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## **The Australian Ecolabel Program**

### **Australian Voluntary Environmental Labelling Standard**

# **Printers and Printed Matter Standard**



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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 “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, through communication of verifiable and accurate information that is not misleading, on environmental aspects of products and services, to encourage 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 best “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 and broad consumer environmental preference.

This standard can be used by Australian producers to guide their design for environment programs by using the environmental criteria as key performance benchmarks that 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 improvement along the product cycle not included in this standard for their design for environment programs and aim for even higher levels of environmental performance where technically possible.

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# Voluntary Environmental Labelling Standard

## Printers and Printed Matter

### Abstract

This Standard specifies environmental performance requirements of a broad range of printed matter for the Australian Ecolabel Program. The program generally complies with ISO 14024: "Environmental labels and declarations - Guiding principles" which requires environmental labelling specifications to include criteria that are objective, reasonable and verifiable.

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### Definitions:

**"Alkylphenol ethoxylates"** (APEOs) are defined as substances that upon degradation produce alkyl phenols.

**"Chemical Oxygen Demand"** (COD) means the mass concentration of oxygen equivalent to the amount of dichromate consumed by dissolved and suspended matter when a water sample is treated with that oxidant under defined conditions.

**"EDTA/DTPA"** complexing agents used to bind metals found in raw materials and in process water.

**"Label"** means the Environmental Choice Australia Label.

**"Readily biodegradable"** surfactants are those where the average level of biodegradation observed in an aerobic sewage treatment plant is at least 90% during a residence time of not more than 3 hours. In order to meet this requirement the surfactant must either meet the requirement for "ready biodegradability" when determined using any one of the five test methods described in the OECD Guidelines for Testing of Chemicals, Test Guidelines 301A-301E **OR** achieve a biodegradability of at least 80% when tested by the OECD method, published in the OECD technical report of 11 June 1976 on the "Proposed Method for the Determination of the Biodegradability of Surfactants used in Synthetic Detergents". The pass level of 80% recognises the inherent experimental variability of the OECD test.

**"Recycled Content"** 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, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

“**Return fibre**” fibre collected from the conversion and/or consumer stages capable of being reclaimed within the same process that generated it.

### **1.0 Introduction to the Environmental Benefits of Eco-labelled Printed Matter from Environmentally Responsible Printers.**

This Standard is a voluntary environmental labelling standard which specifies requirements for printed matter in a range of product sectors. The environmental impact of the product during its life cycle has been assessed and the main elements taken into account. The criteria therefore include requirements relating to raw materials of paper and the following stages in the process of production such as page and printing form production, printing and finishing, including criteria describing requirements for chemicals, air and water emissions and waste treatment. The standard stipulates in addition the use of raw material specification for printers and the requirements for printers to be recognised as being capable of delivering printed matter subject to these specifications.

The standard aims in particular at promoting:

- the reduction of discharges of certain toxic or otherwise polluting substances into waters,
- the reduction of environmental damage or risks related to the use of energy (global warming, acidification, ozone depletion, depletion of non-renewable resources) by reducing energy consumption and related emissions to air,
- the reduction of environmental damage or risks related to the use of hazardous chemicals, and
- the application of sustainable management principles in order to safeguard forests.

The primary purpose of this standard is to define environmental performance criteria for various printed matter products. Eco-labelled printed matter products are environmentally preferable because they reduce the sourcing of wood pulp for production from virgin or unsustainably managed native forests and lower environmental impacts through reducing energy, water and chemical use throughout the printing and production process and, when recycled, reduce toxic waste going to landfill. Thus the environmental loads of eco-labelled printed matter products compared to similar non eco-labelled printed matter products are reduced.

### **2.0 Product Category Scope**

This standard is applicable to the following categories of printed matter that are manufactured by means of sheet fed, web (coldset) and heatset offset, rotogravure, flexography, digital printing and letterpress printing. This standard applies to printed matter in which the main raw materials are packaging paper or printing paper including:

- 2.1 Journals, Reports, Books other publications,
- 2.2 Printed matter for advertising purposes, catalogues, brochures, posters,
- 2.3 Telephone directories and books,
- 2.4 Notepads, notebooks, forms and envelopes,
- 2.5 Leaflets inserts, binders, folders, and
- 2.6 Packaging and labels,

**The product group does not include wallpaper products.**

The product requirement applies to the final printed matter which may be finished e.g. stapled and bound. Loose inserts are not considered to be part of the printed item and need therefore not fulfil the ecolabelling requirement. Inserts which are intended for removal from the printed item and are fast in the printed item need not fulfil the requirements.

**3.0 Environmental Performance Criteria**

**3.1 Fitness for Purpose**

Certified products should be good performers in their intended application. It is implied that certain standards of product performance are implicit in the label. Certified product must ensure that the product is fit for its intended purpose and where relevant:

- 3.1.1 The product meets the performance requirements of the relevant Australian Standard for its intended application; or
- 3.1.2 The product meets any other internationally accepted standard if it is to be exported;

**3.2 Packaging Requirements**

The plastics packaging of printed matter must not contain chlorine (where the chlorine is chemically bound to the polymer). Packaging must not contain plastics in which phthalates are present. This requirement also applies to printed matter from finishing subcontractors (e.g. book binders).

**3.3 Requirements as to Paper and Raw Materials.**

The eco-labeled printed matter must consist of at least 90% by weight of paper that fulfils the Australian Environmental Labelling Association Inc. requirements for Publishing Paper GECA 4-2003, with the exception of books, catalogs, binders, folders, pads, booklets and forms which must consist of at least 80% by weight of paper which fulfils the standard for Publishing Paper GECA 4-2003. Printed packaging must consist at least 90% by weight of paper that fulfils the Australian Environmental Labelling Association Inc. requirements for Recycled Paper Products GECA 11-2002.

