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Revision of European Ecolabel Criteria for Soil Improvers and Growing Media

Technical Report

Draft Criteria proposal

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Institute for Prospective Technological Studies

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Acronyms

ABP	Animal By-Products
ABPR	Animal By-Products Regulations
ABPR	Animal By-Product Regulations
AD	Anaerobic Digestion
AOX	Adsorbable Organic Halogen
BSI	British Standards Institute
CEN	Comité Européen de Normalisation (European Committee for Standardisation)
CEN TC	European Committee for Standardization (Comité Européen de Normalisation) Technical Committee
CLP	Classification, Labelling and Packaging (refers to Regulation on Classification, Labelling and Packaging of Substances and Mixtures)
DDT	DichloroDiphenylTrichloroethane
DG	Directorate General
EC	European Community
ECHA	European Chemicals Agency
EEC	European Economic Community
EoW	End of Waste
EPA	Environmental Protection Agency
EU	European Union
GM	Growing Media
GPP	Green Public Procurement
IPTS	Institute for Prospective Technological Studies
JRC	Joint Research Centre
LCA	Life Cycle Assessment

MBT	Mechanical-Biological Treatment
MS	Member State
MSW	Municipal Solid Waste
OJ	Official Journal
PAH	Polycyclic Aromatic Hydrocarbon
PAS	Publically Available Standard
PBDE	PolyBrominated Diphenyl Ether
PCB	Polychlorinated Biphenyl
PCDD	Polychlorinated Dibenzodioxin
PCDD	PolyChlorinated Dibenzo-p-Dioxin
PCDF	Polychlorinated Dibenzofuran
PFC	PerFluorinated Compounds
PFNA	PerFluoroNonanoic Acid
PFOA	PerFluoroOctanoic Acid
PFOS	PerFluoroOctane Sulfonate
POP	Persistent Organic Pollutant
PTE	Potentially Toxic Element
QAS	Quality Assurance System
REACH	Registration, Evaluation, Authorisation and restriction of Chemicals
rWFD	Revised Waste Framework Directive
SI	Soil Improvers
TA	Technical Annex
TC	Technical Committee
TCDD	TetraChloroDibenzo-para-Dioxin

TEQ	Toxic EQuivalent
TS	Technical Standard
UK	United Kingdom
US	United States
VAT	Value Added Tax
WFD	Waste Framework Directive
WRAP	Waste and Resources Action Programme

1 Introduction

The revision process of the current EU Ecolabel criteria for Soil improvers (Decision 2006/799/EC) and Growing media (Decision 2007/64/EC) is under development. In order to prepare the ground for this revision process, a study has been carried out by the Joint Research Centre's Institute for Prospective Technological Studies (JRC-IPTS) with technical support from the Ricardo-AEA. The work is being developed for the European Commission's Directorate General for the Environment.

A Preliminary Report has been produced (September 2013), which summarises all the work done in preparation for the First Ad-Hoc Working Group meeting, at which the new criteria will be discussed with stakeholders. The Technical Report – Draft criteria proposal presents the criteria proposals as result of the study and the recommendations that were contained in the Preliminary Report, together with their justification.

Currently, separate sets of EU Ecolabel criteria exist for Soil improvers (Decision 2006/799/EC) and Growing media (Decision 2007/64/EC). The revision process spans both product groups; thus common criteria for both Soil improvers and Growing media are developed, only distinguishing between technical product characteristics where necessary.

Another objective of this revision is addressing the possibility to broaden the current scope to the product *mulch*, as it has been identified as a potentially differentiated product.

The main issues addressed in the revision process have taken into account the Commission Statement issued in April 2006:

Issues to be addressed	Growing Media	Soil Improvers
Strengthening demands for heavy metals	X	X
Reducing the use of mineral wool (25% or 50%)	X	
Use of re-cycled/re-used mineral wool	X	
Extraction phase and emissions for minerals	X	
Re-look at the inclusion of peat	X	
Limits for relevant organic pollutants (*)	X	X
Test methods - *E. Coli* versus *Helminth Ova*		X
Sustainable resource management for ingredients		X

(*) Especially pesticides from fruit and vegetable sludges

The revision process has been conducted considering the new legislative framework that will apply to the product group: End of waste criteria for biodegradable waste that is currently under development and the Fertilizers Regulation that is currently being revised and will include soil improvers and growing media in its scope.

Additionally, the EU Ecolabel Regulation 66/2010 has introduced new requirements by mean of Article 6.6 and 6.7., whose application in the product groups "soil improver", "growing medium" and "mulch" has been studied.

