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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels,
C(2005)

COMMISSION DECISION

of

**establishing the ecological criteria for the award of the Community eco-label to printed
paper products**

(Text with EEA relevance)

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THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Regulation (EC) No 1980/2000 of the European Parliament and of the Council of 17 July 2000 on a revised Community eco-label award scheme¹, and in particular the second sub-paragraph of Article 6(1) thereof and the sixth paragraph of point 2 of Annex V thereof,

After consulting the European Union Eco-Labeling Board,

Whereas:

- (1) Under Regulation (EC) No 1980/2000, the Community eco-label may be awarded to a product possessing characteristics which enable it to contribute significantly to improvements in relation to key environmental aspects.
- (2) Regulation (EC) No 1980/2000 provides that specific eco-label criteria, drawn up on the basis of the criteria drafted by the European Union Eco-Labeling Board, are to be established according to product groups.
- (3) In the case of printed paper products, the ecological criteria should be divided into criteria, each of which must be complied with, and criteria, a fixed proportion of which must be complied with.
- (4) The ecological criteria, as well as the related assessment and verification requirements, should be valid for a period of 4 years.
- (5) The measures provided for in this Decision are in accordance with the opinion of the Committee instituted by Article 17 of Regulation (EC) No 1980/2000,

¹ OJ L 237, 21.9.2000, p. 1.

HAS ADOPTED THIS DECISION:

Article 1

The product group “printed paper products” shall comprise any printed product made of paper, paper board or paper based substrates. Examples of eligible items include envelopes and other paper stationery, exercise books, pads, binders, folders, catalogues, magazines, books, booklets, leaflets and forms. Inserts, covers and any printed paper part of the final printed paper product are included in the scope. If different printing technologies are used, each technology must fulfil the criteria specific for that technology.

The product group shall not cover the following products:

- a) printed tissue papers;
- b) printed paper products used for packaging and wrapping;
- c) printed paper products produced by using metal-complex inks based on lead chromium (VI), nickel, cadmium, copper (excluding copper-phthalocyanine), cobalt of greater than 0.1 % (w/w), and mercury.

Article 2

The eligible applicants for the product group “printed paper products” include printing houses, printing house customers, such as for example publishers, and paper converters.

In order to be awarded the Community eco-label under Regulation (EC) N° 1980/2000, a printed paper product must fall within the product group “printed paper products” and must comply with each of the criteria set out in Section A of the Annex to this Decision.

In addition, the printed paper product must comply with a sufficient number of the criteria set out in Section B of the Annex, to each of which a number of points is attributed. The printed paper product must acquire at least the following total number of points:

- (a) Sheet fed offset: 31
- (b) Web fed cold-set offset: 28
- (c) Heat-set offset: 32
- (d) Flexographic printing: 31
- (e) Rotogravure printing: 34
- (f) Screen printing: 26
- (g) Digital printing: 36

Article 3

For administrative purposes, the code number assigned to the product group ‘printed paper products’ shall be ‘28’.

Article 4

The ecological criteria for the product group “printed paper products”, as well as the related assessment and verification requirements, shall be valid for 4 years from the date of notification of this Decision.

Article 5

This Decision is addressed to the Member States.

Done at Brussels, [...]

For the Commission
Stavros DIMAS
Member of the Commission

ANNEX

FRAMEWORK

The aims of the criteria

These criteria aim to promote:

- the environmental efficiency of de-inkability and recyclability for printed paper products
- the reduction of VOC emissions,
- the reduction or prevention of risks for the environment and for human health related to the use of hazardous substances,
- the use of paper and paperboard substrate with low environmental impact.

The criteria are set at levels that promote the labelling of printed paper products that have a low environmental impact.

Assessment and verification requirements

The specific assessment and verification requirements are indicated immediately below each criterion set out in Sections A and B.

All printing on the printed paper product must fulfil the criteria. Parts of the product that are printed by a sub-contractor must therefore also fulfil the printing requirements.

Where appropriate, test methods and standards other than those indicated for each criterion may be used if their equivalence is accepted by the Competent Body assessing the application.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, it is understood that these may originate from the applicant and/or his supplier(s) and/or their supplier(s), et cetera, as appropriate.

Where appropriate, Competent Bodies may require supporting documentation and may carry out independent verifications.

The Competent Bodies are recommended to take into account the implementation of recognised environmental management schemes, such as EMAS or ISO 14001, when assessing applications and monitoring compliance with the criteria.

(Note: it is not required to implement such management schemes.)