The eco-labeled printed matter may include up to 10% respective 20% of paper, which is not eco-labeled or does not fulfill the eco-labeling standard requirements of publishing paper GECA 5-2003 or Recycled Paper Products GECA 11-2002. The quantity of printed matter must be significant in order to be recognised as being environmentally preferable to similar printed matter material. This standard applies to the final printed matter when finished e.g. stapled and bound. Loose inserts are not considered to be part of the printed item and need not fulfill the ecolabelling standard. Inserts which are intended for removal from the printed item and are fast in the printed item must not fulfill the requirements.

Carbon paper must not form part of the printed matter. The printed matter must not contain metal dyes or metal foil printing by exception on book covers, binders and folders and official documents which are produced according to the requirements of the authorities or legislation.

#### 4.1 Production Methods Requirements

In this section the ecolabelling requirements for the various printing methods are presented. The requirements are divided up into requirements relating to the following four stages in the production of printed matter:

- Page production (the same requirements for all printing methods except digital printing)
- Form production
- Printing
- Finishing (the same requirements for all printing methods)

If any part of the production of a printed matter product is handled by subcontractors (e.g. repro or finishing processes), the subcontractor must comply with the ecolabelling requirements.

A maximum score is set in each table, and this score must not be exceeded. The total score for all tables, i.e. page production, form production, printing and finishing is summarized and must not exceed the maximum level provided for in scoring table below. The target value in each process stage is the recommended value to avoid exceeding the total score.

In the case of books, catalogues, binders and folders the total score and the score for finishing can be increased by 2 points compared with other types of printed matter, irrespective of the printing method used. See the definition of what constitutes a book in table 4.3.9. This is because books, catalogues, binders and folders have a longer life and it is therefore justifiable from an environmental perspective that more finishing (e.g. lamination) is applied to increase durability.

#### The Scoring Table: Total score for the entire production process and points for sub processes involved in different printing methods

Printing method	Page production		Form production		Printing		Finishing				Total points score	
	Target Value	Max. Value	Target value	Max. Value	Target value	Max. Value	Target value		Max. Value		Non book catalogue binder folder	Book catalogue binder folder
							Non book catalogue binder folder	Book catalogue binder folder	Non book catalogue binder folder	Book catalogue binder folder		
Sheet feed	2	4	1	2	7	9	2	4	3	5	12	14
Web offset (coldset)	2	4	1	2	7	9	2	4	3	5	12	14
Heatset	2	4	1	2	8	10	2	4	3	5	13	15
Flexography	2	4	2	3	3	5	2	4	3	5	9	11
Digitalprint	-	-	-	-	-	-	2	4	3	5	3	5
Letterpress	2	4	2	3	7	9	2	4	3	5	13	15

If the production of an item of printed matter involves the use of various methods in a single process stage (e.g. the cover is printed by means of sheet fed offset and the inside pages are printed by means of heatset (offset) the process stage must be scored separately for each method and calculated separately for each unit (ton) of paper used. In the case of letterpress printing, printing form production is reported as the production of flexoprinting form and printing as offset.

If the printer is verified as competent of delivering printed matter in within the environmental benchmarks described in the environmental scoring table they are capable of being recognised as a “Good Environmental Choice Competent Printer”.

If production for a part of printed matter takes place at subcontractors, or the specific process stage takes place at subcontractors, production shall be scored with the actual point to that part of the process.

The exception is page production and printing form production by the subcontractors: these are scored by the highest point by the subcontractors (incl. licence holder) included in the licence.

#### 4.1.1 Page production - all printing methods excluding digital printing

Ruling and logotype printing and flexographic printing of the insides of envelopes (linings) do not need to fulfil these requirements provided that these printings does not change more than once a year.

**Table 4.1.1 Production requirements for page production - all printing methods**

Stage in the process	Points/ requirement (req.)	Comment	Documentation requirement
<p><b>1. Collection of photographic chemicals and hazardous waste:</b></p> <p>Collection of developing agents and fixing solutions including that used for test printing.</p> <p>Collection of film and photographic paper containing silver.</p> <p>Collection of sludge, ion exchange mass and used filters.</p>	<p>Req.</p> <p>Req.</p> <p>Req.</p>	<p>Also applies to test printing.</p>	<p>Certificate on approved processing of waste (e.g. invoice, transport document or agreement of processing).</p>
<p><b>2a. Emissions of rinsing solution to sewage system:</b></p> <p>Rinsing solutions to be processed and the quantity of silver in outgoing solution must be measured</p> <p>Silver content in outgoing solution max 10 mg silver/m<sup>2</sup> of photographic film and paper</p>	<p>Req.</p> <p>Req.</p>	<p>Silver content of emitted rinsing solution measured in monthly sampling. See description in Sect. 6.</p>	<p>Report on processing of rinsing solution. The copy of laboratory report including the result of analyses for silver.</p>
<p>Treatment of rinsing solution with ion exchanger</p> <p>Electrolysis of fixing solution (with reuse on fixing solution)</p> <p>Partially closed rinsing system, rinsing solution recirculated and used for preparation of new fixing solution</p>	<p>2 p</p> <p>2 p</p> <p>1,5 p</p>	<p>All rinsing solution to sewage.</p> <p>All rinsing solution to sewage.</p> <p>Surplus rinsing solution to sewage</p>	

