

## Joint Research Centre (JRC)

### Development of the EU Ecolabel criteria for Imaging Equipment General overview



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## Proposed Ecolabel criteria – general overview

### I. Definition and Scope

### II. Criteria

Criteria are proposed for the following areas:

1. Paper Management
2. Energy efficiency
3. Indoor air emissions
4. Noise
5. Substances and mixtures in imaging equipment
6. Reuse, recycling and end-of-life management
7. Ink and toner consumables
8. Corporate criteria
9. Social criteria



## Proposed Ecolabel criteria – general overview

### I. Definition and Scope

The product group “imaging equipment” shall comprise **products which are used in the office (private or professional)** and their **function** is:

- i) to **produce a printed image** (paper document or photo) through a marking process either from a digital image (provided by a network/card interface) or from a hardcopy through a scanning/copying process or/and
- ii) to **produce a digital image** from a hard copy through a scanning/copying process.

This decision applies to products which are marketed as **printers, copiers and multifunctional devices (MFD)**. Other type of imaging equipment devices i.e. fax machines, digital duplicators, mailing machines, scanners are excluded from the scope of this decision.

**Large products which are not typically used in household and office equipment** with the following technical specifications:

- Standard BW format products with **maximum speed over 66 A4 images per minute**
- Standard Colour format products with **maximum speed over 51 A4 images per minute**

Speed to be rounded to the nearest integer as prescribed in the ENERGY STAR agreement.

are also **excluded from the scope** of this decision

## Proposed Ecolabel criteria – general overview

### I. Definition and Scope

A "**printer**" is a commercially available imaging product that serves as a hard copy output device, and is capable of receiving information from single-user or networked computers, or other input devices (e.g. digital cameras). The unit must be capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as printers, including printers that can be upgraded into MFDs in the field.

A "**copier**" is a commercially available imaging product which sole function is the production of hard copy duplicates from graphic hard copy originals. The unit must be capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as copiers or upgradeable digital copiers.

A "**multifunction device (MFD)**" is a commercially available imaging product which is a physically integrated device or a combination of functionally integrated components that performs two or more of the core functions of copying, printing, scanning, or faxing. The copy functionality, as addressed in this definition, is considered to be distinct from single sheet convenience copying offered by fax machines. The unit must be capable of being powered from a wall outlet or from a data or network connection. This definition is intended to cover products that are marketed as MFDs or multifunction products (MFPs).

## Proposed Ecolabel criteria – general overview

### II. Criteria Proposal

#### Criteria related to paper management

- **Criterion 1 – Availability of N-up printing**
- **Criterion 2 - Duplex printing requirement**
- **Criterion 3 - Use of recycled paper**

#### Criteria related to energy efficiency

- **Criterion 4 - Energy efficiency**

#### Criteria related to Indoor air emissions

- **Criterion 5 - Restriction of TVOC, benzene, styrene, ozone and dust indoor emissions**

#### Criteria related to noise emissions

- **Criterion 6 – Noise emissions**

## Criteria related to Substances and mixtures in imaging equipment

- **Criterion 7 - Hazardous substances and mixtures**
- **Criterion 8 - Substances listed in accordance with article 59(1) of Regulation (EC) No 1907/2006**
- **Criterion 9 - Plastic parts**
  - a. plasticiser in the manufacturing process
  - b. Tetrabromobisphenol-A (TBBPA) in the plastic production processes
  - c. chlorine content of plastic part
  - d. biocidal products
  - e. brominated aromatic substances used as flame retardants
- **Criterion 10 - Mercury in fluorescent lamps**

## Criteria related to Reuse, recycling and end-of-life management

- **Criterion 11 - Design for disassembly**
- **Criterion 12 – Recycled and reused content**

## Criteria related to Ink and toner consumables

- **Criterion 13 - Design for recycling and/or reuse of toner and/or ink cartridges**
- **Criterion 14 - Toner and/or ink cartridge take-back requirement**
- **Criterion 15 - Substances in ink and toners**
  - a. mercury, cadmium, lead, nickel or chromium-VI-compounds
  - b. Azo colorants
  - c. biocides in inks

## Generic Criteria

- **Criterion 16 - Requirements on packaging**
- **Criterion 17 – Warranty, guarantee of repairs and supply of spare parts**
- **Criterion 18 - User Information**
  - a. Environmental relevance of paper consumption
  - b. Printouts produced after cancelation
  - c. Noise
  - d. Resource efficiency
  - e. Ink and toner cartridges
- **Criterion 19 - Information appearing on the Ecolabel**
- **Criterion 20 - Social accountability**

**Thank you for the attention**



## **Development of the EU Ecolabel criteria for Imaging Equipment**

### **Criteria related to Paper management**

### **Criteria related to paper management**

- **Criterion 1 - Availability of N-up printing**
- **Criterion 2 - Duplex printing requirement**
- **Criterion 3 - Use of recycled paper**

#### **General Rationale for Criteria related to paper management**

The most significant aspect affecting the overall life cycle environmental performance of the product group of imaging equipment is the consumption of paper.



## Criterion 1 – Availability of N-up printing

### Proposed criterion

Imaging equipment devices shall offer as a standard feature the capability to print and/or copy several pages of a document on one sheet of paper when the product is managed by original software provided by the manufacturer (printer driver).

### Assessment and verification

The applicant shall provide to the awarding competent body a declaration of compliance with these requirements

### Rationale

N-up printing availability allows the user to save paper thus avoid unnecessary environmental impacts.

Industry Voluntary Agreement (self-regulation option of Ecodesign Directive) includes this requirement.

## Criterion 2 - Duplex printing requirement

### Proposed criterion

Imaging equipment devices with a maximum operating speed for monochrome printing/copying of **25 ipm** (images per minute) or more for A4 size paper shall be equipped with an automatic double-side print/copy unit (a duplex-unit).

The duplex printing and/or copying function shall be set as default in the original software provided by the manufacturer and the following information (warning) shall be displayed to the user product when the default setting is changed into one-side printing: "This mode of printing will contribute to higher environmental impacts than double- side printing".

### Assessment and verification

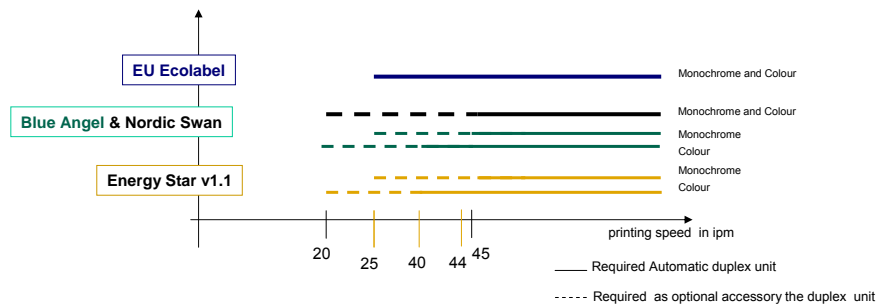
A certificate signed by the manufacturer declaring compliance with these requirements shall be submitted to the awarding competent body.