SECTION A

CRITERIA REFERRED TO IN ARTICLE 2, SECOND PARAGRAPH

CRITERIA THAT APPLY TO THE PRODUCTION OF ECO-LABELLED PRINTED PAPER PRODUCTS ONLY

1. SUBSTRATE

- a) The eco-labelled printed paper product shall consist of at least 90% by weight of paper or paperboard, except for books, catalogues, binders, folders, pads, booklets or forms that shall consist of at least 80% by weight of paper or paperboard.
- b) Papers and paperboards used for the production of the eco-labelled printed paper shall comply with the requirements as laid down in Appendix 1.

Assessment and verification: The applicant shall provide the specifications of printed-paper products concerned, including the trade names, amounts and weight/m² of the paper used. The list shall also include the names of the suppliers of the papers used.

For the criterion 1.b the assessment and verification requirements set under Appendix 1 shall apply.

2. CHEMICAL PRODUCTS

2.1 Printing inks, dyes, toners, overprinting varnishes, varnishes, adhesives, washing agents or damping solutions

Printing inks, dyes, toners, overprinting varnishes, varnishes, adhesives, washing agents or damping solutions shall only be allowed if:

- (a) they are not classified with any of the following risk phrases, or any combination thereof, in accordance with Directive 1999/45/EC and its amendments:

R52-53 (Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment)

Dangerous to environment (N):

R50 (very toxic to aquatic organism)

R50-53 (very toxic to aquatic organism and may cause long term adverse effects in the aquatic environment)

R51-53 (toxic to aquatic organism and may cause long term adverse effects in the aquatic environment)

R59 (Dangerous for the ozone layer)

- (b) they are not classified with any of the following risk phrases, or any combination thereof, in accordance with Directive 1999/45/EC² and its amendments:

Dangerous to health:

- Toxic (T)
R23 (by inhalation), R24 (in contact with skin), R25 (if swallowed),
R48 (Danger of serious damage to the health by prolonged exposure).
- Very toxic (T+)
R 26 (by inhalation), R27 (in contact with skin), R28 (if swallowed),
R39 (Danger of very serious irreversible effects)
- Carcinogenic (T)
R45 (may cause cancer), R49 (may cause cancer by inhalation)
- Mutagenic (T)
R46 (may cause heritable genetic damage).
- Reprotoxic (T)
R60 (may impair fertility), R61 (may cause harm to the unborn child),
R62 (possible risk of impaired fertility).
- Harmful (Xn)
R40 (possible risk of cancer)
R63 (possible risk of harm to the unborn child).

This requirement does not apply to toluene for use in rotogravure printing processes if a closed/encapsulated installation/recovery system, or any equivalent, is in place to control and monitor fugitive emissions and if the recovery efficiency is at least 92%.

Assessment and verification: The applicant shall provide a list of chemical products used in the printing house for the production of the eco-labelled printed paper products. The requirement applies to printing inks and dyes, toners, overprinting varnishes, varnishes, adhesives, washing agents and damping solutions that are used in the process. The list provided by the applicant shall include the amount, function and supplier of any chemical product used, together with the Safety Data Sheet, designed in accordance with Directive 2001/58/EEC. The applicant shall provide appropriate documentation on the recovery efficiency of the closed/encapsulated installation/recovery system, or any equivalent, that has been put in place to deal with the use of toluene in rotogravure printing processes according to the criterion 2.1.b.

2.2 Biocide products

Biocide products shall only be allowed if the active biocide component, used to counter slime-forming organisms in water-circulating systems in the printing house is not potentially bio-accumulative.

² Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.

In this context, a biocide is considered to be potentially bio-accumulative if the $\log P_{ow}$ (log octanol/water partition coefficient) ≥ 3.0 (unless the experimentally determined BCF ≤ 100).

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion together with the relevant Safety Data Sheet or a test report, which shall include the test method, threshold and conclusion stated. The reference test methods are the OECD 107, 117 or 305 A-E.

2.3 Washing agents

Washing agents used for cleaning in printing processes and/or sub-processes that contain aromatic hydrocarbon shall only be allowed if they are in compliance with criteria 2.1.a and 2.1.b and if:

a) The content of aromatic hydrocarbons in the used washing agent products does not exceed 0.1 % (w/w).

or

b) the annually used amount of the aromatic hydrocarbon-based washing agent does not exceed 2% of the total amount of washing agent used in one calendar year.

This criterion shall not apply to toluene used as washing agent in rotogravure printing.

Assessment and verification: The applicant shall provide the Safety Data Sheet for each washing agent used during the year to which the annual consumption refers. The washing agent suppliers shall provide declarations of the aromatic hydrocarbon contents in the washing agents.