Partially closed rinsing system, rinsing solution recirculated and electrolysis of fixing solution (with reuse of fixing solution)	1,5 p	Surplus rinsing solution to sewage	
Algaecides in rinsing solution	1 p	Algaecide incl. chlorine are considered as an algae removing chemical	Report on use of algaecides from licence applicant
No algicides in rinsing solution	0 p		
<b>2b. No emissions of rinsing solution to sewage system</b>		Measurement of silver content is not needed.	
All rinsing solution is collected. No reuse of rinsing solution.	2 p	Collected rinsing solution for destruction	Report on processing of rinsing solution.
Rinsing solution recirculated and surplus collected.	1,5 p	Collected rinsing solution for destruction	Certificate on approved processing of rinsing solution (e.g. invoice, signed transport document or agreement of processing).
Rinsing solution recirculated and a part of rinsing solution is used for preparing new fixing solution.	1 p	Collected rinsing solution for destruction	
Electrolysis of fixing solution (with reuse on fixing solution) and a part of rinsing solution is recirculated	1 p	Collection of surplus rinsing solution for destruction	
All rinsing solution is recirculated and recycled. No surplus rinsing solution is generated.	0,5 p		
<b>2 c. Digital prepress</b> Digital system (CTP)	0 p	Printout transferred directly to printing form or to film without photographic chemicals	Description of film or printing form.
Total, target value	<b>2 p</b>		Report on points for respective process stages and the total score
<b>Total, max limit value</b>	<b>4 p</b>		

### Subcontractors in page production

The contribution to share of page film produced by non-controlled subcontractors must not exceed 20% of the total amount of printing form per printed item. If the contribution is 20% or lower, contractors will be ascribed 3 points. The weighted contribution from the non-controlled film will be a maximum of 0.6 points (20%) or a proportionately lower score depending on the percentage contribution to production.

If page production for a printed item takes place partially at the printer and partially at subcontractors, the highest point shall be scored by the subcontractors or the printer shall be used as the basis of calculation for the Good Environmental Choice licence.

#### 4.1.2 Offset printing

Table 4.1.2 Production requirements - Printing form, offset

Stage in the process	Points/ requirement	Comment	Documentation requirement
<p><b>1. Collection of hazardous waste:</b></p> <p>Collection of plate developing agents and cleaning filters.</p>	Req.		Certificate on approved processing of plate developers and filters (e.g. invoice, transport document or agreement of processing).
<p><b>2a. Wet offset</b></p> <p>Silver-based plates must not be used in wet offset.</p> <p>Solvent-based plate developing agents must not be used in wet offset.</p> <p>Use of water-based plate developing agents.</p> <p>No plate developing agents</p>	<p>Req.</p> <p>Req.</p> <p>1 p</p> <p>0 p</p>		<p>Description of type of plate.</p> <p>Material safety data sheet for any plate developing agent used.</p> <p>Solvent-based developing agents are developing agents where the solution used contains more than 15% by weight of volatile organic solvents. A volatile organic compound is a compound which has the steam pressure of the minimum 0.01 kPa or has the respective volatile under the specific use circumstances.</p>
<p><b>2b. Dry offset</b></p> <p>Silver-based plates must not be used in dry offset.</p> <p>Solvent-based plate developing agents.</p> <p>Water-based plate developing agents.</p> <p>No plate developing agents</p>	<p>Req.</p> <p>2 p</p> <p><b>1 p</b></p> <p>0 p</p>		<p>Description of type of plate.</p> <p>Material safety data sheet for any plate developing agent used.</p> <p>Solvent-based developing agents are developing agents where the solution used contains more than 15% by weight of volatile organic solvents. A volatile organic compound is a compound which has the steam pressure of the minimum 0.01 kPa or has the respective volatile under the specific using circumstances.</p>
<p><b>2c. CTP (silver free and silver containing plates)</b></p> <p><b>Silver-free plates:</b></p> <p>Solvent-based plate developing agents</p> <p>Water-based plate developing agents</p>	<p>2 p</p> <p>1 p</p>		<p>Description of type of plate.</p> <p>Material safety data sheet for any plate developing agent used.</p> <p>Solvent-based developing agents are developing agents where the solution used contains more than 15% by weight of organic solvents.</p>

No plate developing agents	0 p		A volatile organic compound is a compound which has the steam pressure of the minimum 0.01 kPa or has the respective volatile under the specific using circumstances.
<b>Silver-contained plates:</b>			
Silver quantity in solution max 10 mg silver/m <sup>2</sup> plate	Req.	Silver content of emitted rinsing solution after developing is measured by monthly sampling. See description in Chap. 6.	A copy of laboratory report including the result of analysis.
Rinsing solutions to be processed and the quantity of silver in outgoing solution must be measured	Req.		
Ion exchanger	2 p		
Closed system, rinsing solution recirculated and/or rinsing solution collected	1 p		
No rinsing solution	0 p		
<b>Total, target value</b>	<b>1 p</b>		Report on points for respective process stage and the total score
<b>Total, max limit value</b>	<b>2 p</b>		

### 4.1.3 Printing, offset

**Table 4.1.3 Production requirements, offset printing - Printing, sheet fed and web offset (coldset), heatset offset**

Stage in the process	Points/ requirement (req.)	Comment	Documentation requirement	
<b>1. Printing ink</b>				
UV inks	2 p	Vegetable dyes and/or vegetable overprint varnish must contain vegetable oils. Max 2% mineral oil in these dyes/varnishes.	Report on calculation of points. <b>2kg VOC.</b>	
Other inks and/or other overprint varnishes (non vegetable)	1 p			
Vegetable dyes and/or vegetable overprint varnish	0 p			
<b>2. Consumption of washing agents (washing solutions) for rolls, cylinder blankets, printing plates (litres/tonnes paper):</b>		Consumption means purchased amount of washing agents (purchased chemical products). Tons of paper refers to purchased paper adjusted for stock difference for the entire output and every printing method.	Report of purchased paper and washing agents. Report on calculation: Litre/ton product and points.	
Web offset (coldset)	Heatset			Sheet fed and form printing
Max 1.3	Max 2.0			Max. 3.0
	Req.			