## Criterion 2 - Duplex printing requirement

### Rationale & discussion point

Duplex printing allows the user to save paper thus avoid unnecessary environmental impacts. A criterion on duplex requirements was agreed in 1<sup>st</sup> AHWG.

Discussion point the threshold of **25 ipm** which is input of stakeholders



## Criterion 3 - Use of recycled paper

### Proposed criterion

Imaging equipment devices must be capable of processing recycled paper made of 100% post-consumer paper that meets the requirements of EN 12281:2002. The applicant shall be free to recommend certain types of recycled paper.

### Assessment and verification

The applicant shall provide to the awarding competent body a declaration of compliance with these requirements.

### Rationale

Ecolabel scheme shall facilitate recycling. Eco-labelled products shall allow the use of consumables with recycled content so far this is technical feasible  
Agreed as criterion in 1<sup>st</sup> AHWG. Common criterion with Member State Labels



## Development of the EU Ecolabel criteria for Imaging Equipment

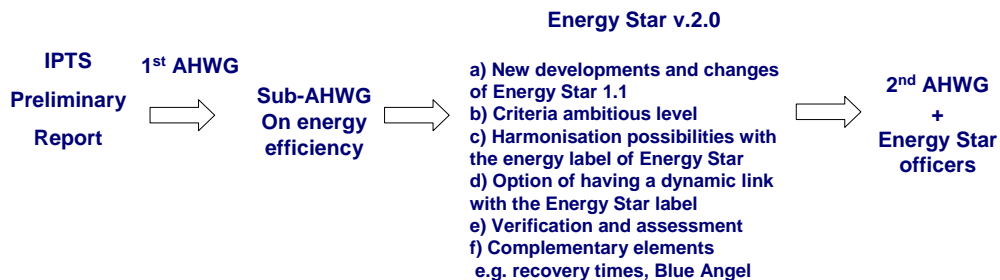
### Criteria related to Energy Efficiency Criterion 4 - Energy efficiency

## Criteria related to Energy efficiency

### Rationale

After paper consumption, the next most important aspect regarding the life cycle environmental performance of imaging equipment is energy consumption in the use phase.

### Sub-AHWG on energy efficiency



## Criterion 4 – Energy efficiency

### Proposed criterion

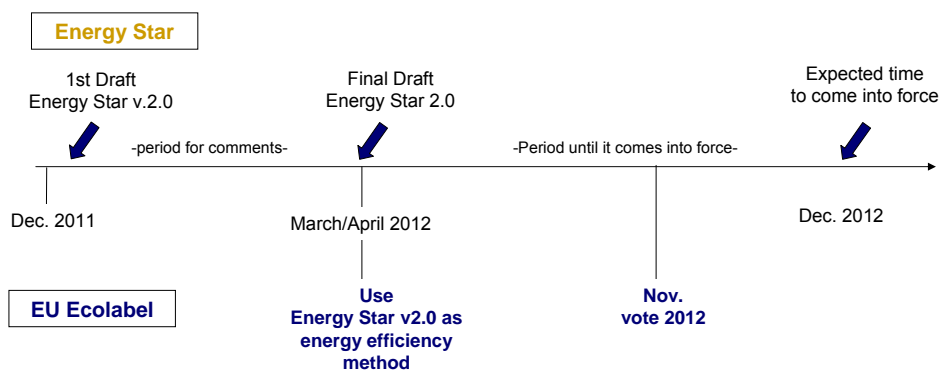
The energy consumption of the product shall fulfil the energy requirements of Energy Star v.2.0 criteria for imaging equipment. If a newer version of Energy Star v2.0 for imaging equipment is published, then the product shall comply with the energy efficiency requirements of this version.

### Assessment and verification

The applicant shall provide to the awarding competent body a declaration of compliance with the requirements as set in Energy Star v2.0 or if applicable of the latest published version of Energy Star requirements for imaging equipment and a test report with the results of the energy efficiency test according to the methods specified in Energy Star. Energy Star v.2.0 (or if applicable of a newer published version) labelled products are deemed to comply with the requirements of this criterion and the applicant shall submit a copy of the energy label award.

## EU Ecolabel and Energy Star time plan

The energy sub-AHWG proposes to use Energy Star v.2.0  
Timely the revision of Energy Star label for imaging equipment is in parallel with the development of EU Ecolabel



### 1. Discussion point. Dynamic link with the Energy Star label

The dynamic link with the Energy Star label can ensure that the Eco-labelled products are among the most energy efficient products in case the next Energy Star revision takes place earlier than the EU Ecolabel criteria revision.

### 2. Discussion point: Assessment and verification

Alternative option – 3<sup>rd</sup> party Verification is required:

The applicant shall provide to the awarding competent body a declaration of compliance with the requirements as set in Energy Star v2.0 or if applicable of the next version of Energy Star requirements for imaging equipment and a test report from an accredited laboratory containing the results of the energy efficiency test according to the methods specified in Energy Star version 2.0 or if applicable of the next version of Energy Star requirements for imaging equipment. The applicant shall attach a copy of the valid accreditation certificate of the test laboratory. Energy Star v.2.0 (or if applicable of a newer published version) labelled products for which the energy consumption has been measured by an Energy Star certification body are deemed to comply with the requirements of this criterion and the applicant shall submit a copy of the energy label award.

### Differences between the two alternative assessment and verification options

1. **Current proposal:** 3<sup>rd</sup> party verification is NOT necessary  
all EU Energy Star labeled products are deemed to comply
  
2. **Alternative option:** 3<sup>rd</sup> party verification is necessary
  - a) Energy efficiency is very important Key Environmental Area → many stakeholders propose 3<sup>rd</sup> party verification
  
  - b) Energy Star will require for US market from now on always a 3<sup>rd</sup> party verification
  
  - c) 3<sup>rd</sup> party verified Energy Star labeled products are deemed to comply

### 3. Discussion point - Complementary requirements

#### 3.1. Requirements based on Implementing measures proposal for the Ecodesign study Lot 26. Network standby-losses

#### 3.2. Recovery time limits among different phases of power safe modes

#### 3.3. Accessories shall not influence negative the function of power safe modes

#### 3.1. Requirements based on proposal for Implementing measures for the Ecodesign study Lot 26. Network standby-losses

##### Proposal for implementing measures for Lot 26.

(a) As of 1 January 2014

- the power consumption of the networked product with low network availability in the modes with networked standby which the product is switched into by the power management function shall not exceed 4,00 W
- the power consumption of the networked product with high network availability in the modes with networked standby which the product is switched into by the power management function shall not exceed 12,00 W.