The current separate sets of EU Ecolabel criteria exist for Soil improvers and Growing media are the following:

Soil improvers	Growing media
Criterion 1.1 Organic ingredients	Criterion 1.1 Organic ingredients
Criterion 1.2 Sludges	Criterion 1.2 Sludges
Criterion 1.3 Minerals	Criterion 1.3 Minerals
Criterion 2. Limitation of hazardous substances	Criterion 2. Limitation of hazardous substances
Criterion 3. Physical contaminants	---
Criterion 4. Nutrient loadings	---
Criterion 5. Product performance	Criterion 3. Product performance
Criterion 6. Health and safety	Criterion 4. Health and safety
Criterion 7. Viable seeds/propagules	Criterion 5. Viable seeds/propagules
---	Criterion 6.a Electrical conductivity
---	Criterion 6.b After use
Criterion 8. Information provided with the product	Criterion 7. Information provided with the product
Criterion 9. Information appearing on the eco-label	Criterion 8. Information appearing on the eco-label

The following set of criteria is proposed:

<table>
<tr><th>Soil improvers</th><th>Growing media</th><th>Mulches</th></tr>
<tr><td colspan="3">Criterion 1.1 Organic ingredients</td></tr>
<tr><td colspan="3">Criterion 1.2 Sludges</td></tr>
<tr><td>Criterion 1.3 Minerals
- Source of mineral extraction</td><td>Criterion 1.3 Minerals
- Mineral wool
- Source of mineral extraction
- Minerals after use</td><td>Minerals are not allowed as constituent of mulch</td></tr>
<tr><td colspan="3">Criterion 2. Limitation of hazardous substances
- Criterion 2.1 Potential Toxic Elements
- Criterion 2.2 Organic pollutants</td></tr>
<tr><td colspan="3">Criterion 3. Physical contaminants</td></tr>
<tr><td colspan="3">Criterion 4. Nutrient loadings</td></tr>
<tr><td colspan="3">Criterion 5. Product performance</td></tr>
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<tr><td>---</td><td>Criterion 8 Electrical conductivity</td><td>---</td></tr>
<tr><td colspan="3">Criterion 9. Biostability</td></tr>
<tr><td colspan="3">Criterion 10. Information provided with the product</td></tr>
</table>

2 Product group definition

	Growing Media	Soil Improvers	Mulch
Current	The product group 'growing media' shall comprise material other than soils in situ, in which plants are grown.	The product group 'soil improvers' shall comprise materials to be added to the soil in situ primarily to maintain or improve its physical properties, and which may improve its chemical and/or biological properties or activity.	
Proposal	The product group 'growing media' shall comprise material other than soils in situ, in which plants are grown.	The product group 'soil improvers' shall comprise materials to be added to the soil in situ primarily to maintain or improve its physical properties, and which may improve its chemical and/or biological properties or activity.	The product group 'mulches' shall comprise materials to be used as protective covering placed around plants to prevent the loss of moisture, control weed growth, and reduce soil erosion.

Rationale and discussion

The analysis of existing definitions has revealed the following findings:

- The current EU Ecolabel definition for Growing Media is consistently applied in the current EU Ecolabel documents and is consistent with the definition of Growing Media used in CEN Standards.
- The EU Ecolabel definition for Growing Media is a simple statement that provides an open playing field for commercial interests.
- The EU Ecolabel for Growing Media would contain aspects of hydroponic production. The definitions given by CEN/TC 223 derive that hydroponic production are not considered separately. However whilst some forms of hydroponic production involve growing plants in a wholly mineral nutrient water based medium, other methods include growing the plants in medium containing solid supports through which the mineral nutrient solution is passed.
- The current EU Ecolabel definition for soil improvers provides some inconsistency, as two different definitions appear in the EU Ecolabel User Manual. One of these is a simple definition that closely matches the definition applied by CEN apart from a few word changes, i.e. changing the first part of the definition from *Material added to soil* to *Materials to be added to the soil* . The definition given by the User Manual is more complex; so it may lead to confusion, as it is not helpful to include the phrases "*can loosely be used", "include bulky organic manures" and "can be subdivided in soil conditioner, planting materials or mulches."*.
- Mulch is applied as a surface layer to soil, is not incorporated into the soil and typically has different characteristics than true soil improvers. Therefore, the initial view is that mulch is a product that can

be differentiated from soil improvers on the basis of its function and application as a layer on top of the soil. Whilst this may be considered as insufficient differentiation by many, the differences could lead to different hazards and risks associated with mulches compared with soil improvers. It is likely that different criteria might need to be developed for mulches and for soil improvers that reflect differences in risks.

- The next Fertilizer Regulation will cover the products soil improver and growing medium, and it will contain definitions of both products

Based on the findings above, the recommendations on definitions are the following:

- The definitions of Soil Improvers and Growing Media are consistently applied and match those typically applied in CEN developed Standards for these products.
- Nevertheless, EU Ecolabel definitions shall be aligned to the definitions within the next Fertilizer Regulation, in order to ensure the consistency among the European product policies. Thus, the development of this regulation will be followed during the revision of the EU Ecolabel Decision and its product definitions will be harmonized with the ones within the last version of the Fertilizer Regulation. Meanwhile, CEN Standards definitions will be used since they are the most relevant references currently available;
- That a separate product “Mulch” is considered for which EU Ecolabel criteria are developed.

