



# Revision of European Ecolabel and GPP Criteria

## Furniture criteria

1<sup>st</sup> Ad-hoc Working Group Meeting  
7 October 2013, Sevilla

Joint Research Centre, Institute for Prospective Technological Studies

In the document with the criteria proposals:

- Current criteria
- Proposals for the revised/new criteria
- Rationale

**Basis for discussion**

This presentation:

- Proposals for the revised/new criteria
- Rationale
- Discussion

## Criteria

Criteria are set for each of the following aspects:

1. Product description
2. Hazardous substances
3. Material requirements (wood/wood-based, plastics, metal, upholstery fabrics, padding materials, glass)
4. Surface treatments
5. Assembly of furniture
6. Final product (durability, safety, maintenance, information)
7. User information – Information appearing on the packaging
8. Energy embodied in materials used

## Criterion 1 – Product description

- A description of the product shall be provided.
- Information shall be provided on the **total weight** of the product, the **materials used** in the product, including fixtures and fittings, and their **respective weight**.

## Exemptions

- **Glass**, even easily replaceable in case of damage or breakage, **shall be included in the weight calculation** as occurs with technical equipment and fittings.
- **Fixtures**, such as screws and nails, and metal hardware for sliding doors and drawers are **exempt from compliance** with all criteria on materials.

## Criterion 2 – Hazardous substances

- a) Hazardous substances and mixtures (hazard statements or risk phrases)
  
- b) Substances listed in accordance with Article 59(1) of Regulation (EC) 1907/2006\*
  
- c) Explicitly excluded substances and mixtures

\* REACH: substances of very high concern (SVHC)<sup>5</sup>

## Criterion 2 – Hazardous substances

According to the Article 6(6) of Regulation (EC) No 66/2010 the EU Ecolabel, the product of any component of it shall **not contain substances meeting the criteria for classification with the hazard statements or risk phrases specified** in table below in accordance with Regulation (EC) No 1272/2008 or Directive 67/548/EC **nor shall contain substances** referred to in Article 57 of Regulation (EC) No 1907/2006\*. The risk phrases in Table below generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures apply.

Substances or mixtures which change their properties through processing and thus become no longer bioavailable, or undergo chemical modification in a way that removes the previously identified hazard are exempted.

\* REACH: carcinogenic, mutagenic, toxic for reproduction,<sup>6</sup> VPvB, endocrine disrupting

Hazard Statement	Risk Phrase
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; R26
H331 Toxic if inhaled	R23
H340 May cause genetic defects	R46
H341 Suspected of causing genetic defects	R68
H350 May cause cancer	R45
H350i May cause cancer by inhalation	R49
H351 Suspected of causing cancer	R40
H360F May damage fertility	R60



Hazard Statement	Risk Phrase
H360D May damage the unborn child	R61
H360FD May damage fertility. May damage the unborn child	R60-61
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 Suspected of damaging fertility. Suspected of damaging the unborn child	R62-63
H362 May cause harm to breast fed children	R64
H370 Causes damage to organs	R39/23; R39/24; R39/25; R39/26; R39/27; R39/28
H371 May cause damage to organs	R68/20; R68/21; R68/22
H372 Causes damage to organs through prolonged or repeated exposure	R48/25; R48/24; R48/23



<b>Hazard Statement</b>	<b>Risk Phrase</b>
H373 May cause damage to organs through prolonged or repeated exposure	R48/20; R48/21; R48/22
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	R42
H317: May cause allergic skin reaction	R43

According to the Article 6(7) of Regulation (EC) No 66/2010 the EU Ecolabel, for specific categories of goods containing substances referred to in paragraph 6, and only in the event that it is **not technically feasible to substitute them as such, or via the use of alternative materials or designs**, or in the case of products which have a significantly **higher overall environment performance** compared with other goods of the same category, the Commission may adopt measures to grant **derogations** from paragraph 6.

b) Substances listed as Substances of Very High Concern (SVHC)

**No derogation** shall be given concerning substances identified as **substances of very high concern** and included in the list provided in Article 59(1) of Regulation (EC) No 1907/2006\*, present in mixtures, in an article or in any homogeneous part of a complex article in concentrations higher than 0.10% w/w.