(b) As of 1 January 2016

- the power consumption of the networked product with low network availability in the modes with networked standby which the product is switched into by the power management function shall not exceed 2,00 W
- the power consumption of the networked product with high network availability in the modes with networked standby which the product is switched into by the power management function shall not exceed 8,00 W.

### 3.1. Requirements based on Implementing measures proposal for the Ecodesign study Lot 26. Network standby-losses which apply to imaging equipment devices

Rational: The Ecolabel products are frontrunners, shall represent the best 10-20 %  
Can comply with the proposed requirements before these become mandatory  
Moreover, Ecolabel and Ecodesign as product policy tools work in a high consistent way

#### Manufacturers Input\*

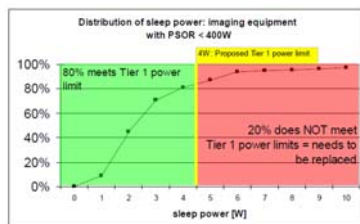


Figure 2: Distributions of sleep power with PSOR < 400W

Mainly private consumer products of low, medium performance (J and EP)

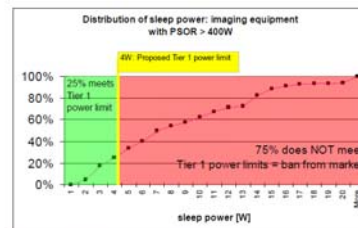


Figure 3: Distributions of sleep power with PSOR > 400W

Mainly products used in a working environment of high performance

\*Reference: Digital Europe, position paper 18 Oct. 2011. Both figures refer to low network availability. PSOR: Power supply output rating

### 3.2. Recovery time limits between different phases of power safe modes

Rational: if a product comes quick from an energy saving mode to the operational mode then the user is prevented from setting off the save mode function

- a). Ecodesign Lot 27 Network standby losses (no values for Ecodesign)
- b). Blue Angel Energy efficiency criteria for imaging equipment

Requirements on recovery time among different phases of power safe modes  
Measurement via Energy Star methodology shall be feasible.  
Moreover, manufacturer association (DE) proposed for Ecodesign a maximum power management delay time of 30 min.

### 3.3. Accessories shall not influence negative the function of power safe modes Requirement of Blue Angel criteria for imaging equipment

Question to stakeholders: Set additional requirements based on proposal of Ecodesign Lot 26 and include recovery time limits?

## Development of the EU Ecolabel criteria for Imaging Equipment

### Criteria related to Indoor air emissions

#### Criterion 5 - Restriction of TVOC, benzene, styrene, ozone and dust indoor emissions

### Criterion 5 - Restriction of TVOC, benzene, styrene, ozone and dust indoor emissions

#### Proposed criterion

In the use phase the product shall not emit the below listed pollutants in amounts higher than the maximum emission rates given below:

Substance	Emission rate Print phase (mg/h)		Emission rate Ready phase (mg/h).	
	Colour Printing Total in ready + print phase	Monochrome printing Total in ready + print phase	Desktop products	Floor-mounted equipment (Volume >250 litres)
TVOC	18	10	1	2
Benzene	<0.05	<0.05		
Styrene	1.8	1.0		
Ozone*	3.0	1.5		
Dust*	4.0	4.0		
Phenol	1.8	1.0		
Non identifiable VOC	1.8	1.0		
CMR-substances**	<0.05	<0.05		

\*only for EP-printing

\*\*CMR-substances as Classified in EC 1272/2008 CLP-Regulation

All the above emission rates must be measured in accordance with the requirements described in ECMA-328 5th edition (based on Annex C9. Model for RAL-UZ 122 Option) or Blue Angel: RAL-UZ 122 Version June 2006

#### **Assessment and verification**

The applicant shall submit to the competent body the results of the emission test according to the methods specified in ECMA-328 5th edition or RAL-UZ 122 version June 2006.

#### **Rationale**

Agreed as key environmental area in 1<sup>st</sup> AHWG meeting

Manufacturer propose to use the measurement of the pollutants based on the ECMA-328 standard

Thresholds are the ones proposed in the respective Criterion of Blue Angel and Nordic Swan. Propose to uptake the latest version of Blue Angel

#### **1. Discussion point regarding UFP emissions**

Issue proposed to be included in the commission statement for investigation in the next criteria revision process

## **Development of the EU Ecolabel criteria for Imaging Equipment**

### **Criteria related to Noise emissions Criterion 6 – Noise emissions**

## Criterion 6 – Noise emissions

### Proposed criterion

The noise emission is rated by the declared A-weighted sound power level depending on printing speed per minute given in dB with one decimal place accuracy (or in B with two decimal places accuracy).

The declared A-weighted sound power level  $L_{WAd}$  of the product shall not exceed the following limits:

- a). For monochrome printing – the A-weighted sound power level limit value  $L_{WAd,lim,bw}$  shall be determined depending on the operating speed  $S_{bw}$  given with one decimal place accuracy according to the following formula:

$$L_{WAd,lim,bw} = 37 + 20 \cdot \log(S_{bw} + 8) \text{ dB}$$

$L_{WAd,lim,bw}$  = A-weighted sound power level limit for monochrome printouts given in dB

## Criterion 6 – Noise emissions (continue)

### Proposed criterion (continue)

- b). For colour printing on parallel systems – the A-weighted sound power level limit value  $L_{WAd,lim,co}$  shall be determined depending on the operating speed  $S_{co}$  given with one decimal place accuracy according to the following formula:

$$L_{WAd,lim,co} = 38 + 20 \cdot \log(S_{co} + 8) \text{ dB}$$

$L_{WAd,lim,co}$  = A-weighted sound power level limit in dB for colour printouts

- c). In addition, for both monochrome and colour printing – the A-weighted sound power level limit value  $L_{WAd,lim,bw}$  and  $L_{WAd,lim,co}$  shall not exceed an upper limit of 75.0 dB:

$$L_{WAd,lim,bw} < 75.0 \text{ dB}$$

$$L_{WAd,lim,co} < 75.0 \text{ dB}$$

For serial electrophotographic colour devices with  $S_{co} \leq 0,5 S_{bw}$  the sound power level shall be determined and indicated. For assessment purposes compliance with  $L_{WAd,lim,bw}$  for monochrome printouts with printing speed  $S_{bw}$  shall be considered exclusively.