2.4 Alkyl phenol ethoxylates - Halogenated solvents – Phthalates

The following substances or preparations shall not be added to inks, glues, or washing agents or other cleaning chemicals:

- Alkyl phenol ethoxylates and their derivatives that may produce alkyl phenols by degradation.
- Halogenated solvents that at the time of application are classified with risk phrases R26/27, R45, R48/20/22, R51/53, R52/53 and R59 in accordance with Directives 67/548/EEC, 1999/45/EC and their amendments.
- Phthalates that at the time of application are classified with risk phrases R60, R61, R62 in accordance with Directive 67/548/EEC and its amendments.

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion.

3. RECYCLABILITY

Eco-labelled products shall be recyclable and de-inkable.

- a) Wet strength agents and adhesives may be used only if the recyclability of the finished product comprising one or both of them can be proved.
- b) Coating varnishes and lamination, including polythene and/or polythene/polypropylene, may be used only for covers of books and catalogues, exercise books, binders and folders.

Assessment and verification: The applicant shall provide the test result of recyclability of the product containing wet strength agent, adhesive. The de-inkability of UV-curing inks or varnishes, where used, shall be proved. The reference test methods are PTS method PTS-RH 021/97 (wet strength agents) INGEDE Method 12 (adhesives), Assessing the Recyclability of Printed Products - Testing of Fragmentation Behaviour of Adhesive Applications and INGEDE method 11 (UV inks and varnishes) or equivalent test methods.

The test on UV curing inks and varnishes shall be carried out for both coated and uncoated paper substrate.

The applicant shall provide a declaration that coated and laminated printed paper products are in compliance with the requirement 3.b.

CRITERIA THAT APPLY TO THE ENTIRE PRODUCTION ON SITE

4. EMISSIONS

4.1 Emissions to water

- a) Rinsing water containing silver from film processing, as well as from plate production, and photo-chemicals shall not be discharged to a sewage treatment plant.

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion, together with a description of the management of photo-chemicals and silver containing rinsing water on site. If the film processing and/or the plate production is outsourced, the sub-contractor shall provide a declaration of compliance with this criterion, together with a description of the management of photo-chemicals and silver containing rinsing water at the subcontractors.

- b) Emission to water of chromium (Cr) and copper (Cu) in rotogravure printing.
 - i) the amount of Cr discharged into a sewage treatment plant must not exceed 45 mg per m² of printing cylinder surface area used in the press.
 - ii) the amount of Cu discharged into a sewage treatment plant must not exceed 400 mg per m² of printing cylinder surface area used in the press.

Assessment and verification: Discharges of Cr and Cu into the sewage shall be checked at rotogravure printing plants after treatment and before their release.

A representative sample of Cr and Cu discharges shall be collected each month. At least one annual analytical test shall be carried out by an accredited laboratory to determine the content of Cr and Cu in a representative sub-sample of these samples. The compliance with the

criterion shall be assessed dividing the content of Cr and Cu, as determined by the annual analytical test, by the cylinder surface used in the press during the printing.

The cylinder surface used in the press during printing is calculated by multiplying the cylinder surface ($= 2\pi rL$, where r is the radius and L the length of the cylinder) by the number of printing productions during a year (= number of different printing jobs).

4.2 Emissions to air

a) Printing processes for which no legislative measures apply to emissions to air:

Volatile solvents from the drying process of heat-set offset, flexography, and rotogravure printing shall be managed by means of recovery or combustion or any equivalent system. In all cases, for which no legislative measures apply, the emissions of VOC to air must not exceed 20 mg C/Nm³.

Assessment and verification: The applicant shall provide a description of the system in place together with documentation and test results related to the control and the monitoring of emissions to air.

b) Rotogravure printing

Equipment for reduction of emission to air of Cr⁶⁺ shall be installed. Emissions of Cr⁶⁺ to air must not exceed 15 mg/tonne paper.

Assessment and verification: The applicant shall provide a description of the system in place, together with a documentation related to the control and the monitoring of Cr⁶⁺ emissions. The documentation shall include the test results related to the reduction of Cr⁶⁺ emissions to the air.

5. WASTE MANAGEMENT

The facility where printed-paper products are produced shall have in place a system for handling waste, including residual products derived from the production of the eco-labelled printed-paper products, as defined by local and national relevant regulatory authorities.

The system shall be documented or explained and shall include information on at least the following procedures:

- handling, collection, separation and use of recyclable materials from the waste stream,
- recovery of materials for other uses, such as incineration for raising process steam or heating, or agricultural use,
- handling, collection, separation and disposal of hazardous waste, as defined by the relevant local and national regulatory authorities.

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion, together with a description of the waste management system in place. Where

appropriate the applicant shall provide the corresponding declaration to the local authority every year.