3 Criteria proposal

Current criteria for soil improvers and growing media

Currently, separate sets of EU Ecolabel criteria exist for Soil improvers and Growing media, which are the following:

Soil improvers	Growing media
Criterion 1.1 Organic ingredients	Criterion 1.1 Organic ingredients
Criterion 1.2 Sludges	Criterion 1.2 Sludges
Criterion 1.3 Minerals	Criterion 1.3 Minerals
Criterion 2. Limitation of hazardous substances	Criterion 2. Limitation of hazardous substances
Criterion 3. Physical contaminants	---
Criterion 4. Nutrient loadings	---
Criterion 5. Product performance	Criterion 3. Product performance
Criterion 6. Health and safety	Criterion 4. Health and safety
Criterion 7. Viable seeds/propagules	Criterion 5. Viable seeds/propagules
---	Criterion 6.a Electrical conductivity
---	Criterion 6.b After use
Criterion 8. Information provided with the product	Criterion 7. Information provided with the product
Criterion 9. Information appearing on the eco-label	Criterion 8. Information appearing on the eco-label

Proposal of revised criteria

The revision process spans both product groups; thus common criteria for both soil improvers and growing media are developed, which are only distinguishing between technical product characteristics where necessary. Another objective of this revision is addressing the possibility to broaden the current scope to mulch, as it has been identified as a potentially differentiated product.

The following set of criteria is proposed:

Soil improvers	Growing media	Mulches
Criterion 1.1 Organic ingredients		
Criterion 1.2 Sludges		
Criterion 1.3 Minerals - Source of mineral extraction	Criterion 1.3 Minerals - Mineral wool - Source of mineral extraction - Minerals after use	Minerals are not allowed as constituent of mulch
Criterion 2. Limitation of hazardous substances - Criterion 2.1 Potential Toxic Elements - Criterion 2.2 Organic pollutants		
Criterion 3. Physical contaminants		
Criterion 4. Nutrient loadings		
Criterion 5. Product performance		
Criterion 6. Health and safety		
Criterion 7. Viable seeds/propagules		
---	Criterion 8 Electrical conductivity	---
Criterion 9. Biostability		
Criterion 10. Information provided with the product		

In this part of the report, we present the criteria proposal derived from the findings of the technical analysis within the Preliminary report. These criteria are discussed in detail in the Technical Annexes, which assesses the evidence available and draws conclusions about whether or not conditions should be placed on each criterion in the EU Ecolabels, and if so, what the conditions should be.

Each of the recommendations is presented in turn below, together with the current EU Ecolabel criteria (Decision 2006/799/EC EU Ecolabel criteria for soil improvers and Decision 2007/64/EC EU Ecolabel criteria for growing media) and a brief justification for the recommendations. However, the reader is strongly advised to consult the Technical annex of the Preliminary Report for the detailed reasoning.

3.1 Criterion 1: Ingredients

3.1.1 *Criterion 1.1: Organic ingredients*

<table>
<tr><th></th><th>Growing Media</th><th>Soil Improvers</th><th>Mulch</th></tr>
<tr><td>Current</td><td colspan="2">A product shall only be considered for the award of the Eco-label if it does not contain peat and its organic matter content is derived from the processing and/or re-use of waste.</td><td></td></tr>
<tr><td>Proposal 1</td><td colspan="3">A product shall only be considered for the award of the Eco-label if it does not contain peat and its organic matter content is derived from the processing and/or re-use of waste. Compost and digestates shall fall within the scope of the End of waste criteria for biodegradable waste (currently under development) and shall comply with the criteria to be reach the end-of –waste status.</td></tr>
<tr><td>Proposal 2</td><td>Peat is allowed under provisions set out below:

A. Only for GM where the peat is no more than 20% of the GM on a dry matter basis; and

B. The peat is sourced from a responsibly managed peat production source that is neither a pristine peat habitat nor a designated Natura 2000 site, Special Area of Conservation (SACs) or Site of Special Scientific Interest (SSSIs).

Other organic matter content shall be derived from the processing and/or re-use of waste. Compost and digestates shall fall within the scope of the End of waste criteria for biodegradable waste (currently under development).</td><td colspan="2">A product shall only be considered for the award of the Eco-label if it does not contain peat and its organic matter content is derived from the processing and/or re-use of waste. Compost and digestates shall fall within the scope of the End of waste criteria for biodegradable waste (currently under development) and shall comply with the criteria to be reach the end-of –waste status.</td></tr>
</table>

Assessment and verification

Proposal 1: The applicant shall provide the Competent Body with the detailed composition of the product, and a declaration of compliance with the above requirement.

Proposal 2: The applicant shall provide the Competent Body with the detailed composition of the product, and a declaration of compliance with the above requirement. The declaration shall be that the peat is

sourced from a recognised responsible peat source and is not from a protected special site. The declaration shall be granted by third party verification.

Rationale and discussion

The potential inclusion of peat in the EU Ecolabel is a particularly contentious area and the scientific evidence available is not robust enough to allow for a final conclusion to be made. It is clear from stakeholder feedback that peat is an important element in producing reliable and good quality high performing GM. The current prohibition of peat in EU Ecolabel for GM and SI is thought (by ourselves and many stakeholders) to be a key factor in the current low uptake of this Ecolabel product stream by commercial GM and SI producers.

The LCA evidence suggests that, from this perspective, the inclusion of peat in GM as a minor constituent is unlikely to be significantly worse compared with GM that is peat free. However, the extraction of peat is not a sustainable operation due to the slow natural rate of peat formation.

Some proposal options are therefore included in this section, but it must be emphasised that these are preliminary proposals only. In our view, the peat issue for EU Ecolabel GM, SI and mulches will need further debate by stakeholders at the AHWG meeting and thereafter. These proposals, along with the evidence and discussions in this report, are therefore given to guide this further debate.