Alcohol	>4.8-6	3 p	paper adjusted for stock difference. Purchased paper and alcohol consumed annually specified for entire production and every printing method. Water which is added by the printing house is not considered in alcohol consumption.	points. Purchased amount of alcohol.
Alcohol	>3.6-4.8	2,5 p		
Alcohol	>2.4-3.6	2 p		
Alcohol	1.2-2.4	1,5 p		
Alcohol	<1.2	1 p		
Alcohol free wet offset		0,5 p		
No damping solution, dry offset		0 p		

<p><b>5. Used washing agents, pigment and sludge residues to be collected for destruction or recycling</b></p> <p>Cleaning cloths and rags delivered to registered waste contractor.</p>	<p>Req.</p> <p>Req.</p>	<p>Washing agents means purchased chemical products which are used as washing agent for cleaning of rolls, cylinder blankets and printing plates in the press.</p> <p>Washing agents which are used by manual cleaning and in automatic cleaning devices must be processed.</p>	<p>Certificate on approved processing of washing agents, sludge and residual ink, cleaning clothes and rags (e.g. invoice, transport document or agreement of processing). If washing agents are recycled, it must be reported.</p>
<p><b>6. Emissions of washing water</b></p> <p>Treatment of waste washing water (Requirement applies to waste washing water which contain pigment particles &gt;5 µm or 50 mg/l non-polar aliphatic hydrocarbons in outgoing water).</p> <p>Waste washing water collected for destruction.</p> <p>Waste washing water must be cleaned of particles with 5 µm-filter.</p> <p>Waste washing water is cleaned by separation of non-polar aliphatic hydrocarbons. At most 50 mg/l in outgoing washing water.</p> <p>No waste washing water or no washing water</p>	<p>Req.</p> <p>1 p</p> <p>0,5 p</p> <p>0 p</p> <p>0 p</p>	<p>Waste washing water is defined as water coming from cleaning rolls, blankets and printing plates in the press and washing water coming from cleaning of damping solution system (e.g. damping socks, brush damping system).</p> <p>Waste washing water which is defined as environmentally hazardous waste must be handled according to the point 5 in the table.</p> <p>Separation e.g. by carbon filter.</p>	<p>Report on treatment method.</p> <p>Certificate on approved processing of cleaning residuals or waste washing water (e.g. invoice, transport document or agreement of processing).</p> <p>Report on cleaning effect shall be given by filter supplier.</p> <p>Result of analysis for non polar aliphatic hydrocarbons from laboratory shall be given. A representative sample from production must be sent for analysis. Attend that a sample can be analysed together with waste damping solution if it is relevant.</p>

<p><b>7. Emissions of damping solution</b> Treatment of waste damping solution (Requirement applies to waste damping solution which contain pigment particles &gt;5 µm or 50 mg/l non-polar aliphatic hydrocarbons or &gt;20% nitrification in outgoing solution).</p> <p>Waste damping solution collected for destruction</p> <p>Waste damping solution must be cleaned of particles with 5 µm-filter.</p> <p>Waste damping solution is cleaned by separation of non-polar aliphatic hydrocarbons. At most 50 mg/l in outgoing damping solution and at most 20% of nitrification preventive effect with 20% mixing.</p> <p>Dry offset</p> <p>No waste damping solution</p>	<p>Req.</p> <p>1 p</p> <p>0,5 p</p> <p>0 p</p> <p>0 p</p>	<p>Waste damping solution is defined as damping solution from the damping solution system. Waste washing water from cleaning of damping solution system shall be considered according to the sec. 6.</p> <p>Separation e.g. by carbon filter.</p>	<p>Report on treatment method. Certificate on approved processing of cleaning residuals or waste damping solution (e.g. invoice, transport document or agreement of processing).</p> <p>Report on cleaning effect from filter supplier.</p> <p>Result of analysis of non polar aliphatic hydrocarbons. For nitrification prevention a result of analysis must be given.</p> <p>A representative sample from production must be sent for analysis. Attend that sample of non polar aliphatic hydrocarbons can be analysed together with waste washing water if it is relevant.</p>
<p><b>8. Surfactants in damping solution and damping solution additives:</b></p> <p>Surfactants that are released to sewage system must be readily degradable in accordance with the OECD specifications or equiv. Surfactants which is readily biodegradable according to OECD regulations or equiv.</p> <p>Other surfactants</p>	<p>0 p</p> <p>0,5 p</p>	<p>Test method: OECD Guidelines for testing of chemicals ISBN 92-64-1222144, no. 301 A-F or equiv.</p>	<p>Report on surfactants plus certification from supplier of the chemicals concerning the degradability of the surfactants</p>
<p><b>Sheet fed and web offset:</b></p> <p><b>Total, target value</b></p> <p><b>Total, max limit value</b></p>	<p><b>7 p</b></p> <p><b>8 p</b></p>		<p>Report on points for respective process stages and the total score.</p>

<b>Additional requirements for heatset offset:</b> <b>9. NMVOC*-emissions</b>  NMVOC*-emissions to flue max. 20 mg C/Nm <sup>3</sup> (norm cubic metres)	Req.	*NOVO = Non Methane Volatile Organic Compounds	Measured result,
<b>10. Control of emissions:</b> No registration of temperature and production (when printing)	2 p		Description of system.
Continuous registration of temperature.	1 p		Punch tape, data results printout of data.
Continuous registration of temperature and production or control system preventing emissions.	0 p		
<b>Heatset offset:</b>  <b>Total, target value</b> <b>Total, max limit value</b>	<b>8 p</b> <b>9 p</b>		Report on points for respective process stage and the total score.