SECTION B

CRITERIA

REFERRED TO IN ARTICLE 2, THIRD PARAGRAPH

6. ENVIRONMENTAL MANAGEMENT SYSTEM (4 POINTS)

4 points shall be attributed to printed paper products produced by printing houses that are EMAS registered or ISO 14001: 2004 certified.

Assessment and verification: The applicant shall provide a declaration reporting the registration number of EMAS registration or ISO 14001:2004 certification, where relevant.

7. SUBSTRATE (4-10 POINTS)

A number of points up to a total of 10 shall be attributed to printed paper products that fulfil the criteria 1.a and 1.b and fall under one or more of the following cases:

- a) 10 points if the printing paper used in the product is awarded the EU Eco-label, according to Commission Decision 2002/741/EC establishing ecological criteria for the award of the Community Eco-label to copying and graphic paper.
- b) 6 points if the printing paper used in the product is awarded an eco-label based on ISO standard 14024:1999 for type 1 environmental labels.
- c) 4 points if the printing paper used in the product is made of more than 50 % recycled fibres.
- d) 4 points if the printing paper used in the product is made of virgin fibres from sustainably managed forest, of which at least 50% comes from sustainably managed forest that are certified by independent third party forest certification schemes fulfilling the criteria listed in paragraph 15 of the Council Resolution of 15 December 1998 on a Forestry Strategy for the EU and further development thereof.
- e) 4 points if the printing paper is produced at a paper mill that is EMAS registered or ISO 14001:2004 certified.

The number of points may be weighted proportionally if the amount of paper in some of the cases above in the printed paper products is lower than 100%.

Assessment and verification: The applicant shall provide the name of the ecolabelling system and a declaration reporting the registration number of the eco-labelled printing paper, EMAS or ISO 14001:2004 certificate, where relevant. Appropriate documentation shall be provided to show the compliance with the requirements 7.c and 7.d for papers that are not awarded of

any eco-label based on ISO standard 14024:1999 for type I environmental labels that include the same or stricter requirements as set in criteria 7.c and 7.d.

CRITERIA THAT APPLY TO THE ENTIRE PRODUCTION ON SITE

8. EMISSIONS TO AIR

8.1 VOC (1-30 points)

VOC (Volatile Organic Compounds) under this Decision are defined as those whose Vapour pressure > 0.01 kPa at 293.15 K, or with an equivalent volatility in particular uses (e.g. the solvents in heat-set inks when heated in drying) according to Council Directive 1999/13/EC³.

Points ranging from 1 to 30 shall be attributed in proportion to the annual level of VOC contained in the chemical products purchased and used for printing processes. The calculation is made according to the equation (1).

$$A = 30 - 4.28 \times b \quad \text{Equation (1)}$$

Where:

A = number of points [when $b > 6.78$ kg/tonne, A will be less than 1 and therefore no points can be attributed.]

$$b = (P_{\text{VOC}} - R_{\text{VOC}}) / P_{\text{paper}} \quad [\text{kg/tonnes}]$$

P_{VOC} = annual total kilos of VOC contained in the purchased chemical products used for the annual total production of printed products

R_{VOC} = annual total kilos of VOC recovered from printing processes and sold, or reused

P_{paper} = annual total tonnes of paper purchased and used for the production of printed products.

The P_{VOC} term is calculated from SDS information related to VOC content or from an equivalent declaration provided by the supplier of chemical products.

The R_{VOC} term is calculated from the declaration on the content of VOC contained in the chemical products sold or from the internal counting register (or any other equivalent document) reporting the annual amount of VOC recovered and reused on site.

- i) For **heat-set offset printing** with an after-burner unit in place for the drying unit, where the temperature level is controlled by an automatic system connected to the printing process and the printing process is stopped in case of incorrect temperature in the after-burner:

³ Council Directive 1999/13/EC of 11 March 1999, on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations.

$P_{VOC} = (90\% \text{ of the annual total kilos of VOC contained in damping solutions used for the annual production of printed products} + 85\% \text{ of the annual total kilos of VOC contained in washing agents used for the annual production of printed products}).$

- ii) For **heat-set offset printing**, with an after-burner unit in place for the drying unit, where the temperature level is **not** controlled by an automatic system connected to the printing process:

$P_{VOC} = (90\% \text{ of the annual total kilos of VOC contained in damping solutions used for the annual production of printed products} + 85\% \text{ of the annual total kilos of VOC contained in washing agents used for the annual production of printed products} + 10\% \text{ of annual total kilos of VOC contained in the printing inks used for the annual production of printed products}).$

For i and ii, proportionately lower percentages than 90% and 85% may be used in this calculation if more than 10% or 15% of annual total kilos of VOC contained in the damping solutions or washing agents respectively used for the annual production of printed products can be shown to be abated in the treatment system for combusting gases from the drying process.