Derogations for certain substances can be made if accompanied with **supportive scientific and technical information** which could substantiate this decision. Without this evidence, a derogation cannot be made. (template is provided)

## c) Explicitly excluded substances and mixtures

- Azidirine and polyaziridine
- Pigments and additives based on lead, cadmium, chrome (VI), mercury, arsenic, boron, copper, cobalt, organic tin, anthracene, creosote, azo dyes or compounds thereof
- Halogenated organic compounds, including
  - Halogenated organic polymers
  - Halogenated organic binding agents
  - Halogenated organic solvents

- Halogenated flame retardants:
  - Hexabromocyclododecane (HBCDD) and all major diastereoisomers
  - Tris(2-chloroethyl)phosphate (TCEP)
  - Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins -SCCP)
  - Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE).

## Flame retardants

- **Allowed** if chemically bound into the matrix/material or onto the matrix/material surface: **reactive** flame retardants
- **Excluded** if only physically mixed into the matrix/material are excluded: **additive** flame retardants

Will be changed **according to other EU Ecolabels:**

**No differentiation** between reactive or additive flame retardants. (H- and R-phrases apply)

- The following phthalates:
  - Diisobutyl phthalate (DIBP)
  - Dibutyl phthalate (DBP)
  - Benzyl butyl phthalate (BBP)
  - Bis (2-ethylhexyl) phthalate (DEHP)
  - Dipentyl phthalate (DPP)
  - N-pentyl-isopentylphthalate, diisopentylphthalate (DIPP) and bis(2-methoxyethyl)phthalate
  - Diisononyl phthalate (DINP), diisodecyl phthalate (DIDP) and di-n-octyl phthalate (DOP or DnOP).

- 4,4'- Diaminodiphenylmethane (MDA)
- Bisphenol A and compounds thereof
- Pentadecafluorooctanoic acid and its salts (PFOA and APFO)

## Discussion

1. **Azo dyes**: aligned with criteria in bed mattresses and textiles. Are they used in other furniture materials (wood, plastic, metal, leather)?
2. Halogenated organic binding agents: taken from current criteria. Could this group be excluded as a whole or can you identify which **halogenated organic binding agents** are used in furniture production?
3. Halogenated organic solvents: Could this group be excluded as a whole or can you identify which **halogenated organic solvents** are used in furniture production?

Methylene chloride has been identified (Carcinogenic<sub>2</sub>, H351)

## Discussion

4. Halogenated flame retardants: Can you identify which **halogenated flame retardants** are used in furniture production?
5. Phthalates: **DINP, DIDP, DnOP** are high molecular weight phthalates, considered as non-hazardous. However, restricted for toys and childcare articles, other ecolabels and EU Ecolabel products.  
Should they be excluded or not?

## Discussion

6. Bisphenol A and compounds thereof: used in paints, varnishes, glues, production of PU and various plastics. H361f (suspected of damaging fertility), H335, H318, H317.

May be present in plastics made of polycarbonates, but no direct exposure.

a) Should **compounds of bisphenol A** be excluded?

b) What about **bisphenol A leftovers** in polycarbonates?  
Is there a risk to set them free in the environment?

## Biocides

- **Indoor** furniture shall **not be impregnated**.
- For all other furniture, where impregnation or preservatives are used, they shall fulfill the requirements on hazardous substances and mixtures meeting criteria for classification with the **hazard statements or risk phrases** in accordance with CLP Regulation specified in point 2 (a) of this criterion.



- According to the **Biocidal Products Regulation (BPR, Regulation (EU) 528/2012)**, **only** biocidal products containing biocidal active substances approved by the European Commission and authorised by
  - **product type 8, wood preservatives**, shall be allowed for use in wood outdoor furniture.
  - **product type 18 (insecticides, acaricides and products to control other arthropods)** shall be allowed for use in solid wood after logging or virgin wood.