#### 4.1.4 Flexography, production of printing form

##### The production requirements

No report on the production of printing form is required in the case of ruling and logotype printing of printed matter and lining printing of envelopes. The exception is the requirement of processing of plate remains (sec. 1a and 1b) and processing of solvent residues (sec. 1a), which shall be reported. The points scored in these cases are 0 point.

**TABLE 4.1.4 PRODUCTION REQUIREMENTS- PRINTING FORM PRODUCTION, FLEXOGRAPHY**

Stage in the process	Points/ requirement	Comment	Documentation requirement
<b>1 a. Solvent-based washing solution (developing agents):</b>  Plate remains and solvent residues to be processed.	Req.	If different types of washing solutions are used, the points may be weighted according to the average figure attributable to each type of washing solutions (average figure specified to one decimal point).  Washing solution which consists of mixture of various solvents must be weighted by shares of solvents.  Solvents which are recycled and reused are not considered in point calculation.	Certificate on approved processing of plate remains and solvent residues (e.g. invoice, transport document or agreement of processing). Report on washing solutions and solvents. Number of litres of washing solutions used and their points. Calculation of average (e.g. 1.6 points).
Washing solution including organic solvents: Aromatic content >3%	3 p		
Aromatic content max. 3%: Vapour pressure at 20 °C over 0.3 kPa	2,5 p		
Vapour pressure at 20 °C over 0.2 to 0.3 kPa	2 p		
Vapour pressure at 20 °C over 0.05 to 0.2 kPa	1,5 p		
Vapour pressure at 20 °C over 0.01 to 0.05kPa	1 p		
Vapour pressure at 20 °C below 0.01 kPa	0,5 p		
Washing solutions including vegetable solvents:			

Vegetable solvents (boiling point >250 °C)	0 p		Point and vapour pressure is reported to washing agents according to the appendix 2. Also a boiling point for vegetable solvents is given.
<b>1 b. Water-based washing solutions (consisting of water):</b> Plate remains to be processed.	Req.		Report on treatment method and points. Certificate on approved processing of plate remains and purification residues or waste washing solution (e.g. invoice, transport document or agreement of processing).
Treatment of washing solution not in place.	2 p		
Waste washing solution collected destruction.	1 p		
Waste washing solution must be cleaned of particles with 5 µm-filter.	0,5 p		Report on cleaning effect from filter supplier.
Recirculation of washing solution.	0,5 p		
Waste washing solution is cleaned by separation of non-polar aliphatic hydrocarbons. At most 50 mg/l in outgoing washing solution.	0 p	Separation e.g. by carbon filter.	Result of analysis for non polar aliphatic hydrocarbons from laboratory shall be given.
Reuse of all washing solutions to dilution to a new washing solution	0 p		
No waste washing solution	0 p		
<b>1 c. Heat transfer</b> Processing of plate remains	0 p Req.		Certificate on approved processing of used plates
Total, target value	<b>2 p</b>		Report on points for respective process stages and the total score.
Total, max limit value	<b>3 p</b>		

#### 4.1.5 Flexography, printing

Table 4.1.5 Production Requirements - Printing, flexography

Stage in the process	Points/ requirement	Comment	Documentation requirement
<b>1. Printing ink:</b> Water-based flexography ink or UV flexography ink must be used	Req.	Solvent-based flexography ink must not be used	
UV flexography ink	1 p		

Water-based flexography ink	0 p		
<p><b>2. Washing agents (washing solutions):</b>  Washing agents including organic solvent:  Aromatic content &gt; 1%</p> <p>Aromatic content &lt;1%, max. vapour pressure 5 kPa (by 20 °C):  Vapour pressure over 20 °C over 0.3 kPa  Vapour pressure 20 °C over 0.2 to 0.3 kPa  Vapour pressure 20 °C over 0.5 to 0.2 kPa  Vapour pressure 20 °C 0.01-0.05 kPa  Vapour pressure 20 °C under 0.01 kPa</p> <p>Washing agents including vegetable solvents:  Vegetable solvents (boiling point &gt; 250 °C)</p> <p>Water (within the purchased washing agent),  sour or alcalic washing agents which do not  include organic solvents.</p> <p>Ecolabelled washing agent (according to the  ecolabelling criteria for industrial cleaning and  degreasing agents):  - non-vegetable washing agent  - vegetable washing agent (boiling point &gt;250 C)</p>	<p>3 p</p> <p>2,5 p</p> <p>2 p</p> <p>1,5 p</p> <p>1 p</p> <p>0,5 p</p> <p>0 p</p> <p>0 p</p> <p>1 p</p> <p>0 p</p>	<p>If various types of solvents are used, the points shall be weighted on the basis of the percentage consumption of each individual solvent (average figure specified to one decimal point). Washing agent which consists of mixture of solvents must be weighted by shares of various chemicals.</p> <p>A sour or alcalic washing agent (purchased) is to be scored by shares of including organic solvents and vapour pressure of solvents. Washing agents which are recycled and reused are not considered in point calculation. Water which is added by the printing house is not considered in point calculation of washing agent.</p>	<p>Report of type and quantity of washing agents for cleaning.</p> <p>Report on calculation:  Number of litres washing agents used and their points.  Calculation of the average figure (e.g. 1.6 points) point.</p> <p>Also a boiling point for vegetable solvents is given.</p>
<p><b>3. Used washing agents, ink and sludge residues to be collected to destruction or to recycling.</b></p> <p>Cleaning cloths and rags delivered to incineration with energy recovery, or wash</p>	<p>Req.</p> <p>Req.</p>		<p>Certificate on approved processing of washing agents, ink and sludge residuals, clothes and rags (e.g. invoice, transport document or agreement of processing).</p>
<p><b>4. Waste washing water:</b>  Treatment of waste washing water must be in place.</p>	<p>Req.</p>		<p>Report on processing method and points.  Certificate on</p>