Assessment and verification: A declaration of the VOC content in alcohols, washing agents, inks, damping solutions or other corresponding chemical products shall be provided by the chemical supplier. The applicant shall provide evidence of the calculation for the parameter 'b' according to the criteria laid down above. The period for the calculations shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the calculations shall be based on at least 3 months of representative running of the plant.

8.2 Emissions from a closed recovery system (2 points)

2 points shall be attributed to the printed paper product if the percentage of toluene recovered, in the rotogravure printing processes, by means of a closed/encapsulated installation/recovery system, or any equivalent, is at least 95%.

Assessment and verification: The applicant shall provide appropriate documentation on the recovery efficiency of the closed/encapsulated installation/recovery system, or any equivalent, that has been put in place to deal with the use of toluene in rotogravure printing processes according to this criterion.

8.3 Emissions from publication rotogravure printing (2 points)

2 points shall be attributed to the printed paper product produced by publication rotogravure printing if emissions of VOC to air are not above 50 mg C/Nm³

Assessment and verification: The applicant shall provide appropriate documentation showing compliance with this criterion.

9. PAPER WASTE (1 – 10 POINTS)

- a) 'Paper waste' is defined under this Decision as the amount of paper spillage collected and sent to recovery on annual basis.

Points ranging from 1 to 10 shall be attributed to the printed paper product according to the different annual amounts of paper waste from the production produced on site.

The number of points is calculated according to the equation (2).

$$Y = 10 - (0.25 \times X) \quad \text{Equation. (2)}$$

Where:

Y = number of points [when X > 36, Y will be less than 1 and therefore no points can be attributed]

X = annual tonnes of paper waste produced on site, divided by annual tonnes of paper purchased and used for the production of printed products.

- b) If the printing house carries out finishing operations on behalf of another printing house, the paper waste produced in these operations shall not be included in the calculation of 'X'.
- c) If the finishing operations are outsourced to another company then the amount of paper waste resulting from the outsourced work must be calculated and declared in the calculation of 'X'.

Assessment and verification: The applicant shall provide a description of the calculation of the paper waste, together with a declaration from the contractor collecting the paper waste from the printing house. For compliance with criteria 9.b and 9.c the outsourcing terms and calculations on the amount of paper waste involved in the finishing operations shall be provided. The period for the calculations shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the calculations shall be based on at least 3 months of representative running of the plant.

10. PREPRESS (3 – 5 POINTS)

Points ranging from 3 to 5 shall be attributed to the printed paper product if one or more of the following technologies are used for the image transfer to the press:

| Technology | Points |
|-------------------------------------------------|--------|
| Computer to press (without use of film or form) | 5 |
| Computer to printing form (without use of film) | 3 |

If the printing form production is partially outsourced and several technologies for the prepress are used, the technology with the lowest point will determine the number of points that is awarded the printed paper product.

Assessment and verification: The applicant shall provide a description of the technology used. Information about the technology used by subcontractors for the production of the eco-labelled printed paper product shall be provided, where relevant.

11. USE OF CHROMIUM FOR THE MANUFACTURE OF PRINTING FORMS FOR ROTOGRAVURE PRINTING (1 POINT)

1 point shall be attributed for the purchase of dissolved chromium trioxide in liquid form for the manufacture of printing forms for rotogravure printing.

Assessment and verification: A declaration or Safety Data Sheet, containing the relevant information to show compliance with this criterion shall be provided by the applicant.

12. EMISSIONS OF CHROMIUM (CR) AND COPPER (CU) TO WATER IN ROTOGRAVURE PRINTING (1-2 POINTS)

- a) 1 point shall be attributed to the printed paper product if the amount of Cr discharged into a sewage treatment plant is less than 20 mg per m² of printing cylinder surface area used in the press.
- b) 1 point shall be attributed to the printed paper product if the amount of Cu discharged into a sewage treatment plant is less than 200 mg Cu per m² of printing cylinder surface area used in the press.

Assessment and verification: The amount of Cr and Cu discharged into a sewage treatment plant shall be checked at rotogravure printing plants after treatment and before their release into the sewage.

A representative sample of Cr and Cu discharges shall be collected each month. At least one annual analytical test shall be carried out by an accredited laboratory to determine the content of Cr and Cu in a representative sub-sample of these samples. The compliance with the criterion shall be assessed dividing the content of Cr and Cu, as determined by the annual analytical test, by the cylinder surface used in the press during the printing.