## Criterion 6 – Noise emissions

### Assessment and verification

The applicant shall demonstrate compliance with the criteria requirements and submit a report containing the results of the A-weighted sound power according to the methods specified in ISO 7779 3rd edition (2010) (corresponds to ECMA-74:2010) as described in the noise measurement method section of the criteria background report. The measured values shall be filled in and confirmed by the testing laboratory on the basis of the test report. The testing laboratory must be accredited according to **DIN** EN ISO/IEC 17025 as well as according to ISO 7779 for acoustic measurements. The test laboratory shall attach a copy of the valid accreditation certificates.

## Criterion 6 – Noise emissions

### Rationale

The specification of the thresholds are based on the new logarithmic modelling formula. The derivation of these formulae are based on a joint analysis of IPTS and German Federal Environmental Agency.

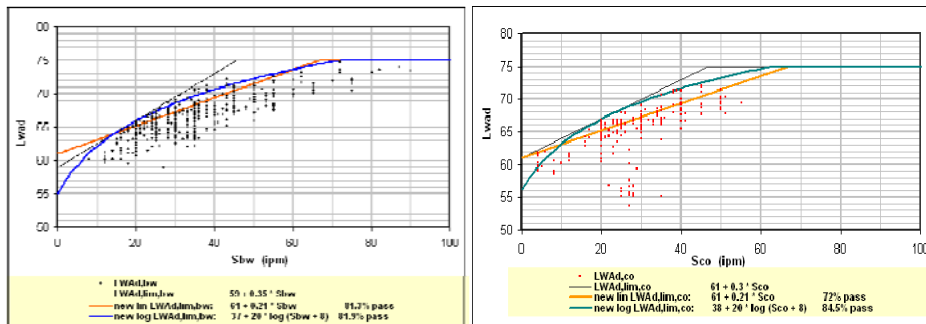


Figure. A-weighted sound power level LWAd of imaging equipment in relation to the operating speed Sbw for a) monochrome printing and b) colour printing. Data basis Eco-labelled products of Blue Angel

## Development of the EU Ecolabel criteria for Imaging Equipment

### Criteria related to Substances and mixtures in imaging equipment

### Criteria related to substances and mixtures in imaging equipment

- **Criterion 7 - Hazardous substances and mixtures**
- **Criterion 8 - Substances listed in accordance with article 59(1) of Regulation (EC) No 1907/2006**
- **Criterion 9 - Plastic Parts**
- **Criterion 10- Mercury in fluorescent lamps**

#### General Rationale for Criteria related to substances and mixtures in imaging equipment

Significant environmental impacts along the imaging equipment life cycle and risks to human health can be avoided when the use of specific substances and mixtures is restricted

## Criterion 7 – Hazardous substances and mixtures

### Proposed criterion

In accordance with Article 6(6) of Regulation (EC) No 66/2010, the product or any article of it shall not contain substances referred to in Article 57 of Regulation (EC) No 1907/2006 nor substances or mixtures meeting the criteria for classification in the following hazard classes or categories in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council (1).

#### List of hazard statements and risk phrases:

Hazard statement <sup>(1)</sup>	Risk Phrase <sup>(2)</sup>
H300 Fatal if swallowed	R28
H301 Toxic if swallowed	R25
H304 May be fatal if swallowed and enters airways	R65
H310 Fatal in contact with skin	R27
H311 Toxic in contact with skin	R24
H330 Fatal if inhaled	R23/26
H331 Toxic if inhaled	R23
H340 May cause genetic defects	R46
H341 Suspected of causing genetic defects	R68
H350 May cause cancer	R45

<sup>(1)</sup> As provided for in Regulation (EC) No 1272/2008.

<sup>(2)</sup>As provided for in Council Directive 67/548/EEC (OJ 196, 16.8.1967, p. 1).

## Criterion 7 – Hazardous substances and mixtures (continue)

Hazard statement <sup>(1)</sup>	Risk Phrase <sup>(2)</sup>
H350i May cause cancer by inhalation	R49
H351 Suspected of causing cancer	R40
H360F May damage fertility	R60
H360D May damage the unborn child	R61
H360FD May damage fertility. May damage the unborn child	R60/61/60-61
H360Fd May damage fertility. Suspected of damaging the unborn child	R60/63
H360Df May damage the unborn child. Suspected of damaging fertility	R61/62
H361F Suspected of damaging fertility	R62
H361d Suspected of damaging the unborn child	R63
H361fd May damage fertility. May damage the unborn child	R62-63
H362 May cause harm to breast fed children	R64
H370 Causes damage to organs	R39/23/24/25/26 /27/28
H371 May cause damage to organs	R68/20/21/22
H372 Causes damage to organs	R48/25/24/23
H373 May cause damage to organs	R48/20/21/22
H400 Very toxic to aquatic life	R50/50-53

#### List of hazard statements and risk phrases (Continue)

Hazard statement <sup>(1)</sup>	Risk Phrase <sup>(2)</sup>
H410 Very toxic to aquatic life with long-lasting effects	R50-53
H411 Toxic to aquatic life with long-lasting effects	R51-53
H412 Harmful to aquatic life with long-lasting effects	R52-53
H413 May cause long-lasting effects to aquatic life	R53
EUH059 Hazardous to the ozone layer	R59
EUH029 Contact with water liberates toxic gas	R29
EUH031 Contact with acids liberates toxic gas	R31
EUH032 Contact with acids liberates very toxic gas	R32
EUH070 Toxic by eye contact	R39-41

<sup>(1)</sup> As provided for in Regulation (EC) No 1272/2008.

<sup>(2)</sup>As provided for in Council Directive 67/548/EEC (OJ 196, 16.8.1967, p. 1).

### Criterion 7 – Hazardous substances and mixtures (continue)

The use of substances or mixtures in the final product which upon processing change their properties in a way that the identified hazard no longer applies is exempted from the above requirement.

Concentration limits for substances or mixtures meeting the criterion for classification in the hazard classes or categories listed in the table above, and for substances meeting the criterion of Article 57 (a), (b) or (c) of Regulation (EC) No 1907/2006, shall not exceed the generic or specific concentration limits determined in accordance with the Article 10 of Regulation (EC) No1272/2008. Where specific concentration limits are determined, they shall prevail against the generic ones.

Concentration limits for substances meeting criteria of Article 57 (d), (e) or (f) of Regulation (EC) No 1907/2006 shall not exceed 0.1 % weight by weight.