Our recommendation is to exclude peat from EU Ecolabel for SI and mulches. This is based mainly on the fact that peat is rarely used in these products in the first instance and prohibition would therefore have little impact on the production and markets for these products.

For growing media, there are two options to consider, which are either a similar retention of the complete prohibition of peat, or to allow the inclusion of a certain percentage of peat in GM under certain conditions. In this context, we would not propose to make any differentiation between black and white peat as, in practice, there is a spectrum of degrees of peat decomposition from weakly through to strongly decomposed, rather than distinct peat types. Whilst the prohibition would adhere strictly to the EU Ecolabel principles. it is also thought likely in our and some stakeholders' opinion that this would maintain the status quo of a low uptake of EU Ecolabel for these products in the market place. If it is decided to allow a certain percentage of peat in GM, this should have a defined limit, which we proposes should not exceed 20% on a dry matter basis. This proposed limit is suggested on the basis of the LCA studies which indicate that such a peat content results in environmental impacts similar to many peat free GM. Moreover, peat used for the purposes of EU Ecolabel should then only be allowed from responsibly managed peatlands that are neither pristine peat habitats nor designated Natura 2000 sites, Special Areas of Conservation (SACs) or Sites of Special Scientific Interest (SSSIs). In that respect, acceptable sources and conditions to ensure responsible peat extraction should be clearly defined in the final EU Ecolabel criteria. For more details, see Technical Annex Section A1 of the Preliminary report.

Regarding compost and digestates, the End of waste criteria for biodegradable waste that is currently under development, sets the mandatory requirements to reach the end of waste status as it is foreseen the Article 6 of the Waste Framework Directive (Directive 2008/98/EC). The End-of-waste criteria for Biodegradable waste Draft Final Report (July 2013) defines its scope as:

The scope includes hygienised and stabilized compost and digestate materials obtained through a biological waste treatment process exclusively using non contaminated input materials from the separate collection of bio-waste, as well as from biodegradable residues from agriculture (including manure), forestry, fishery and horticulture, or any such previously composted or digested material.

'Biodegradable' is defined as reaching a biodegradation level of at least 90% in less than 6 months under normal composting or digestion process conditions.

'Bio-waste' is defined according to Article 3(4) of the Waste Framework Directive 2008/98/EC as biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants.

'Contaminated' is defined as having a level of chemical, biological or physical contamination that may cause difficulties in meeting the end-of-waste output product quality requirements or that may result in other adverse environmental or human health impacts from the normal use of the output compost/digestate material.

'Separate collection' is defined according to Article 3(11) of the Waste Framework Directive 2008/98/EC as the collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment.

The scope excludes compost and digestate materials partially or completely derived from contaminated input materials or from the organic fraction of mixed municipal household waste separated through mechanical, physicochemical, biological and/or manual treatment, from sewage sludge, from sludges derived from the paper industry or from non-biodegradable materials.

3.1.2 *Criterion 1.2: Sludges*

	Growing Media	Soil Improvers	Mulch
Current	Products shall not contain sewage sludge. (Non-sewage) sludges are allowed only if they meet the following criteria: Sludges are identified as one of the following wastes according the European list of wastes (as defined by Commission Decision 2001/118/EC of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes: 0203 05 0204 03 0205 02 0206 03 0207 05 Sludges are single-source separated, meaning that there has been no mixing with effluents or sludges outside the specific production process. Maximum concentrations of heavy metals in the waste before treatment (mg/kg dry weight) meet the requirements of criterion 2. Sludges shall meet all other Eco-label criteria specified, in which case they are considered to be sufficiently stabilised and sanitised.		
Proposal	Products shall not contain sewage sludge. (Non-sewage) sludges are not allowed. Only compost and digestates that fall within the scope of the End of waste criteria for biodegradable waste (currently under development) and fulfil the requirements to reach the end of waste status are allowed.		

Assessment and verification

The applicant shall provide the Competent Body with the detailed composition of the product, and a declaration of compliance with the above requirements.

Rationale and discussion

This criterion is written to ensure that the composts and digestates produced from sludges are within the scope of the End of waste criteria for biodegradable waste and comply with the criteria to reach the end-of –waste status according to Article 6 of the Waste Framework Directive (Directive 2008/98/EC).

3.1.3 *Criterion 1.3: Mineral ingredients*

Mineral Wool

	Growing Media	Soil Improver	Mulch
Current	*Not specific criterion on mineral wool*		
Proposal	Mineral wool shall meet the following considerations: A, Only for GM composed of 100% mineral wool used in commercial horticultural applications. B, The mineral wool is sourced from recycled mineral wool or from a manufacturing process that uses at least [60%] waste as feedstock and that any raw minerals used in the manufacturing process are not sourced from a specially protected habitat site C, Mineral wool and substances present in it are not classified as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction, according to CLP Regulation.	Not allowed	Not allowed

Assessment and verification

The applicant shall provide a declaration that the mineral wool is used for commercial horticultural applications.

The applicant shall provide a declaration that the mineral wool is derived from recycled mineral or manufactured from a process using at least [60%] recycled waste (state source) and that any raw minerals used in the manufacturing process are not sourced from a specially protected habitat site.