Waste washing water collected for destruction	1 p		approved processing of cleaning residues or waste washing water (e.g. invoice, transport document or agreement of processing).
Waste washing water must be cleaned of particles with 5 µm-filter.	0,5 p		Report on cleaning effect from filter supplier.
Recirculation of washing water	0,5 p		
Waste washing water is cleaned by separation of non-polar aliphatic hydrocarbons. At most 50 mg/l in outgoing washing water.	0 p	Separation e.g. by carbon filter.	Result of analysis for non polar aliphatic hydrocarbons from laboratory shall be given.
Reuse of all washing water to dilution to printing inks	0 p		
No waste washing water or no washing water	0 p		
<b>Total, target value</b>	<b>3 p</b>		Reports on points for respective process stages and the total score.
<b>Total, max limit value</b>	<b>5 p</b>		

#### 4.1.6 Digital printing

##### Requirement for production in digital printing

Explanation for methods:

Computer-to-Print (image renewed with each revolution (print) :

- Electrophotography (Xerography) with dry toner (in copying machines, in printers or in digital presses)
- Electro photography (Xerography) with wet toner (liquid ink, electro ink)
- Inkjet (inkjet printers)
- Digital duplication (colour).

**Table 4.1.6 Digital printing**

Stage in process	Requirement (req.)	Documentation
<b>1 a. Digital printing</b> Methods: Electro photography (xerography) with wet and dry toner in digital presses or digital duplication  Discarded electronic components, toner cartridges, used printing form, depleted photo-sensitive layers to registered waste contractors.	REQ.	Certificate on approved processing of electronic, toner /ink cartridges, used printing forms, photosensitive layers, toner, ink and chemical residues, cloths and rags (e.g. invoice, transport document or agreement of processing).

Toner residue and other residual chemicals to be collected.	Req.	
Cleaning cloths and rags delivered to incineration with energy recovery, or wash.	Req.	
<p><b>1 b. Process copiers, printers</b>                  Methods: Electro photography (Xerography) with dry toner, inkjet:</p> <p>Discarded electronic components, toner/ ink cartridges, used printing forms, depleted photo-sensitive layers to be processed.</p> <p>Toner/ink residues and other residual chemicals to be collected.</p> <p>Cleaning cloths and rags delivered to incineration with energy recovery, or wash.</p> <p>Automatic energy-saving mode (stand by or energy saving mode), where electricity consumption does not exceed 30% of the maximum electricity consumption during printing.</p> <p>Combination toner cartridges comprising a disposable unit containing both toner container, developer and drum cannot be used.                  Toner cartridges that can be refurbished and refilled are acceptable</p>	<p>Req.</p> <p>Req.</p> <p>Req.</p> <p>Req.</p> <p>Req.</p>	<p>Certificate on approved processing of electronic, toner /ink cartridges, used printing forms, photosensitive layers, toner, ink and chemical residues, cloths and rags (e.g. invoice, transport document or agreement of processing).</p> <p>Information/documentation on automatic energy-saving mode from manufacturer/supplier of machines. Max. energy consumption during operations (W) and electricity consumption in stand by/energy saving mode (W) to be specified.</p> <p>Information/documentation on the design of the toner cartridge from the manufacturer/supplier of the machine/toner cartridge.</p>

**4.2 Finishing processes, all printing methods and printed matter**

**Requirements for production in finishing processes**

The requirements for finishing are contained in Table 4.3.9 and apply to all printed matter which are finished. Requirements are set for the following methods: lamination, lacquering and gluing.

**Table 4.2 Production Requirements - Finishing**

Stage in the process	Points/ requirement	Comment	Documentation requirement
1. Cleaning cloths and rags (including solvents) delivered to approve waste processor.	Req.		Certificate on approved processing of cloths and rags (e.g. invoice, transport document or agreement of processing).
2. Lamination			

Lamination by self-adhesive, non water soluble adhesives must not be used.	Req.	Lamination means coating of both sides or one side of paper consisting of a foil comprising polythene, polypropylene, polyacetate, polythene/polypropylene	Reporting of points
Lamination may be used only in covers of books and catalogs, binders and folders.	Req.		
Solvent-based adhesive + plastic foil	4 p		
PUR-based glue (polyurethane glue) + plastic foil	3 p		
Thermo foil Water-based glue + plastic foil	3 p 2 p		
<b>3. Lacquering:</b> Solvent-based lacquer.	3 p	Overprint varnish applied using the ink unit of the press is scored in table 4.3	Reporting of points. Solvent-based lacquers are lacquers where the solution used contains more than 15% by weight of volatile organic solvents. A volatile organic solvent is a compound which has the vapour pressure of the minimum 0.01 kPa or has the respective volatile under the specific using circumstances.
UV lacquer (application using a lacquering machine or lacquer tower in the final ink unit).	2 p		
Water based lacquer (application using the damping or ink units of the press, lacquer tower in the final ink unit or a separate lacquering unit).	1 p		
<b>4. Adhesives:</b> Self-adhesive, non water soluble adhesives not permitted (this applies also for labelling).	Req.	Where different types of glue are used in the same article of printed matter, apply the highest of the relevant points. Weighting of points for adhesive is not allowed.	Reporting of points. Solvent-based adhesives are adhesives where the solution used contains more than 15% by weight of volatile organic solvents. A volatile organic solvent is a compound which has the vapour pressure of the minimum 0.01 kPa or has the respective volatile under the specific using circumstances.
Solvent-based adhesive	3 p		
PUR-based adhesive	2 p		
Hot melt adhesive	2 p		
Animal adhesive	1 p		
Dispersion adhesive (water based)	1 p		
Ecolabelled adhesive (according to ecolabelling criteria of adhesive)	0 p		
Books, catalogues, binders, folders  <b>Total, target value</b> <b>Total, max limit value</b>	  <b>4 p</b> <b>6 p</b>	These are defined as stitched and glue bound books/catalogues/binders /folders with hard or soft covers with a long life (relevant period of use) i.e. over one year.	Report on type of books/catalogues/binders/ folders and points.
<b>Other printed matter, excl. books, catalogues, binders, folders</b>			

<b>Total, target value</b>	<b>2 p</b>	Report on points for respective process stages and the total score.
<b>Total, max limit value</b>	<b>4 p</b>	

#### 4.3 Paper cutting waste – requirements for all printing methods

The paper cutting waste can at most be 20% for every single eco-labelled printed item (in weight or in area).