### Criterion 7 – Hazardous substances and mixtures (continue)

The following substances/uses of substances are specifically derogated from this requirement:

Articles with weight below 10 g	All hazard statements and risk phrases
Homogeneous parts of complex articles with weight below 10 g	All hazard statements and risk phrases
Inks and toners and cartridges	All hazard statements and risk phrases
Ni in stainless steel of all types other than of high-sulphur grades (S > 0.1%)	
2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol CAS 3147-75-9	
Triphenylphosphine CAS 603-35-0	

## Criterion 7 – Hazardous substances and mixtures (continue)

### Assessment and verification

For each article and/or homogeneous part of complex articles with weight over 10 g the applicant shall provide a declaration of compliance with this criterion, together with related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures. Concentration limits shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006 for substances and mixtures.

## Criterion 8 – Substances listed in accordance with article 59(1) of Regulation (EC) No 1907/2006

### Proposed criterion

No derogation from the exclusion in Article 6(6) shall be given concerning substances identified as substances of very high concern and included in the list foreseen in Article 59 of Regulation (EC) No 1907/2006, present in mixtures, in an article or in any homogenous part of a complex article in concentrations higher than 0.1% w/w. Specific concentration limits determined in accordance with Article 10 of Regulation (EC) No1272/2008 shall apply in case it is lower than 0.1% w/w.

### Assessment and Verification

The list of substances identified as substances of very high concern and included in the candidate list in accordance with Article 59 of Regulation (EC) No 1907/2006 can be found here:

[http://echa.europa.eu/chem\\_data/authorisation\\_process/candidate\\_list\\_table\\_en.asp](http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp)  
Reference to the list shall be made on the date of application.

## Criterion 8 – Substances listed in accordance with article 59(1) of Regulation (EC) No 1907/2006

### Assessment and verification (continue)

The applicant shall provide a declaration of compliance with this criterion, together with related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets in accordance with Annex II to Regulation (EC) No 1907/2006 for substances or mixtures. Concentration limits shall be specified in the Safety Data Sheets in accordance with Article 31 of Regulation (EC) No 1907/2006 for substances and mixtures.

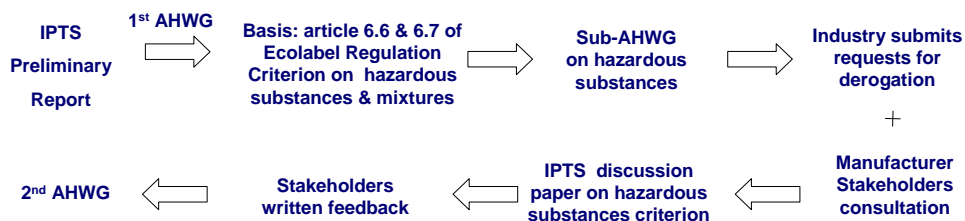
## Criterion 7– Hazardous substances and mixtures

### Criterion is based on:

Implications of article 6.6 and 6.7 of Ecolabel Regulation 66/2010 regarding the use of hazardous substances and mixtures in ecolabelled products.

DG ENV criterion for hazardous substances as applied in EU Ecolabel for computers and laptops.

### Development of hazardous substances criterion and consultation



## Criterion 7– Hazardous substances and mixtures

### 1. Discussion point - Derogation Request

Industry stakeholders requested the following substances\* to be exempted:

1. 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol ●
2. (1-methylethylidene)di-4.1-phenylenetetraphenyl diphosphate (BDP) ●
3. Triphenylphosphine ●
4. Nickel in Stainless Steel ● -limited

### Evaluation of derogation requests based on following elements of information

- General physical and chemical properties, functionality, overall mass and concentration
- Health and direct environmental impacts
- Life cycle considerations & indirect environmental impacts related to the use of the substance
- Potential substitutes

\*A horizontal request for derogation (for antimony trioxide-ATO) was submitted to DG ENV in a later phase for the Imaging Equipment criteria development. This request was not investigated. The use of ATO is associated to Brominated flame retardant s which are restricted in Criterion 9e.

## Criterion 7– Hazardous substances and mixtures

### 2. Discussion point – operability of criterion

Further, due to criterion operability reasons the following articles are exempted:

1. Inks and toners, and cartridges
2. Articles with weight below 10 g
3. Homogeneous parts of complex articles with weight below 10 g

In general it is suggested that the criteria shall:

- a) be feasible for both the applicant and the competent bodies with regard to compliance verification procedure and have manageable administrative effort, and
- b) have a high ambition level and allow to identify the environmental frontrunners by promoting products of manufacturers who do not use substances associated with health risks and environmental concerns.

**Questions and points for discussion:****A). Threshold values for articles:**

The threshold of 10 g is given for articles and/or homogeneous parts of complex article;  
Stakeholders asked for 25 g. **Point of discussion- article weight threshold.**

**B). Investigate if further derogations for articles are necessary**

Is an exemption of specific articles necessary to improve the operability of Criterion 7? How may this influence the potential of health risks? **Point of discussion-manufacturer request for derogation of specific articles**

**3. Discussion point –assessment and verification**

Self-declaration by the applicant to prove the compliance with these criteria

**Guidelines on verifying which are the classified substances**

**Guidelines on verifying which are the classified substances**

Substances classified with H- and R- phrases can be identified in the following databases

**Current situation****1. Quick check in European chemical Substances Information System (ESIS)**

<http://esis.jrc.ec.europa.eu/>

**2. Check Annex VI of CLP Regulation\* on the following points:**

2.1. Annex VI Table 3.1

2.2. Annex VI Table 3.2

2.3. First adaptation to technical progress

2.4. Second adaptation to technical progress

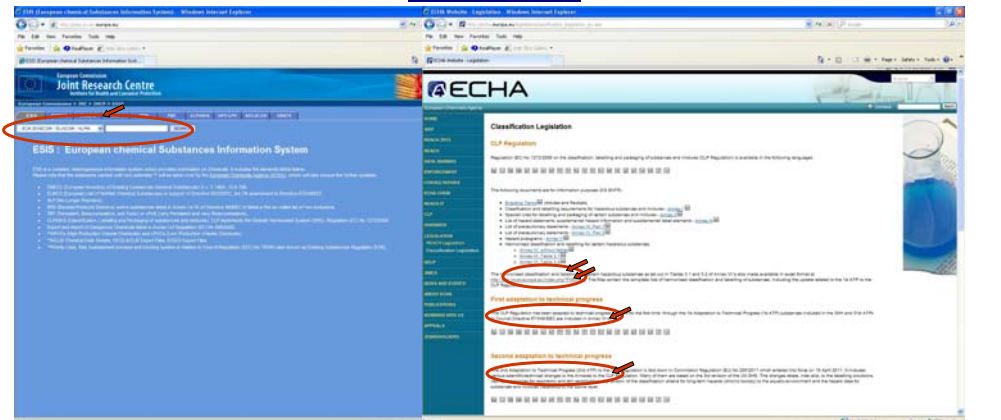
[http://echa.europa.eu/legislation/classification\\_legislation\\_en.asp](http://echa.europa.eu/legislation/classification_legislation_en.asp)