The cylinder surface used in the press during printing is calculated by multiplying the cylinder surface ($= 2\pi rL$, where r is the radius and L the length of the cylinder) by the number of printing productions during a year (= number of different printing jobs).

13. ENERGY USE

13.1 Use of renewable electricity (1-5 points)

A number of points are attributed for the use of renewable electricity according to the table 3.

Table 3

| % of the purchased electricity is renewable* | Points |
|----------------------------------------------|--------|
| 100 | 5 |
| 50-99 | 4 |
| 30-49 | 3 |
| 10-29 | 2 |
| 0.1-9 | 1 |

*) Renewable electricity is defined as in Directive 2001/77/EC

Assessment and verification: The applicant shall provide a copy of the delivery agreement with the electricity supplier. Specification of the fuel used for the generation of the electricity together with information about the purchased amounts of the renewable electricity shall be provided if available.

13.2 System for recovery of energy (2 point)

2 points are attributed to the presence on site of a plant for heat energy recovery, such as a combined heat and power plant.

Assessment and verification: The applicant shall provide a description of the energy recovery system.

SECTION C CONSUMER INFORMATION

14. FITNESS FOR USE

The product must be suitable for its purpose.

Assessment and verification: The applicant shall provide appropriate documentation in compliance with this criterion. National or commercial standards, where relevant, may be used by the applicant to prove the fitness for use of eco-labelled products.

15. INFORMATION APPEARING ON THE ECO-LABEL

Box 2 of the eco-label shall contain the following text:

- This product is recyclable
- It is printed using environmentally friendly paper
- Emissions of chemicals to air and water have been limited
- And so have greenhouse gases

Appendix 1

Criteria and assessment and verification requirements for paper and paperboard substrate, as defined in criterion 1 of the section A of the Annex

1. FIBRES

Fibres may be wood fibres, or recycled fibres from recovered paper, or other cellulose fibres. Fibres from paper mill broke shall not be considered as recycled fibres.

At least 10% of virgin wood fibres from forests shall originate from sustainably managed forests which are certified by independent third party forest certification schemes fulfilling the criteria listed in paragraph 15 of the Council Resolution of 15 December 1998 on a Forestry Strategy for the EU and further development thereof.

The remaining virgin wood fibres from forests shall come from forests that are managed so as to implement the principles and measures aimed at ensuring sustainable forest management.

The precise origin of all virgin fibres used shall be indicated.

In Europe, the principles and measures referred to above shall at least correspond to those of the Pan-European Operational Level Guidelines for Sustainable Forest Management, as endorsed by the Lisbon Ministerial Conference on the Protection of Forests in Europe (2-4 June 1998). Outside Europe they shall at least correspond to the UNCED Forest Principles (Rio de Janeiro, June 1992) and, where applicable, to the criteria or guidelines for sustainable forest management as adopted under the respective international and regional initiatives (ITTO, Montreal Process, Tarapoto Process, UNEP/FAO Dry-Zone Africa Initiative).

Assessment and verification: The applicant shall provide appropriate documentation from the paper supplier indicating the types, quantities and precise origins of fibres used in the pulp and the paper production. Where virgin fibres from forests are used, the applicant shall provide appropriate certificate(s) from the paper supplier showing that the certification scheme correctly fulfils the requirements as laid down in paragraph 15 of the Council Resolution of 15 December 1998 on a Forestry Strategy for the EU. For those virgin wood fibres from forests that are not certified as being from sustainable managed forests, the applicant shall provide the appropriate declarations from the paper supplier, charter, code of conduct or statement, verifying that the above requirements are met.

2. EMISSIONS TO WATER AND AIR

(a) COD, Sulphur (S), NO_x

For each of these parameters, the emissions to air and/or water from the pulp and the paper production shall be expressed in terms of points (P_{COD} , P_{S} , P_{NO_x}) as detailed below.

None of the individual points P_{COD} , P_{S} , or P_{NO_x} shall exceed 1.5.

The total number of points ($P_{\text{total}} = P_{\text{COD}} + P_{\text{S}} + P_{\text{NO}_x}$) shall not exceed 3.0.

The calculation of P_{COD} shall be made as follows (the calculations of P_{S} and P_{NOx} shall be made in exactly the same manner).