The applicant shall provide summarized information on the relevant characteristics associated to the hazard statement referred to in Criterion, to the level of detail specified in section 10, 11 and 12 of Annex II of Regulation (EC) 1907/2006 (Requirements for the Compilation of Safety Data Sheets).

Rationale and discussion

Mineral wool in soil improvers and mulches

The use of mineral wool as **mulch** or as a constituent of mulch does not seem an appropriate use for this material. Our proposal would be that mineral wool is not permitted in EU Ecolabel mulch.

Although mineral wool is currently permitted in EU Ecolabel **soil improvers**, its inclusion would be a rare occurrence and any specific advantage of a soil improver having mineral wool as a constituent is not immediately apparent. Most soil improvers would be largely based on single constituent composts or

digestates or other organic matter. On this basis, our proposal is that mineral wool should not be permitted in EU Ecolabel soil improvers.

In the case of granulates made from waste mineral wool, more information is needed to assess the suitability of this constituent in soil improvers awarded the EU Ecolabel, and the compliance with the End-of-waste criteria for Biodegradable waste that is currently under development.

Mineral Wool in Growing Media

The inclusion of mineral wool in growing media is considered a possibility. However, given the uncontrolled nature of the risk from dusts from handling growing media by amateur gardeners, we propose that mineral wool is not allowed as a constituent in general GM that would be used in pots and tubs, but is restricted to its use in commercial horticultural applications (closed-cycle recirculating hydroponic systems) as 100% mineral wool GM. Under these conditions, the risks from inhalation of fibre may be controlled and the spent GM may be recycled for the same application or alternatively disposed of by some other route.

Mineral wool as growing media for non-professional uses

The management of spent GM raises further concerns that suggest the exclusion of mineral wool from GM. Spent GM may be re-used by the amateur gardener or placed in household waste, which may in turn hinder the recycling process, leading to disposal of the waste mineral wool in landfill.

It is our view that it would be impractical to arrange and manage a totally separate recycling route for mineral wool containing GM, so that the used GM could undergo a processing step that removed the mineral wool. We foresee that the volumes collected from amateur users would be low and very variable.

Mineral wool as growing media for commercial applications

Arisings of spent GM composed of 100% mineral wool in commercial hydroponic applications would be on a sufficient scale that the used GM could be collected and effectively cleaned and recycled. We understand from the stakeholder consultation that the re-use of this GM is not practised due to the difficulty of cleaning and mitigating risks from spreading plant pathogens. However, such issues are not insurmountable, and might be considered, together with recycling into other mineral wool applications. Disposal of used mineral wool to landfill would not represent a significant health risk due to the general inert nature and containment of landfill but would represent a loss of potential resources.

The current EU Ecolabel GM criteria recognise this and provide in Criterion 6b requirements for the after use of mineral GM. In our view, these provisions should be retained, but discussions should be conducted with respect to revising some of the requirements – for example, decreasing the threshold from 30,000 m^3 and increasing the volume of used GM to be recycled to a value greater than 50%.

Sources of mineral wool

There are a limited number of LCA studies assessing the environmental impact of mineral wool as an insulation material and in GM. The context and underlying assumptions in the LCAs are not clear from the reports.

On the basis of the limited LCA data and the consultation feedback, we would recommend that mineral wool for EU Ecolabel purposes is only acceptable if sourced from a manufacturing process that uses at least 60% waste material as input. Where any manufacturing process uses raw extracted minerals in the production of

mineral wool, this should be only be sourced from sites that are not special protected sites as in the current EU Ecolabel criteria.

Mineral wool and CLP Regulation (Regulation (EC) No 1272/2008)

Mineral wool is included in CLP Regulation as a substance that may be classified as Carcinogen category 2 if it does not fall under the conditions of exception. The exceptions are included in the Notes Q and R within the CLP Regulation, meaning that if the mineral wool is under the scope of one of these notes, the classification of carcinogen cat 2 does not apply to it:

- Note Q:

  The classification as a carcinogen need not apply if it can be shown that the substance fulfils one of the following conditions:

  - a short term biopersistence test by inhalation has shown that fibres longer than 20 µm have a weighted half-life less than 10 days; or
  - a short term biopersistence test by intratracheal instillation has shown that fibres longer than 20 µm have a weighted half-life less than 40 days; or
  - an appropriate intra-peritoneal test has shown no evidence of excess carcinogenicity; or
  - absence of relevant pathogenicity or neoplastic changes in a suitable long term inhalation test.

- Note R :

  The classification as a carcinogen need not apply to fibres with a length weighted geometric mean diameter less two standard geometric errors greater than 6 µm.

One of the main manufacturers of mineral wool for growing media purposes in Europe reported that its mineral wool falls under the Note Q provisions, fulfilling all of the conditions for the exclusion of classification as hazardous under this Note.

For more details, see Technical Annex Section A3 of the Preliminary report.