\*Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures



**Guidelines on verifying which are the classified substances**

Current situation



<http://esis.jrc.ec.europa.eu/>      [http://echa.europa.eu/legislation/classification\\_legislation\\_en.asp](http://echa.europa.eu/legislation/classification_legislation_en.asp)

European Chemicals Agency's project: Classification & Labelling Inventory database  
public version of the Inventory is expected to be available in 2011

**Guidelines on verifying which are the classified substances**

Improve current situation

**Questions and points for discussion:**

- Request industry stakeholders to submit proposals**
- Proposal for a common manual for industry and competent bodies**

**Thank you for the attention**

## Criterion 9 – Plastic Parts

### Proposed criterion

a. If any plasticiser substance in the manufacturing process is applied, it must comply with the requirements on hazardous substances set out in Criterion 7 and Criterion 8.

Additionally, the following **substances**: di-n-octyl phthalate (DNOP), diisononyl phthalate (DINP), di-isodecyl phthalate (DIDP), Dibutyl phthalate (DBP), di(ethylhexyl) phthalate (DEHP), benzyl butyl phthalate (BBP), short chain chlorinated paraffins (SCCP), diisobutyl phthalate (DIBP) shall not intentionally be added to the product.

b. Tetrabromobisphenol-A (TBBPA) shall not intentionally be used in the production process of the plastic parts.

## Criterion 9 – Plastic Parts (continue)

### Proposed criterion

- c. Plastic parts of articles or homogeneous parts of complex articles with weight 25 g or more shall not contain a chlorine content greater than 50 % by weight.
- d. Only biocidal products containing biocidal active substances included in Annex IA to Directive 98/8/EC of the European Parliament and of the Council and authorised for use in imaging equipment, shall be allowed for use. All biocides used shall be clearly indicated.
- e. The product shall not contain brominated aromatic substances used as flame retardants. This restriction is not applicable for product articles of weight lower than 25 g and for homogeneous parts of complex articles of weight lower than 25 g with the following exceptions:
- chlorine and bromine-based polymers,
  - plastic parts which contain PBBs (polybrominated biphenyls), PBDEs (polybrominated diphenyl ethers) or chlorinated paraffins.

## Criterion 9 – Plastic Parts (continue)

### Assessment and verification

The applicant shall provide a declaration of compliance with this criterion, together with related documentation, such as declarations of compliance signed by the suppliers of substances and copies of relevant Safety Data Sheets. The applicant shall provide information on the plasticisers used in the product. The applicant shall provide information on the maximum chlorine content of the plastic parts. A declaration of compliance signed by the plastic and biocides suppliers and copies of relevant safety data sheets about materials and substances shall also be provided to the awarding competent body. The applicant shall provide information on the intentionally added substances used as flame retardants.

## Criterion 10 – Mercury in fluorescent lamps

### Proposed criterion

Mercury or its compounds shall not intentionally be added to the backlights used in imaging equipment.

### Assessment and verification

The applicant shall declare to the competent body that the backlights of the product do not contain more than 0.1 mg of mercury or its compounds per lamp. The applicant shall also provide a brief description of the lighting system used.

### General Rationale for Criterion 9 and Criterion 10

**Significant environmental impacts along the imaging equipment life cycle can be avoided when the use of specific substances is restricted.**

- the use of substances classified with H- and R- phrases is not sustainable and shall be avoided when safer alternatives are available
- the proposed substances in Criterion 9a are classified as substances of very high concern (SVHC) or are in the candidate list for SVHC
- in Ecolabelled products the use of biocide substances is suggested to comply to strict requirements
- Brominated aromatic substances used as flame retardants and high chlorine content in ecolabelled products is considered as a less sustainable solution especially regarding the product post consumption phase (recycling, incineration, disposal). Alternatives are considered to be available.
- The use of mercury shall be avoided where possible due to its high environmental concerns

#### Discussion point

- 1.Consistency with criterion 7 regarding the article weight threshold. Which threshold shall be used 10 g or of 25 g in Criterion 9?
- 2.Criterion 9e exception of application to plastic parts of fuser units?



**Thank you for the attention**



## Development of the EU Ecolabel criteria for Imaging Equipment

### Criteria related to Reuse, recycling and end-of-life management

Criterion 11 - Design for disassembly

Criterion 12 – Recycled and reused content

General rational. Ecolabelled products shall be resource efficient (as addressed in article 6.3 Ecolabel Regulation 66/2010). This key environmental area is addressed in all the Ecolabeling schemes and agreed in 1<sup>st</sup> AHWG



### Criterion 11 - Design for disassembly

#### Proposed criterion

The manufacturer shall demonstrate that the imaging device can be easily dismantled by professionally trained personnel using the tools usually available to them, for the purpose of repairs and replacements of worn-out parts, upgrading older or obsolete parts, and separating parts and materials, ultimately for recycling or reuse. The applicant shall complete the "checklist for recyclable design" which is given in Annex 6.7 of the criteria background report.

#### Assessment and verification

A test report shall be submitted with the application detailing the dismantling of the imaging equipment device. It shall include an exploded diagram of the product, labelling the main components as well as identifying any hazardous substances in components. It can be in written or in digital format. Information regarding hazardous substances shall be provided to the competent body. The applicant shall comply with all the mandatory parts listed in the "checklist for recyclable design". The applicant shall name the casing plastics used for parts over 25 grams and submit a list of plastics attached to the application in the form of a list of materials identifying material type, quantity used and location.

## **Criterion 12 – Recycled and reused content**

### **Proposed criterion**

The external plastic casing parts shall have in total a post-consumer recycled and reused content of not less than 10 % by mass.

The total post-consumer recycled content and the reused content of the external plastic parts shall be declared in the user information

### **Assessment and verification**

The applicant shall provide the competent body with a declaration stating the percentage of post-consumer recycled content and/or reused content of the plastic parts of casing. The applicant shall provide a sample of the user information to the awarding competent body.

### **Discussion points**

1. Criterion 11: complementary points for the checklist of recyclable design?
2. Criterion 12: Is the proposed threshold value of 10 % sufficient?