Calculation for pulp production: For each pulp i used, the related COD emissions ($\text{COD}_{\text{pulp},i}$ expressed in kg/air dried tonne —ADT), shall be divided by the reference value for that pulp type ($\text{COD}_{\text{reference,pulp}}$) given in the table below for to give the number of points for the pulp production. The real COD emissions shall be weighted according to the proportion of each pulp used (p_i with respect to moist paper), and summed together. The COD reference value shall be calculated in the same manner as the sum of the weighted reference values for each pulp used. ($P_{\text{COD,pulp}}$). Thus:

$$P_{\text{COD,pulp}} = \frac{\sum(p_i \times \text{COD}_{\text{pulp},i})}{\sum(p_i \times \text{COD}_{\text{reference,pulp}})}$$

Calculation for paper production: The number of points for the paper production ($P_{\text{COD,paper}}$) shall be calculated by dividing the related COD emissions ($\text{COD}_{\text{paper}}$) by the reference value for paper ($\text{COD}_{\text{reference,paper}}$) given in the table below. Thus:

$$P_{\text{COD,paper}} = \text{COD}_{\text{paper}} / \text{COD}_{\text{reference,paper}}$$

Finally, the points for pulp and paper production shall be combined to give the overall number of points (P_{COD}) as follows:

$$P_{\text{COD}} = \frac{(P_{\text{COD,pulp}} \times \text{COD}_{\text{weighted reference,pulp}})}{(\text{COD}_{\text{weighted reference,pulp}} + \text{COD}_{\text{reference,paper}})} + \frac{(P_{\text{COD,paper}} \times \text{COD}_{\text{reference,paper}})}{(\text{COD}_{\text{weighted reference,pulp}} + \text{COD}_{\text{reference,paper}})}$$

Table of reference values for emissions from different pulp types and from paper production

| Pulp Grade/Paper | Emissions (kg/ADT) | | |
|------------------------------------------------------------------------------|--------------------|-------------|----------------|
| | COD reference | S reference | NOx, reference |
| Chemical pulp (kraft and all others except sulphite) | 18.0 | 0.6 | 1.6 |
| Chemical pulp (sulphite) | 27.0 | 0.6 | 1.6 |
| CTMP | 15.0 | 0.3 | 0.3 |
| TMP/groundwood pulp | 4.0 | 0.3 | 0.3 |
| Recycled fibre pulp | 4.0 | 0.3 | 0.3 |
| Paper (non-integrated mills where all pulps used are purchased market pulps) | 2.0 | 0.3 | 0.8 |
| Paper (other mills) | 2.0 | 0.3 | 0.7 |

Assessment and verification: The applicant shall provide appropriate documentation from the paper supplier showing detailed calculations showing compliance with this criterion, together with related supporting documentation, which shall include test reports using the following test methods:

COD:ISO 6060;

NO_x:ISO 11564; S(oxid.): EPA no.8; S(red.): EPA no 16A;

S content in oil: ISO 8754:1995;

S content in coal: ISO 351.

The supporting documentation shall include an indication of the measurement frequency and the calculation of the points for COD, S and NO_x. It shall include all emissions of S and NO_x, which occur during the production of pulp, and paper, including steam generated outside the production site, except those emissions related to the production of electricity. Measurements shall include recovery boilers, limekilns, steam boilers and destructor furnaces for strong smelling gases. Diffuse emissions shall be taken into account. Reported emission values for S to air shall include both oxidised and reduced S emissions (dimethyl sulphide, methyl mercaptan, hydrogen sulphide and the like). The S emissions related to the heat energy generation from oil, coal and other external fuels with known S content may be calculated instead of measured, and shall be taken into account.

Measurements of emissions to water shall be taken on unfiltered and unsettled samples either after treatment at the plant or after treatment by a public treatment plant. The period for the measurements shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the measurements shall be based on at least 45 subsequent days of stable running of the plant. The measurement shall be representative for the respective campaign.

(b) **AOX**

The AOX emissions from the production of each pulp used shall not exceed 0,25 kg/ADT.

Assessment and verification: The applicant shall provide appropriate documentation from the paper supplier of test reports using the following test method: AOX ISO 9562 (1989). The supporting documentation shall include an indication of the measurement frequency. AOX shall only be measured in processes where chlorine compounds are used for the bleaching of the pulp. AOX need not be measured in the effluent from non-integrated paper production or in the effluents from pulp production without bleaching or where the bleaching is performed with chlorine-free substances.

Measurements shall be taken on unfiltered and unsettled samples either after treatment at the plant or after treatment by a public treatment plant. The period for the measurements shall be based on the production during 12 months. In case of a new or a re-built production plant, the measurements shall be based on at least 45 subsequent days of stable running of the plant. The measurement shall be representative for the respective campaign.

(c) **CO₂**

The emissions of carbon dioxide from non-renewable sources shall not exceed 1150 kg per tonne of paper produced, including emissions from the production of electricity (whether on-site or off-site). For non-integrated mills (where all pulps used are purchased market pulps) the emissions shall not exceed 1250 kg per tonne. The emissions shall be calculated as the sum of the emissions from the pulp and paper production.