**Table 4.3 Requirements for Paper cutting waste**

Stage in the process	Points/ requirement	Comment	Documentation requirement
<p><b>Cutting waste</b> Cutting waste for an ecolabelled printed matter may be at most 20% (in weight or area).</p> <p><b>Limits:</b> High Quality Journals, Reports, Books other Publications – 20%</p> <p>Standard Journals, Reports, Books and Publications – 15%</p> <p>Printed matter for advertising purposes, catalogues, brochures, posters, - 15%</p> <p>Telephone directories and other directories, - 12%</p> <p>Notebooks, notebooks, forms and envelopes, - 15%</p> <p>Leaflets inserts, binders, folders, and – 12%</p> <p>Packaging and labels – 10%</p>	Req.	<p>Cutting waste refers to cutting of printed ark. Cutting means the difference between area/weight of the purchased paper and of the finished printed item. Cutting waste from neither punching, cutting of the hole in neither the printed item nor registration striking is not included in cutting waste.</p>	<p>Printing company must declare that cutting waste does not exceed 20% for ecolabelled printed matter (by %). It shall be informed in application how cutting waste shall be calculated and documented. A calculation over produced cutting waste from 5 printed items being representative products (in application) shall be appended in application. The fulfilment of requirements shall be controlled by control visits which are performed by the Australian Environmental Labelling Association Inc.</p>

#### 4.4 Chemical requirements

The requirements as to chemicals apply to production chemicals used in page production, printing form production, printing and finishing. The chemical requirements are including the general requirements of production chemicals and the specific requirements of auxiliary chemicals and additive chemicals.

##### 4.4.1 General requirements for production chemicals

The requirements concern all the chemicals for which the requirements are set in the criteria document. The requirement is concerning film developer, fixing agent, plate developer, printing inks, toners, inks, overprinting varnishes, varnishes, adhesives and laminations which are used with production of ecolabelled printed matter. The requirement is also valid for all the washing agents, damping solution concentrate and damping solution additives and algecides which are used in the process included in the ecolabelling licence.

- The production chemicals must be listed in a chemicals register reported stating product name and areas of use and Material Safety Data Sheets must be available on-site.

#### 4.4.2 Requirement of auxiliary chemicals

The requirements concern the chemicals for which the requirements are set in the criteria document and which are used as auxiliary chemicals with production of ecolabelled printed matter. The requirement is valid for all the washing agents (washing solutions), damping solution concentrate and damping solution additives and algaecides which are used in the process included in the ecolabelling licence.

#### 4.4.3 Requirement of washing agents (washing solutions):

- Washing agents must not contain phthalates, nonylphenols (or derivatives of these), ethylene glycol ethers (e.g., CAS: 111-77-3, 111-90-0, 109-86-4, 110-80-5) or halogenated hydrocarbons.
- The aromatic content in the washing agents must not exceed 50 weight-% of the product. Exception: Toluene may be used as washing agent in rotogravure.

#### 4.4.4 Requirement of damping solution concentrates, damping solution additives and algaecides:

- Biocides in damping solution concentrate, damping solution additives and in algaecides must not be potentially bioaccumulable (bioaccumulable if BCF =100 or log KO/W =3). This must be tested in accordance with the test method in Section 6.1.
- Damping solution concentrates, damping solution additives and algaecides must not contain phthalates, nonylphenols (or derivatives of these), ethylene glycol ethers (Cas: 111-77-3, 111-90-0, 109-86-4, 110-80-5) or halogenated hydrocarbons.

#### 4.4.5 Requirements of additive chemicals

The requirements concern the chemicals for which the requirements are set in the criteria document and which are used as additive chemicals within ecolabelled printed matter.

**The requirements concern printing inks, overprint varnishes (including chemical products used as additives in printing ink), toners, inks, adhesives, lacquers and laminates.**

- Printing ink, overprint varnish, toner, ink, adhesive, lacquer and laminate must not contain a total of more than 2% by weight of substances classified as environmentally hazardous in accordance with EU Directive 67/548/EEC, 18<sup>th</sup> adaptation or classified as acutely toxic, carcinogenic, mutagenic or toxic to reproduction or any combination according in accordance to the approved criteria for the classification of hazardous substances by the Australian National Occupational Health and Safety Commission. As an exception photocurable printing inks (e.g. UV printing inks) may include a maximum 1% of acutely toxic substances when photocured and toluene may be used in rotogravure printing inks.
- Printing inks, overprint varnish, toner, ink, adhesive, lacquer and laminate classified as environmentally hazardous in accordance with EU Directive 99/45/EEC\*2 or in accordance with applicable regulations any ingredient that is classified or may be classified as:
  - a) acutely toxic
  - b) substances that are carcinogenic
  - c) substances that are mutagenic
  - d) substances that are toxic to reproduction

or any combination thereof, according to the approved criteria for the classification of hazardous substances by the Australian National Occupational Health and Safety Commission.

