturer must certify that the total energy use from a fully installed product will still qualify as an Energy Star MFD.

3.3 Material Requirements

3.3.1 Plastics

3.3.1.1 Resin Identification Codes

Certified products must mark each individual plastic product or component weighing greater than 25g with an appropriate resin identification code promulgated by the Plastics and Chemical Industry Association (see <http://www.pacia.org.au>) or in accordance with ISO 11469.

Exemptions may be made for products where the nature of the manufacturing process or the size and shape of the product restrict the application of the plastics resin identification code on the product. Exempt products will ensure that appropriate information describing disposal methods for the product, including the relevant resin identification code, are provided at the time of sale of the product to encourage further recycling.

3.3.1.2 Design and Recyclability of Plastic Parts

Primary plastics and recycled plastics (excluding re-used parts), with a weight in excess of 25 grams or a flat surface in excess of 200 mm² must comply with the following:

- a. At least 90% by weight of plastics in the housing and chassis must be recyclable.

- b. Must be possible to dismantle without special tools.
- c. Must not be painted or varnished in a way that reduces the recyclability of the material.
- d. Must be visibly labelled after the machine has been disassembled.
- e. Must not consist of halogenated polymers (e.g., chlorinated polymers, PTFE, etc).

3.3.1.3 Additives

Primary plastics (excluding re-used parts) and recycled plastics must comply with the following:

- a. The following halogenated flame-retardants, shall not be added to any plastic parts:
 - Polybrominated biphenyl (PBB)
 - Polybrominated biphenyl ethers (PBDE). This includes decaBDE.
 - Chlorinated paraffins
- b. Cadmium, lead or mercury compounds shall not be added except where no alternatives are available for electrical and electronic components and circuit boards.

3.3.2 Metals

A total of at least 90% by weight of metals with a weight in excess of 25 grams or a flat surface in excess of 200 mm² in the housing and chassis must be recyclable.

3.3.3 Photosensitive Layers

Photo semiconductors must not contain added cadmium, lead, mercury or selenium.

3.3.4 Batteries

The content of heavy metals in batteries must not exceed the following limits.

Mercury	5 ppm
Cadmium	5 ppm
Lead	15 ppm

3.3.5 Printing paper

The device shall be capable of using recycled paper without voiding the manufacturer's warranty.

If the device provides output to paper, it shall be capable of duplexing (double sided printing). If the copy rate of the device is greater than or equal to 45 CPM, the device must be capable of duplexing as an automatic setting.

3.3.6 Toners and Cartridges

Toner cartridges must be sealed so as to stop toner dust from escaping during storage and handling.

Ink jet and toner plastic containers (> 25g) must be identified with the appropriate resin identification code promulgated by the Plastics and Chemical Industry Association or in accordance with ISO 11469, by means of visible labelling.

The product shall not be designed to prohibit the use of 3rd party remanufactured cartridges, or the reuse of original cartridges.

3.4 Environmentally Hazardous Materials

3.4.1 Prohibited Substances

Preparations containing the following substances regulated in the Montreal Protocol shall not be used in the end production of certified devices or components, including in the production of circuit boards:

- CFCs
- HCFCs
- HFCs
- 1,1,1-trichloroethane
- Carbon tetrachloride

3.5 Emissions and Noise

3.5.1 Emissions

The indoor air emissions resulting from imaging equipment shall not exceed the following levels, measured according to ECMA 328 or equivalent:

Table 1: Emissions limits for imaging equipment.

Emission type	Limit (mg / h)
Dust	4.0
Ozone	2.0
Styrene	1.0
Benzene	0.1
TVOC Printing Emission Rate	10
TVOC Ready Mode Rate	1
TVOC Floor Mount Rate	3

Fulfilment of the emissions requirements of the equivalent Nordic Swan ecolabel, the EcoMark or the Blue Angel ecolabel may also be used as evidence of fulfilment of this criterion.