- **No biocides** must be applied to the surface of the final product with the intention to add a **disinfective effect**.
- **Dimethylphumarate, pentachlorophenol** and its salts and esters shall not be present in wood products.
- The mixture (3:1) of **CMIT/MIT** (5 chloro-2-methyl-4-isothiazolin-3-one/ 2-methyl-4-isothiazolin-3-one) in excess of 0.0015% by weight and isothiazolinones in excess of 0.05% by weight shall not be present in any used chemical product including surface treatment.

## Nanomaterials

Assessment of hazards and risks is not straightforward.

Different options:

1. **Allow** nanomaterials and **exclude** those that have scientific evidence for being **hazardous**
2. **Ban** nanomaterials and **allow** those that have scientific evidence for being **not hazardous**

## Discussion

7. Comments/additional information on the **biocides** criteria?
  
8. **Nanomaterials:**
  - a) Identify clearly which are used
  
  - b) Which are supported by sound scientific/technical evidence?

## Criterion 3 – Material requirements

1. Wood and wood-based and other forest materials
2. Plastic materials
3. Metal materials
4. Upholstery fabrics
5. Padding materials
6. Glass
7. Energy embodied in materials
8. Lighting sources

## a) Wood and wood-based and other forest materials

### a.1) *Origin and traceability of all forest and wooden materials*

Align the criterion with **Timber Trade Regulation** (Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010)

**Include Non Wood Forest Products.** If the scope is extended to other forestry and vegetal materials, such as willow or bamboo.

## *a.2) Sustainable Forest management for wood and wooden materials*

Discussion on the **% of certified/recycled solid wood** (current 70%)  
Proposal to increase **% certified/recycled materials for wood-based materials** (current 40%)

### **Other forestry and vegetal materials**

For those materials with no sustainable source certifications available, origin and traceability shall be provided as well as evidence of written procedures on sustainable management chain.

## *b) Recycled wood fibres*

Propose more restrictive limits for recycled wood fibres **according to the new updated European standard EN 71-3:2013** regarding the migration of certain elements.

## *c) Production of wood-based materials*

The content of **free formaldehyde in products or preparations used in the panels shall not exceed 0,2 % (w/w)**. The content of free formaldehyde **in binding agents, adhesives, and glues for plywood panels or laminated wood panels shall not exceed 0,2 % (w/w)**.

*e) Formaldehyde emission from untreated raw wood-based materials*

The **emission of formaldehyde from particle and fibreboards in their raw state, i.e. prior to machining or coating**, shall not exceed **50%** of the threshold valued that would allow it to be classified as **E1 according to the European standards**.

*f) Formaldehyde emission for Surface Treatments*

**Formaldehyde emissions** from substances and preparations for **surface treatment liberating formaldehyde (< 0.05 ppm)**.

*g) Genetically modified wood*

The product shall not contain GMO wood.

## Discussion

1. **Timber trade Regulation**, application started in March 2013, including plywood, veneer, particle board and furniture. Criteria will be removed as redundant.
  
2. a) Discussion on the % of **certified/recycled solid wood** (currently 70%)  
b) Discussion on the % **certified/recycled materials for wood-based materials** (current 40%)
  
3. **Other forestry and vegetal materials.**(*e.g.* bamboo)  
If certification is available, discuss %.

4. Stricter **limit values for recycled wood fibres**.  
EN71-3:2013 versus EPF standard.
5. Stricter values for **free formaldehyde in products or preparations** used in the panels, adhesives, glues: **0.2% (w/w)**
6. **Emission of formaldehyde** from particle and fibreboards in their raw state, *i.e.* prior to machining or coating, shall not exceed **50%** of the threshold value that would allow it to be classified as **E1 according to the European standards**

**Small pieces** (<50g) should not be encompassed by the requirements of this section.

## Plastic materials

Requirements where the final product contains **more than 10% by weight plastic**:

Plastic materials must consist of at least **50% by weight recycled** materials.

## Metal materials

Requirements where the final product contains **more than 50% by weight metal**

**50% of aluminum and steel** must be **recycled** metal.

**Other metals: 20% must be recycled** metal.

## Upholstery fabrics

### *Textiles*

Textiles shall comply with the requirements set for the specific fibre types according to the **EU Ecolabel on textiles** currently under final revision.