Sources of mineral Extraction

	Growing Media	Soil Improvers	Mulch
Current	Criterion 1.3 for both SI and GM clearly indicates that minerals extracted from natural resources can be used as a constituent, provided they are not sourced from protected sites. *"Minerals shall not be extracted from:* *- notified sites of Community importance pursuant to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora,* *- Natura 2000 network areas, composed of the special protection areas pursuant to Council Directive 79/409/EEC on the conservation of wild birds, and those areas under Directive 92/43/EEC together, or equivalent areas located outside the European Community that fall under the corresponding provisions of the United Nations' Convention on Biological Diversity.* *Minerals applied as or in soil improvers/growing media are for example sand, clay, perlite, and mineral wool (as far as allowed by National legislation). The criteria also apply to minerals imported from non EU countries in which case the provisions of the United Nations' Conventions on Biological Diversity are guiding.*		
Proposal	Extracted minerals can be used provided that they are not extracted from: *- notified sites of Community importance pursuant to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora,* *- Natura 2000 network areas, composed of the special protection areas pursuant to Council Directive 79/409/EEC on the conservation of wild birds, and those areas under Directive 92/43/EEC together, or equivalent areas located outside the European Community that fall under the corresponding provisions of the United Nations' Convention on Biological Diversity.*		Not allowed

Assessment and verification

The applicant shall provide the Competent Body with a declaration of compliance with this requirement issued by the appropriate authorities.

Rationale and discussion

Criterion 1.3 (for both SI and GM) in the current EU Ecolabel criteria indicates that minerals extracted from natural resources can be used as a constituent, provided they are not sourced from protected sites.

Mulch is usually considered to consist of large particles of materials such as wood chips and bark applied on the surface of soil. Soil coverings with stone chips or pebbles may occur as a semi-permanent covering and, although this would suppress weeds and retain moisture, it is not in our view mulch, as it has a decorative function. Therefore, we propose that inorganic materials and especially extracted minerals are not permitted in EU Ecolabel mulch.

Soil improvers are generally organic materials, added to provide additional soil organic carbon. We consider that it is unlikely to be a soil improving activity to include substantial amounts of inorganic materials to soil. However, the addition of a mineral such as sand to soil of very poor quality with high clay content might be considered as soil improving, by increasing soil drainage. Adding lime to increase the soil pH in acid soils is also a common practice and might be considered as soil improvement. Furthermore, limed sludge can be used on acid soils to provide both fertiliser and soil pH adjustment. Those materials comprise the product "liming materials" according the definitions within the on-going revision of the Fertilizers Regulation; therefore they fall out of the scope of the product group "soil improvers".

Growing media are products that are generated for specific applications and, for some of those, the inclusion of inorganic constituents may be beneficial and provide the quality for the GM. The inclusion of inorganic constituents derived from natural sources in growing media therefore seems a reasonable proposition to consider. Additionally, for some applications such as in commercial horticulture, growing plants in hydroponics involves the use of a wholly mineral growing medium.

We conclude from the above analysis that it could be reasonable for both GM and SI to contain minerals, so the next consideration is whether any limits should be. The current EU Ecolabel criteria for SI and GM do not describe any limits for the mineral constituents, only that they are declared and are not from notified sites. Our view is that SI can potentially contain mineral materials, but the requirement of an organic matter content of at least 20% (see *Criterion 6: Product performance*) means that there is already an implicit limit. This also would apply for GM, except for GM used in closed-cycle recirculating hydroponic systems, where 100% mineral material is proposed to be permitted. For these reasons, we do not see a need to set a limit for mineral content.

Whenever mineral materials are used, a key question is whether there should be any other restriction on source, apart from the included in the current EU Ecolabel Decisions.

Another consideration was which minerals might and might not be permitted. The specific instance of mineral wool is addressed under its own criterion (See *Mineral Wool*). The technical annex details research into other constituents, from which we concluded that, having considered the relative merits of vermiculite and perlite, we could see no significant improvement if EU Ecolabel prohibited the use of vermiculite and promoted the use of perlite as substitute. No such restrictions on constituent are therefore included, beyond the requirement to source the minerals appropriately.

For more details, see Technical Annex Section A4 of the Preliminary report.

Mineral GM after use

	Growing Media	Soil Improvers	Mulch
Current	Applicable to mineral growing media only For all substantial professional markets (i.e. where the applicant's annual sales in any one country in the professional market exceed 30 000 m3), the applicant shall fully inform the user about available options for the removal and processing of growing media after use. This information shall be integrated in the accompanying fact sheets. The applicant shall demonstrate that at least 50 % by volume of the growing media waste is recycled after use.	N/A	
Proposal	Applicable to mineral growing media only For all substantial professional markets (i.e. where the applicant's annual sales in any one country in the professional market exceed 30 000 m3), the applicant shall fully inform the user about available options for the removal and processing of growing media after use. This information shall be integrated in the accompanying fact sheets. The applicant shall demonstrate that at least 50 % by volume of the growing media waste is recycled after use.	N/A	N/A

Assessment and verification

The applicant shall inform the Competent Body about the option(s) on offer and their response, to these options in particular:

- a description of collection, processing and destinations. At any time, plastics should be separated from minerals/organics and processed separately;
- an annual overview of the volume of growing media collected (input) and processed (by destination).

The applicant shall demonstrate that at least 50 % by volume of the growing media waste is recycled after use.

Rationale and discussion

The current EU Ecolabel GM criteria recognise this and provide in Criterion 6b requirements for the after use of mineral GM. In our view, these provisions should be retained, but discussions should be conducted with

respect to revising some of the requirements – for example, decreasing the threshold from 30,000 m^3 and increasing the volume of used GM to be recycled to a value greater than 50%.