Assessment and verification: The applicant shall provide appropriate documentation from the paper supplier of detailed calculations showing compliance with this criterion, together with related supporting documentation.

The applicant shall provide data on the air emissions of carbon dioxide. This shall include all sources of non-renewable fuels during the production of pulp and paper, including the emissions from the production of electricity (whether on-site or off-site).

The following emission factors shall be used in the calculation of the CO² emissions from fuels:

| Fuel | CO2 emission | Unit |
|------------------|--------------|------------------|
| Coal | 95 | g CO2 fossil/MJ |
| Crude oil | 73 | g CO2 fossil/MJ |
| Fuel oil 1 | 74 | g CO2 fossil/MJ |
| Fuel oil 2-5 | 77 | g CO2 fossil/MJ |
| LPG | 69 | g CO2 fossil/MJ |
| Natural gas | 56 | g CO2 fossil/MJ |
| Grid electricity | 400 | g CO2 fossil/kWh |

For grid electricity, the value quoted in the table above (the European average) shall be used unless the applicant presents documentation establishing the average value for their supplier(s) of electricity, in which case the applicant may use this value instead of the value quoted in the table.

The period for the calculations or mass balances shall be based on the production during 12 months. In case of a new or a rebuilt production plant, the calculations shall be based on at least 45 subsequent days of stable running of the plant. The calculations shall be representative for the respective campaign.

3. HAZARDOUS CHEMICAL SUBSTANCES

Assessment and verification: The applicant shall supply a list of the chemical products used in the pulp and paper production, together with appropriate documentation (such as SDSs). This list shall include the quantity, function and suppliers of all process chemicals used.

(a) **Chlorine**

Chlorine gas shall not be used as a bleaching agent. This requirement does not apply to chlorine gas related to the production and use of chlorine dioxide.

Assessment and verification: The applicant shall provide a declaration from the pulp producer(s) that chlorine gas has not been used as a bleaching agent. Note: while this requirement also applies to the bleaching of recycled fibres, it is accepted that the fibres in their previous life cycle may have been bleached with chlorine gas.

(b) **APEOs**

Alkylphenol ethoxylates or other alkylphenol derivatives shall not be added to cleaning chemicals, de-inking chemicals, foam inhibitors, dispersants or coatings. Alkylphenol derivatives are defined as substances that upon degradation produce alkyl phenols.

Assessment and verification: The applicant shall provide appropriate documentation from the paper supplier consisting of a declaration(s) from their chemical supplier(s) that alkylphenol ethoxylates or other alkylphenol derivatives have not been added to these products.

(c) **Surfactants in de-inking formulations for return fibres**

Where surfactants are used in quantities of at least 100 g/ADT (summed over all the surfactants used in all the different formulations used in de-inking return fibres), each surfactant shall be readily biodegradable. Where such surfactants are used in quantities of less than 100 g/ADT, each surfactant shall be either readily biodegradable or ultimately biodegradable (see test methods and pass levels below).

Assessment and verification: The applicant shall provide appropriate documentation from the paper supplier consisting of a declaration of compliance with this criterion together with the relevant safety data sheets or test reports for each surfactant which shall indicate the test method, threshold and conclusion stated, using one of the following test methods and pass levels: for ready biodegradability OECD 301 A-F (or equivalent ISO standards), with a percentage degradation within 28 days of at least 70 % for 301 A and E, and of at least 60 % for 301 B, C, D and F; for ultimate biodegradability OECD 302 A-C (or equivalent ISO standards), with a percentage degradation (including adsorption) within 28 days of at least 70 % for 302 A and B, and of at least 60 % for 302 C.

(d) **Biocides**

The active components in biocides or biostatic agents used to counter slime-forming organisms in circulation water systems containing fibres shall not be potentially bio-accumulative.

Assessment and verification: The applicant shall provide appropriate documentation from the paper supplier consisting of a declaration of compliance with this criterion together with the relevant safety data sheet or test report which shall indicate the test method, threshold and conclusion stated, using the following test methods: OECD 107, 117 or 305 A-E.

Note: Applicants using paper that has been awarded the EU eco-label for 'copying and graphic paper', or paper that has been awarded any other eco-label based on ISO standard 14024:1999 for type I environmental labels, may fulfil any of the individual criterion above if the

requirements of that scheme are as stringent as, or more stringent than, the individual criterion laid down in this appendix. If this is the case then the applicant need only provide a declaration reporting the registration number of the eco-labelled printing paper, together with evidence that that individual criterion of the awarded label is as stringent or more stringent than those above and that this has been assessed and verified under the environmental label of reference.