### *Leather*

Due to a limited market share, it will be proposed that leather shall **not be included** in upholstery fabrics.

## Padding materials

Padding materials shall comply with the **EU Ecolabel criteria for bed mattresses** and comply with the requirements set for the **latex and polyurethane foams**.

## Glass

Glass shall be readily **replaceable**

Discuss if glass shall be **recyclable**

Discuss if a **minimum of % of recycled glass** can be proposed.

Requirements where the final product contains **more than 10% by weight glass: no lead glazing, crystal glass, mirror glass**, shall be used.

Discuss if wire-reinforced and laminated glass can be used if it is required by law in order to meet specific **safety** requirements. 38

Limitation of **energy embodied** in materials used.

Energy embodied in materials present in the final product should not exceed the limits defined for each furniture group (*to be defined*).

Energy embodied in the product will be calculated with the following formula:

$$E = \sum W_i \times F_i$$

Where:

i: each material

W<sub>i</sub>: weight of each material

F<sub>i</sub>: energy factor for each material (*to be defined*)

**Lighting sources** in furniture: In the case where a lighting function is available in the product, fittings must be equipped with light sources classified with energy class A, according to REGULATION (EU) No 874/2012 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labeling of electrical lamps and luminaries.

## Discussion

1. If the final product contains more than 10% by weight **plastic**, plastic materials must consist of at least 50% by weight **recycled** materials. Do you agree with this? Alternatives?
2. If the final product contains more than 50% by weight metal
  - 50% of aluminum and steel must be **recycled metal**.
  - Other metals: 20% must be recycled metal.Do you agree with this? Alternatives?
3. Do you agree to use for the textiles the **EU Ecolabel for textiles**?
4. Do you agree to use the **EU Ecolabel** criteria for **latex and PU foams** (bed mattresses)?

5. Do you agree to **exclude leather** from the criteria based on the low market share? Which minimum criteria could be covered?
6. Do you agree to put a **minimum % of recycled glass**?  
How much?
7. Do you agree that when more than 10% by weight glass is used, **no lead glazing, crystal glass or mirror glass** shall be used?
8. What is your opinion on the criterion for energy embodied in the material?

## Criterion 4 – Surface treatments

Chemical substances classified as harmful for the environment (hazard statements: **H400, H410, H411, H412, H413 and EUH059**) by the manufacturer/supplier in accordance with CLP regulation shall comply with one of the two following limits:

Chemical substances classified as harmful for the environment in accordance with CLP regulation or Directive 1999/45/EC **must not be added to substances and mixtures for surface treatment.**

Nevertheless, **the products may contain up to 5 % volatile organic compounds (VOC)** as defined in Council Directive 1999/13/EC. If the product requires dilution, the contents of the diluted product must not exceed the aforementioned threshold values.

The **applied quantity** (wet paint/varnish) of environmentally harmful substances in accordance with CLP Regulation shall **not exceed 10 g/m<sup>2</sup>** surface area and applied quantity (wet paint/varnish) of **VOC** shall **not exceed 30 g/m<sup>2</sup>**.

## Criterion 5 – Assembly of furniture

(a) *Hazardous substances in additives and binding agents*

(b) *VOC*

The **VOC content of adhesives used in the assembly of furniture shall not exceed 3% (w/w).**

## Discussion

1. Do you agree that products may contain up to **5 % volatile organic compounds (VOC)**?
2. The **applied quantity** (wet paint/varnish) of environmentally harmful substances in accordance with CLP Regulation **shall not exceed 10 g/m<sup>2</sup>** surface area and applied quantity (wet paint/varnish) of **VOC shall not exceed 30 g/m<sup>2</sup>**. Do you agree?
3. Do you agree that the **VOC content of adhesives** used in the assembly of furniture **shall not exceed 3% (w/w)**?

## Criterion 6 – Final product

### (a) Durability and safety

All products shall fulfil the requirements on durability, strength, safety and stability in **EN standards** applicable to the usage of the product. If no EN standard exists, the requirements in **ISO standards** shall be used. If no EN or ISO standard exists, an evaluation of the product's durability, strength, safety and stability on the basis of the design and choice of materials shall be performed by an **independent test institution**.