3.2 Criterion 2: Limitation of hazardous substances

3.2.1 *Limits for Potentially Toxic Elements (PTEs)*

	Growing Media	Soil Improver	Mulch
Current	In the organic growing medium constituents, the content of the following elements shall be lower than the values shown below, measured in terms of dry weight	In the final product, the content of the following elements shall be lower than the values shown below, measured in terms of dry weight	
Proposal	In all constituents of the product, the content of the following elements shall be lower than the values shown below, measured in terms of dry weight		

	Growing Media, Soil improver and Mulch (mg/kg DW)										
	Zn	**Cu**	**Ni**	**Cd**	**Pb**	**Hg**	**Cr**	**Mo**	**Se**	**As**	**F**
Current (*)	300	100	50	1.0	100	1.0	100	2.0	1.5	10	200
Proposal	300	100	50	1.0	100	1.0	100	2.0	1.5	10	200
Stretch	250	80	50	0.8	75	0.75	75	2.0	1.5	10	200

(*) Data relating to the presence of Mo, Se, As and F are needed only for products containing material from industrial processes

Assessment and verification

Methods for PTE analysis

The applicant shall provide the result of tests conducted in accordance with testing procedure indicated in respective EN standards in the following table:

Parameter	Method CEN/TC400	Method other	Title
As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Zn	EN 16171:2012		Sludge, treated biowaste and soil - Determination of elements using inductively coupled plasma mass spectrometry

Parameter	Method CEN/TC400	Method other	Title
As, Cd, Cr, Cu, Pb, Hg, Mo, Se, Zn	EN 16170:2010		Sludge, treated biowaste and soil - Determination of elements using inductively coupled plasma optical emission spectrometry
Cr, Ni, Zn	EN 16188:2012		Sludge, treated biowaste and soil - Determination of elements in aqua regia and nitric acid digests - Flame atomic absorption spectrometry method
As, Cd, Pb	EN 16174:2013		Sludge, treated biowaste and soil - Digestion of aqua regia soluble fractions of elements
Hg	EN 16175-1: 2013		Sludge, treated biowaste and soil - Determination of mercury - Part 1: Cold-vapour atomic absorption spectrometry (detection limit 0.03 mg/kg dm)
Hg	EN 16175-2: 2013		Sludge, treated biowaste and soil - Determination of mercury - Part 2: Cold-vapour atomic fluorescence spectrometry (detection limit 0.003 mg/kg dm)
F	Not available	EN 15408:2011	Solid Recovered Fuels – Methods for the determination of sulphur (S), chlorine (Cl), fluorine (F) and bromine (Br) content

Methods for sampling and sample preparation

Parameter	Method CEN/TC400	Title
Sample preparation	EN 16179:2012	Sludge, treated biowaste and soil - Guidance for sample pretreatment
Sample preparation	EN 16173:2012	Sludge, treated biowaste and soil - Digestion of nitric acid soluble fractions of elements
Sample preparation	EN 16174:2012	Sludge, treated biowaste and soil - Digestion of aqua regia soluble fractions of elements

Proposed monitoring frequency

In our view, the minimum frequency for certification should match or even exceed the minimum indicated here. Our proposal would be for a minimum of four samples in three months prior to certification. Post certification, it was required that one sample is analysed for every 2,000 tonnes output on a dry matter basis up to maximum of 16 samples per year (four per quarter).

We would propose that this monitoring frequency is applied to SI, GM and mulches, but that consideration is given to applying more frequent monitoring for GM in the next revision of the EU Ecolabel.

We also propose that all constituents are monitored to the same frequency as the product, i.e. 4 samples taken in the three months prior to certification and one sample every 2,000 tonnes of constituent on a dry matter basis up to a maximum of 16 samples per year (four per quarter).

Rationale and discussion

Our recommendation is that the PTEs that should be limited in EU Ecolabel GM, SI and mulches are those that are currently limited, i.e. Zn, Cu, Ni, Cd, Cr, Pb, Hg, Mo, Se, As and F. We do not propose that Cr(VI) should be included as a parameter within the EU Ecolabel criteria, although it is included in some national standards and has been proposed by one stakeholder respondent. A comprehensive evaluation of the need for a development of appropriate limits for Cr(VI) is beyond the scope of this study. The risks from Cr(VI) associated with SI, GM and mulches should be monitored and considered in the next EU Ecolabel revision of these products.

Our recommended proposed limits are therefore the same as the current EU Ecolabel values for SI and GM. The limits for some parameters are more stringent than those currently being proposed for the EoW criteria for biodegradable waste, in particular for Cd (1.5 mg/kg DM), Pb (120 mg/kg DM), Cu (200 mg/kg DM) and Zn (600 mg/kg DM). However, we also recognise that the Draft Final Report on EoW Criteria for Biodegradable Waste (IPTS 2013) indicates that composts can be produced that readily attain lower values than these limits. Therefore, there is also the option to decrease limits further and if this option was considered, we would propose that lower limits might be applied to GM, SI and mulches as indicated by the values in the bottom row, labelled “stretch”.

For more details, see Technical Annex Section A5 of the Preliminary report.