- As an exception photocurable printing inks (e.g. UV printing inks) may include maximum 1% of acutely toxic substances when photocured and toluene may be used in rotogravure printing inks.
- Pigments in printing ink/toner or ink must not be based on heavy metals, aluminium or copper (e.g. aluminium in silver pigments, copper in gold pigments) with the exception of copper in phthalocyanine pigments.
- The content of the following heavy metals in printing inks, toners or ink must not exceed a total of 100 ppm: Lead, cadmium, mercury and hexavalent chromium.
- Printing ink, overprint varnish, toner, ink, adhesive, lacquer and laminate must not contain phthalates, nonylphenols (or derivatives of these), ethylene glycol ethers (Cas: 111-77-3, 111-90-0, 109-86-4, 110-80-5) or halogenated hydrocarbons.

(Directive 99/45/EEC which relates to environmental classification of complex products (preparations) will become mandatory after the period of notice in the coming years (no later than 2004). Classification becomes mandatory when environmental classification of product compounds according to Directive 99/45/EEC, Australia does not at this time have a classification framework which encompasses ecotoxicological and environmental classification of compound products but is looking to the establishment at such a regime commencing in 2005.)

#### **4.5 Waste management requirements**

- The printing company and its subcontractors for page production, printing form production, printing and finishing processes must sort and handle the various types of waste generated in the production of printed matter at source and submit it for processing. A waste management plan must be submitted detailing the sorting and processing of all types of waste, e.g. hazardous waste, metal, plastic, paper waste. Various types of paper including printing paper (waste paper) board/corrugated board must be sorted and submitted these for processing.
- The licence-holder is required to sort and handle for processing of electronic waste (at source).
- Aluminium printing plates and waste paper from production (from all stages of the process) must be submitted for recycling.

#### **Documentation requirements:**

- A waste management plan to be submitted by the licence applicant and subcontractors (for page production, printing form production, printing and finishing) including lists of all types of waste, methods of approved and final processing (for example recycling, disposal or incineration) and the names of collecting companies and final waste processing companies.
- Certification of approved processing of hazardous waste (e.g. invoice, transport document, copy of the agreement by printing company and the processing companies).

#### **4.6 The operation and service of purification equipment**

Equipment for purification equipment with process waste with production of ecolabelled printed matter must be operated and maintained in accordance with the recommendations of the manufacturer or supplier of the equipment (in such a way that the requirements are fulfilled throughout the period of validity of the licence).

An account of maintenance of the following equipment must be provided and recorded in a journal:

- All filters for purification of process waste (in the case of emissions to air and water)
- Purification equipment (e.g. after-burners) for VOC emissions in heatset-offset and for toluene emissions in rotogravure
- Ion exchangers, equipment of electrolyses of fix, evaporators, distillation equipment, developing machines (by page and printing form developing) with non-enclosed rinsing solution systems.

#### 4.7 Continuous Environmental Improvement

The manufacturer should have a mechanism of continuous environmental improvement which achieves and quantifiable reduction of environmental load per tonne of printed matter in one or more of the following impact categories:

- a) Percentage % of waste paper cut from each ecolabelled product per tonne during the licence period.
- b) The total water use per tonne of ecolabelling product during the licence period.
- c) The amount of energy consumed per tonne of ecolabelled product during the licence period.
- d) The water toxicity emissions levels per tonne of ecolabelled product during the licence period.
- e) The establishment of a more comprehensive waste recycling and management program.
- f) A reduction of one point in the scoring matrix for printing.
- g) A reduction of one point in the scoring matrix for finishing.

**Note:** The requirement for continuous environmental improvement is not relevant for the first assessment and at the commencement of a licensing period. This criterion will be assessed at the time of annual audit. The purpose of this criterion is to encourage and provide clear direction to recognised printers that the requirements of this standard will be raised at the time of the subsequent revision.

#### 5.0 Compliance to Environmental Regulations

The applicant is required to comply with relevant environmental legislation and government orders at the Local, State and Commonwealth level, if these have been issued. An applicant's compliance with this criterion may be established by undertaking a series of random checks and gathering samples of applicant operational procedures and documents by approved assessors as evidence to support compliance during the verification and /or a statement of self declaration by an executive officer of the applicant organisation. Where an applicant is from an overseas jurisdiction, that jurisdictions environmental regulations apply.

#### 5.1 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.

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*, and *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 jurisdictions 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 compensations 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 and gathering samples of applicant operational procedures and documents by approved assessors as evidence to support compliance during the verification and /or a statement of self declaration by an executive officer of the applicant organisation.

## 5.2 Compliance Testing

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

The Australian Ecolabel Program classifies approved assessors as:

1. Assessors registered by the Good Environmental Choice Australia as environmental professionals that hold expertise relevant for an assessment and which have undertaken training in the procedures of the Australian Ecolabel Program, or
2. Environmental auditors accredited with the Quality Society of Australasia; or
3. Assessors registered with the Environmental Choice New Zealand Trust.

New testing shall be undertaken by a laboratory accredited by the National Association of Testing Authorities (NATA) or similar overseas accreditation to carry out the relevant tests and/or documentation detailing environmental performance against the key indicators for this standard. The tests results should be presented on NATA endorsed reports or from a laboratory acceptable to Good Environmental Choice Australia

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:

- 1) Technical specification of the product.
- 2) Obvious characteristics of the product from examination.
- 3) Scientific and test results and reports.
- 4) Environmental management system and audit reports and results.
- 5) Life cycle assessment of each stage of the product life cycle via a physical audit and examination.
- 6) Life cycle assessment via scientific testing.
- 7) A statement of confirmation by an executive officer.
- 8) An assessment of company or government records.
- 9) Other material that can be considered objective evidence.

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