3.5.2 Noise

Imaging equipment shall have its sound power level measured in accordance with ISO 7779 and declared according to ISO 9296. The A-weighted sound level shall be less than:

$$L_{WA,d} \leq 0.35 \times CPM + 59 \text{ (dB)}.$$

If the copy rate is such that $CPM > 71$, the above limit does not apply.

This limit only applies to A4 size paper or smaller. For larger sheet sizes, the equivalent copy rate is based on paper area relative to A4 (e.g., A3 = 2 x A4).

3.6 Post Consumption Recycling and Labelling

3.6.1 Separability

Criteria for printers and imaging devices are related to modular units. A module is a part that can be separated from the product and treated as a complete entity for the purpose of recycling. A modular structure facilitates disassembly as well as making repairs simpler and easier.

The following requirements shall be fulfilled:

- a. Modules must be easily removable.
- b. Qualified personnel must be able to dismantle the machine completely into recyclable parts.
- c. Attachment points/disassembly points must be easily accessible without highly specialised tools.
- d. Connections between different materials must be easy to locate, for example by means of visible labels on the products or information on dismantling provided in data sheets.
- e. There must be no non-separable joints, such as glued or welded joints between different materials.
- f. Plastic case parts must be consist of a single homo-/copolymer or polymer blend (polymer alloys). However, this need not apply to parts weighing less than 25g or reused plastic parts.
- g. A maximum of four different types of plastics (or plastic alloys) may be present in the housing and these must be separable from one another. Components used for similar functions must be made of the same plastic type.
- h. Labels/stickers must be made of the same material as the part to which they are attached and/or must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling.
- i. The product shall use at least 50 % by weight of common parts, as defined in the definitions section.

3.6.2 Replacement Parts

For those parts of a product which are subject to wear, functionally compatible replacements shall be guaranteed for a period of at least five years. The manufacturer must make individual replacement parts available to customers.

3.6.3 Recycled Content Requirements

3.6.3.1 Plastics

The product shall use recycled plastic parts or reused plastic parts. At least one part >25 gram shall be made of reused or recycled plastic.

3.6.4 Packaging Requirements

Chlorinated or halogenated plastics must not be used in product packaging. Plastic packaging must be marked with a resin code as specified in Section 3.3.1.1.

Used packaging shall be able to be recycled by local recycling systems.

3.6.5 Product Information

The following technical information must be specified in the user's manual:

- Instructions on the positioning of the machine.
- Information about where used product can be recycled.
- Information concerning recycling of used OPC kit/photosensitive drums, toner containers and containers for used toner.
- Information about battery care, recycling and replacement.
- Information that used batteries should be disposed of in accordance with local legislation.
- Print capacity (copies per minute and copying volume per year or month).
- Information on the functioning of the energy management system.
- Information on the use of double-sided copying.
- Recommendation that environmentally friendly paper is used.
- Recommendation that the machine be turned off when not in use.

In the case of machines with a sound power level of more than 63 dB Lwa during operation and 40 dB Lwa in stand-by, the manufacturer should recommend that the machine to be located in a room in which no employee has his/her regular work station.

The following technical information must also be specified in the service manual:

- A specification of how frequently ozone filters, drums and heat rollers, etc require replacement.

The following technical information must be specified in the user's manual or be made available to the customer (e.g., manufacturers website):

- Maximum value of emissions including concentrations of ozone, dust and styrene.
- Maximum power consumption during operation, stand by, low energy and off mode.
- Maximum sound power during operation, stand by, low power and off mode.

The user's manual and product information must be written in one of the official written languages of the country in which the product is on sale.

4 COMPLIANCE TO ENVIRONMENTAL REGULATIONS

The applicant is required to comply with relevant environmental legislation and government orders at the Local, State, and Commonwealth levels, if these have been issued. An applicant's compliance with these criteria may be established by undertaking a series of random checks; and/or by gathering samples of applicant operational procedures and documents from approved assessors as evidence to support compliance during the verification. Where an applicant is from an overseas jurisdiction, that jurisdiction's environmental regulations apply. Where the applicant is subject to a guilty verdict by a legally constituted court in the last 24 months on the basis of a breach of any environmental legislation or permits, there must be evidence of corrective action.