For chairs and tables designated to be used in offices and schools, products shall fulfil the requirements on ergonomics and fitness for use according to current EN and ISO standards.

The user manual will provide the list of norms and standards which shall be used for the durability assessment.

## (b) Ergonomics and fitness for use:

Products shall fulfil the requirements on ergonomics and fitness for use according to current **EN and ISO standards**.

The user manual will provide the list of norms and standards which shall be used for the durability assessment.

- BS EN 1728:2012. Furniture. Seating. Test methods for the determination of strength and durability
- BS EN 1728:2012. Furniture. Seating. Test methods for the determination of strength and durability
- DD ENV 14443:2004. Domestic furniture. Seating. Test methods for the determination of durability of upholstery
- BS EN 12520:2010. Furniture. Strength, durability and safety. Requirements for domestic seating
- BS EN 15373:2007. Furniture. Strength, durability and safety. Requirements for non-domestic seating
- BS 5459-2:2000+A2:2008. Specification for performance requirements and tests for office furniture. Office pedestal seating for use by persons weighing up to 150kg and for use up to 24 hours a day, including type-approval tests for individual components
- BS 4875-5:2009. Strength and stability of furniture. Requirements for strength, durability and stability of tables and trolleys for domestic use

## *(c) Maintenance*

Maintenance of products shall be possible **without organic based solvents**.

The manufacturer shall guarantee the possibility of acquiring **spare part** (original functional items or items fulfilling equivalent functions) upon request throughout the actual period of their industrial manufacturing and for a period of 5 years as of the date when production of the relevant range is stopped.

The product shall be easy to assembly and disassembly. **Assembly should be done by reversible methods** (screws) in order to allow disassembly and remanufacturing.

## *(d) Recycling and waste*

The product must be **easily recyclable**. A detailed description of the best ways to dispose of the product (reuse, recycling, take back initiative by the applicant, energy production) shall be given to the consumer, ranking them according to their impact on the environment. For each option the precautions to be taken to limit the impact on the environment will have to be clearly stated.

**All parts of different materials should be easy to separate** in order to guarantee recyclability.

**Plastics** parts weighting **more than 50g** must be **visibly labeled** in accordance to ISO 11469 or equivalent and must not contain additions of other materials that may hinder their recycling.

## *(e) Consumer information*

The following information shall be supplied with the Ecolabelled product:

- Information on the fitness for purpose, on the basis of domestic or contract use (light or heavy, indoor or outdoor);
- Information on cleaning and care;
- Instruction for the replacement **of all replaceable parts** (glass, textiles, etc., if any) upon request in case of damage or breakage from manufacturer or retailer;
- Instruction that the local authorities should be contacted on the best way to dispose of old furniture and materials;
- Instruction for assembly and **disassembly**;

## Criterion 7 – Packaging

Packaging must fulfil the following requirements:

(i) Made out of one of the following:

- **easily recyclable material;**
- materials taken from **renewable resources;**
- materials **intended to be reusable**, such as textile coverings.

(ii) All materials shall be **easily separable by hand in recyclable parts consisting of one material** (e.g. cardboard, paper, plastic, textiles).

## *(f) Information on the packaging*

The following text shall appear on the packaging:

‘For more information as to why this product has been awarded the Flower, please visit the website: <http://www.ecolabel.eu>’

The following text (or equivalent text) shall also appear on the packaging and in the user manual:

‘For more information visit the European Eco-label website.

Additional information can be obtained at: name/address of the consumer department of the applicant’.

*Packaging requirements in function of the material used:*  
Shall comply with requirements set out in criterion 2 sections  
a), b) and c) for hazardous substances

Paper/cardboard packaging: **Chlorine gas shall not be used as a bleaching agent.**

## *(g) Information appearing on the eco-label*

Some proposals are:

- Products tested for durability, safety and ergonomics
- Minimum energy impact (if energy consumption requirements are set as additional criterion)
- Wood from sustainable managed forests
- Limited use of substances of concern
- % of recycled material used



**Thank you**