# **Development of the EU Ecolabel criteria for Imaging Equipment**

## **Criteria related to Ink and toner consumables**

## Criteria related to ink and toner consumables

- **Criterion 13 - Design for recycling and/or reuse of toner and/or ink cartridges**
- **Criterion 14 - Toner and/or ink cartridge take-back requirement**
- **Criterion 15 - Substances in ink and toners**

### General Rationale for Criteria to ink and toner consumables

Ink and toners, and their cartridges have been identified as a key environmental area for criteria development in EU Ecolabel



## Criterion 13 - Design for recycling and/or reuse of toner and/or ink cartridges

### Proposed criterion

The products must accept remanufactured toner and/or ink cartridges.

The applicant shall ensure that any cartridge produced or recommended by the manufacturer (OEM) for use in the product is designed for reuse. The applicant shall provide to the user information how many reuse circles are recommended (a minimum of one is required) and ensure that the performance of a reused cartridge, can reach printing and/or copying performance level equivalent to a new one.

The design of the cartridge should also promote material recycling.

This requirement is not applicable for imaging equipment applying the solid ink technology

## Criterion 13 - Design for recycling and/or reuse of toner and/or ink cartridges

### Assessment and verification

The applicant shall declare compliance with the requirements. The applicant shall provide to the competent body a copy of the user information. If requested by the competent body the applicant shall submit instructions on how the cartridge shall be remanufactured and/or refilled. The competent body may ask the applicant to provide a proof (i.e. one sample) that cartridges can be remanufactured or refilled following the provided instructions.

## Criterion 13 - Design for recycling and/or reuse of toner and/or ink cartridges

### 1. Discussion point – printing quality of reused cartridge

Change the following part of the text: “can reach printing and/or copying performance level equivalent to a new one ”

**A. Simplify. Replace the text with:**

“can ensure that the cartridge is suitable for reuse”

**B. Rephrase using as references the following standards:**

1. DIN 33870:2001-01. Covers toner cartridges for monochrome printing
  2. DIN 33871-1:2003-10. Covers ink cartridges for monochrome and colour printing
- replace text as follows::

“(…) and ensure that the performance of a reused cartridge, **reaches the printing quality standards as described in DIN 33870:2001-01 and DIN 33871-1:2003-10...**”

### 2. Discussion point – assessment and verification

- a. change the term “submit instructions” with “give a description”



### **Criterion 13 - Design for recycling and/or reuse of toner and/or ink cartridges**

#### **3. Discussion point – minimum performance of cartridges**

Imaging equipment can be classified based on their intended use in low, medium and high performance.

Similarly, cartridges can be classified based on the number of printouts in low, medium and high performance cartridges

**Rational:** The use of medium and high performance cartridges is resource efficient.

**Proposal to set for medium and high performance imaging equipment a minimum requirement which ensures availability of high performance cartridges**

**Stakeholders are asked for feedback**

### **Criterion 14 - Toner and/or ink cartridge take-back requirement**

#### **Proposed criterion**

The applicant shall ensure the return of toner/ink modules and toner/ink containers supplied or recommended by the applicant for use in the product back to the applicant, and channel such modules and containers to reuse or material recycling with preference given to reuse. This also applies to residual toner containers.

Third parties (dealers and service agencies or companies engaged in the module recycling business) may be subcontracted to perform this task. The formers shall be provided with instructions for proper handling of residual toner. Non-recyclable product parts shall be properly disposed. Modules and containers shall be taken back free of charge by the return facility named by the applicant to which products may be returned personally or by shipment.

The product documents shall include detailed information on the return system.

## Criterion 14 - Toner and/or ink cartridge take-back requirement

### Assessment and verification

The applicant shall declare compliance with the requirements and document instructions for the recycling contractor for dealing with residual toner (e.g. by means of the EC Material Safety Data Sheet) and by means of the note: "Prevent toner dust from being released into the air." A declaration that the toner/ink modules and toner/ink containers are channelled for reuse and/or recycling signed by the subcontracted third parties (dealers and service agencies or companies engaged in the module recycling business) shall also be provided to the awarding competent body.

## Criterion 15 - Substances in ink and toners

### Proposed criterion

- a) No substances may be added to toners and inks supplied or recommended by applicant for use in the product which contain mercury, cadmium, lead, nickel or chromium-VI-compounds as constituents. Exempted are high molecular weight complex nickel compounds as colorants. Production-related contamination by heavy metals, such as cobalt and nickel oxides shall be kept as low as technically possible and economically reasonable.
  
- b) Azo colorants that might release carcinogenic aromatic amines appearing on the list of aromatic amines according to Regulation (EC) No 1907/2006 annex XVII, shall not be used in toners and inks supplied or recommended by the applicant for use in the product.

## Criterion 15 - Substances in ink and toners

### Proposed criterion (continue)

- c) Only those substances which are listed as so-called existing substances in Annex II to Commission Regulation EC 2032/2003 amended by Regulation EC1048/200512 may be added as active biocides to inks supplied or recommended by the applicant for use in the product.

### Assessment and verification

The applicant shall declare compliance with the requirements. A declaration of compliance signed by the ink and toner supplier(s) and copies of relevant Safety Data Sheets about materials and substances shall also be provided to the awarding competent body.

## Development of the EU Ecolabel criteria for Imaging Equipment

### Corporate and social criteria

## Corporate criteria

- **Criterion 16 - Requirements on packaging**
- **Criterion 17 - Warranty, guarantee of repairs and supply of spare parts**
- **Criterion 18 - User Information**
- **Criterion 19 - Information appearing on the Ecolabel**

## Social criteria

- **Criterion 20 - Social accountability**



## Criterion 16 - Requirements on packaging

### Proposed criterion

Where cardboard boxes are used for the final packaging, they shall be made of at least 80 % recycled material. Where plastic bags are used for the final packaging, they shall be made of at least 75 % of recycled material or they shall be biodegradable or compostable, in agreement with the definitions provided by the EN 13432 or equivalent.

### Assessment and verification

A sample of the product packaging shall be provided, together with a corresponding declaration of compliance with this criterion. Only primary packaging, as defined in European Parliament and Council Directive 94/62/EC ( 2 ), is subject to the criterion.

## **Criterion 17 - Warranty, guarantee of repairs and supply of spare parts**

### **Proposed criterion**

The applicant shall ensure guarantee for repair or replacement of minimum five years. The applicant shall ensure that a supply of spare parts and necessary infrastructure for equipment repair is available for a period of at least 5 years after the end of production and that users are informed about the guaranteed availability of spare parts.

### **Assessment and verification**

The applicant shall declare to the competent body the guarantee of repairs and supply of spare parts and provide samples of the product information sheet and warranty terms to the awarding competent body.