5 COMPLIANCE TO LABOUR, ANTI-DISCRIMINATION AND SAFETY REGULATIONS

An applicant shall demonstrate that all employees are covered by a Federal or State award or a certified industrial agreement or a registered workplace agreement as determined by the Industrial Relations Commission, the Employment Advocate or a State or Territory Workplace Relations Agency or a workplace agreement in compliance with Workplace Relations Act 1996 Part 7 – The Australian Fair Pay and Conditions Standard.

An applicant shall demonstrate general compliance to the terms of State or Territory Legislation concerning Occupational, Health and Safety and/or the *Commonwealth Safety, Rehabilitation and Compensation Act 1988*, where applicable. Where the applicant is subject to a breach order by a government agency, or a guilty verdict by an Australian Court within the last 24 months, on the basis of a breach of State, Territory or Commonwealth Occupational, Health and Safety Legislation, there must be evidence of corrective action.

The applicant shall demonstrate general compliance to the requirements of the Racial Discrimination Act 1975, Sex Discrimination Act 1984, Disability Discrimination Act 1992, Equal Opportunity for Women in the Workplace Act 1999, and complementary State Legislation. Applicants cannot be in the list of 'named' or non-compliant employers under the Equal Opportunity for Women in the Workplace Act 1999. Where the applicant is subject to a breach order by a government agency, or a guilty verdict by an Australian Court in the last 24 months on the basis of a breach of these Acts, there must be evidence of corrective action.

Where an applicant is from an overseas jurisdiction, the applicant shall demonstrate general compliance to that jurisdiction's anti-discrimination, occupational health and safety, and workers' compensations regulations. Where the applicant is subject to a breach order by a government agency, or a guilty verdict by a legal court in their respective country within the last 24 months on the basis of a the breach of anti-discrimination, occupational health and safety, and workers' compensation regulations, there must be evidence of corrective action.

An applicant's compliance with these criteria may be established by undertaking a series of random checks; gathering samples of applicant operational procedures and documents from approved assessors; and/or by providing a self-declaration document signed by an executive officer of the applicant organisation as evidence to support compliance during verification.

6 EVIDENCE OF CONFORMANCE

6.1 Audit Methodology

Conformance with this standard shall be demonstrated by undertaking an assessment under the above criteria by an approved assessor, following the certification and verification procedures detailed in the Good Environmental Choice Australia Ltd Documented Quality Management System, which generally follows the environmental auditing requirements of ISO 19 011.

6.2 Assessor Competency

The Australian Ecolabel Program classifies approved assessors as:

- a. Assessors registered by Good Environmental Choice Australia Ltd as environmental professionals that hold expertise relevant for an assessment, and who have undertaken training in the procedures of the Australian Ecolabel Program; or
- b. Environmental auditors accredited with the RABQSA.

6.3 Suitable Sources

Audit evidence should be of such a quality and quantity that competent environmental auditors, working independently of each other, will reach similar audit findings from evaluation of the same audit evidence against the same audit criteria.

Suitable sources of information to establish compliance may be, but are not limited to:

- a. Technical specification of the product.
- b. Obvious characteristics of the product under examination.
- c. Scientific test results and reports.
- d. Environmental management system and audit reports and results.
- e. Life-cycle assessment of each stage of the product life-cycle via a physical audit and examination.
- f. Life-cycle assessment via scientific testing.
- g. A statement of confirmation by an executive officer.
- h. An assessment of company or government records.
- i. Other material that can be considered objective evidence.

6.4 Laboratory Testing

New testing shall be undertaken by a laboratory accredited by the National Association of Testing Authorities (NATA), or similar overseas accreditation agents who can conduct the relevant tests and/or provide documentation detailing environmental performance against the criteria of this standard. The test results should be presented on NATA-endorsed reports or from a laboratory acceptable to Good Environmental Choice Australia Ltd.

If test results or environmental auditing results are not available, and/or there is insufficient data to establish full compliance with the criteria required by this standard, then certification cannot be awarded.