## **Criterion 18 – User information**

### **Proposed criterion**

The applicant shall inform the user as follows:

- a) **Environmental relevance of paper consumption**  
"The main environmental impacts of this product along its life cycle are related to the consumption of paper. The less paper is used the lower the overall life cycle environmental impacts. It is recommended to apply double side printing and to print multiple pages in one paper sheet."
- b) **Printouts produced after cancellation**  
The applicant shall declare the maximum number of pages which are printed or copied after the user has cancelled the printing or copying process. The measurement shall be conducted using the measurement procedure described in Annex 6.1 **of the criteria background report**

## Criterion 18 – User information

### Proposed criterion (continue)

The applicant shall inform the user as follows:

- d) Resource efficiency  
"This product is resource efficient. Plastic content of casing parts is comprised of x% reused plastic and/or y% recycled post-consumer plastic".  
Where x is the declared reused plastic content and y is the declared post consumer recycled plastic content.
- e) Ink and toner cartridges  
"The cartridges of this equipment are designed to be reused. It is recommended to reuse the cartridge at least x times."  
where x is the recommended number of reuse circles, as specified in criterion 13.

## Criterion 18 – User Information

### Assessment and verification

A certificate signed by the manufacturer declaring compliance with these requirements and evidence of the required user information shall be provided by the applicant to the competent body. The applicant shall declare the percentages of the post consumer recycled and/or reused content of the casing plastic parts. Printouts produced after cancelation shall be measured following the calculation method proposed in Annex 6.4 of the criteria technical background report. The applicant shall fill-in table 4 of Annex 6.4 of the criteria technical background report.

## **Criterion 19 – Information appearing on the Ecolabel**

### **Proposed criterion**

Optional label with text box shall contain the following text:

- Designed for efficient paper management
- High energy efficiency
- Minimised use of hazardous substances

### **Assessment and verification**

The applicant shall declare the compliance of the product with this requirement and shall provide a copy of the Ecolabel as it will appear on the packaging and/or product and/or accompanying documentation to the competent body

## **Criterion 20 – Social accountability**

### **Proposed criterion**

Fundamental principles and rights regarding working conditions must be fulfilled during the production of the Ecolabelled imaging equipment device.

The licensee must ensure that the production of the product follows the ILO conventions<sup>1</sup> regarding child labour, forced labour, health and safety, discrimination, discipline, hours of work, wages, freedom of association and collective bargaining.

### **Assessment and verification**

The applicant shall declare compliance with this requirement and provide a specification of contracts with inspection authorities and either a code of conduct regarding ILO conventions or a SA8000 certification.

<sup>1</sup> <http://www.ilo.org/>

**Thank you for the attention**

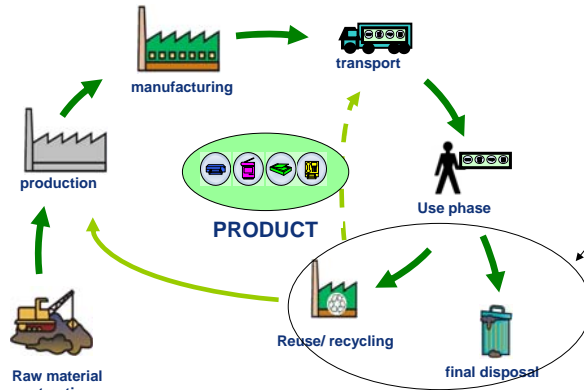


**Complementary slides**





Environmental performance assessment of the product  
Case study: Imaging Equipment devices



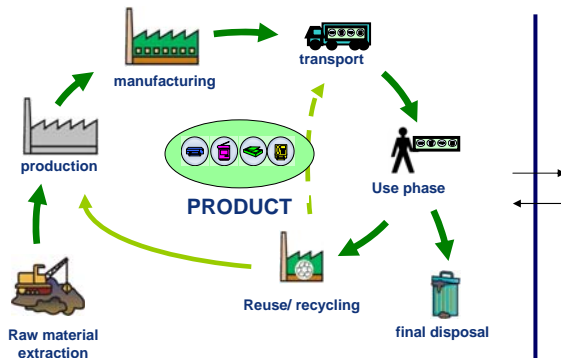
Take into account actual situation. End-of-life phase of the product is often outside EU.

Ecolabel products shall have minimized environmental impacts e.g. avoid use of substances related to formation of dioxins and/or POPs.

1. Life Cycle Assessment – there are no geographical boundaries

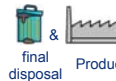
- identify the environmental hot spots in the life cycle
- avoid shifting environmental burdens from one life cycle phase to another

Environmental performance assessment of the product  
Case study: Imaging Equipment devices



Use phase

- indoor emissions
- noise exposure



final disposal & Production

- hazardous substances



Reuse/ recycling

- easy to reuse/recycle

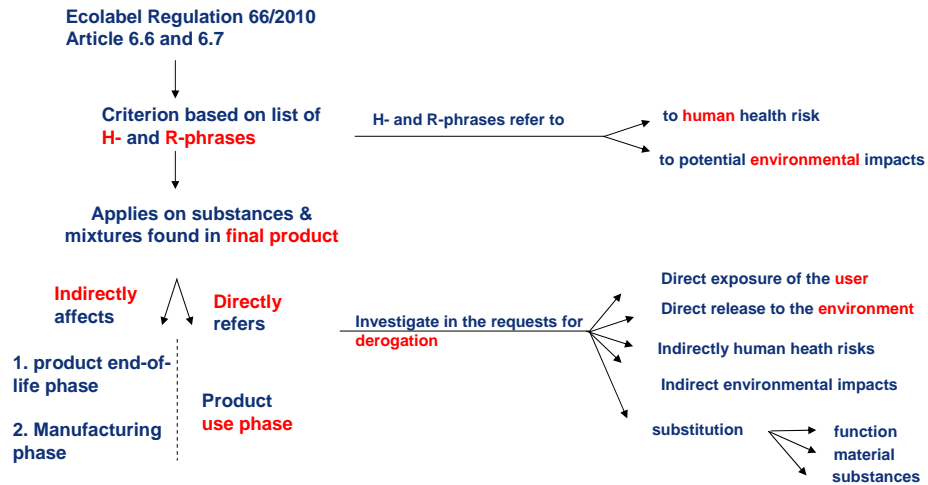
1. Life Cycle Assessment

- identify the environmental hot spots in the life cycle
- avoid shifting environmental burdens from one life cycle phase to another

2. Product oriented environmental performance assessment

- focus on performance per life cycle product phase
- identify additional environmental impacts

Overview of development of criterion 7 on hazardous substances  
Elements used and their consequences



Operability of criterion 7 on hazardous substances & mixtures