3.2.2 *Limits for Organic Pollutants*

<table>
<tr><th></th><th>Growing Media</th><th>Soil Improvers</th><th>Mulch</th></tr>
<tr><td>Current</td><td>No specific limits, but a plant growth bioassay test is applied to monitor product performance under Criterion 3.</td><td>No specific limits, but a plant growth bioassay test is applied to monitor plant emergence and growth under Criterion 5b.</td><td></td></tr>
<tr><td>Proposal</td><td colspan="3">Limits as indicated below for Growing Media, Soil Improver and Mulches. Testing frequency to be: 4 samples in 3 months prior to certification; post certification for the first year, 1 sample every 2,000 tonnes of product up to a maximum of 16 samples per year; and then, for subsequent years, 2 samples per year if average of first year is less than half the limit and no limit exceeded by a single sample.
<table>
<tr><th>Pollutant</th><th>Test method</th><th>Limit</th></tr>
<tr><td>PAH_{16}</td><td>prCEN/TS 16181 when available</td><td>6 mg/kg dry matter</td></tr>
<tr><td>PCB_7</td><td>EN 16167:2012</td><td>0.2 mg/kg dry matter</td></tr>
<tr><td>PCDD/F</td><td>CEN/TS 16190:2012</td><td>30 ng I-TEQ/kg</td></tr>
<tr><td>Pesticides</td><td>Plant growth bioassay EN 16086-1:2011</td><td>Limits as indicated by test method</td></tr>
</table></td></tr>
</table>

Notes:

PAH_{16} = sum of naphthalene, acenaphtylene, acenaphtene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzo[a,h]anthracene and benzo[ghi]perylene

PCB_7 = sum of PCBs 28, 52, 101, 118, 138, 153 and 180

Assessment and verification

The applicant shall provide the result of tests conducted in accordance with testing procedure and frequency indicated in the following table:

Pollutant	Test method	Frequency (all tests)
PAH_{16} (sum of naphthalene, acenaphtylene, acenaphtene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzo[a,h]anthracene and benzo[ghi]perylene)	prCEN/TS 16181 when available	<u>Certification</u>: 4 samples in 3 months prior to certification <u>Post certification</u>: First year - 1 sample every 2,000 tonnes of product up to a maximum of 16 samples per year. <u>Subsequent years</u>: 2 samples per year if average of first year is less than half the limit and no limit exceeded by a single sample.
PCB_7 (sum of PCBs 28, 52, 101, 118, 138, 153 and 180)	EN 16167:2012	
PCDD/F	CEN/TS 16190:2012	
Pesticides	Plant growth bioassay EN 16086-1:2011	

Rationale and discussion

The current EU Ecolabel criteria for GM and SI do not include any limits for organic pollutants, although they do require a plant growth bioassay, which might show problems with organic pollutants such as herbicides. In our opinion, retaining an appropriate bioassay test would be an acceptable and suitable approach.

In addition, and to be in line with other initiatives, we would propose that some specific POPs limits should be introduced for PAHs, PCBs, PFC and PCDD/F. Although most of the responses from the stakeholder consultation would like to have no or limited monitoring, there have also been occurrences of poor quality products contaminated with organic pollutants.

The control of organic pollutants, particularly POPs that do not degrade during composting and AD, is largely by elimination of input materials containing such pollutants. The FATE study by IPTS published in the 3rd Working document for EoW criteria for biodegradable waste (IPTS, 2012) indicated, however, that there is likely to be some measurable and variable level of POPs in all potential waste streams. Elimination of known materials as constituents with a high risk of high concentrations is feasible, but in our view, such measures are unlikely to be fully effective and eliminate the risk of the composts and digestates being contaminated. Assurance of quality through appropriate product testing is therefore recommended.

The frequency of testing is a key parameter, as testing is a cost but greater assurance on product quality is provided by more frequent monitoring. The stakeholder responses are clearly (if understandably) influenced

by the financial cost of monitoring for organic pollutants, so an appropriate balance has been sought. It is also suggested that testing has to be carried out by laboratories accredited for that purpose, through an accreditation standard and accreditation organisation accepted at EU level or by the Member State competent authority. The costs of the tests proposed are shown in the following table:

Parameter	Test method	Cost
PAH_{16}	prCEN/TS 16181 when available	€ 149
PCB_7	EN 16167:2012	€ 201
PCDD/F	CEN/TS 16190:2012	€ 481
Pesticides	Plant growth bioassay EN 16086-1:2011	variable but comparable with above

For more details, see Technical Annex Section A2 of the Preliminary report.

3.3 Criterion 3: Health and safety

	Growing Media	Soil Improvers	Mulch
Current	• Salmonella spp: absent in 25g fw (ISO 6579) • Helminth ova(1): absent in 1.5g (prXP X33-017) • E. Coli (2): limit of 1000 MPN/g (ISO 11866-3)		
Proposal	For growing media, soil improver and mulch: • E. Coli: limit of 1000 CFU/g fw (CEN/TR 16193) • Salmonella spp: absent in 25g fw (ISO 6579)		

(1) For those products whose organic content is exclusively derived from green, garden or park waste.

(2) For those products whose organic content is exclusively derived from green, garden or park waste.

Key: MPN = most probable number; CFU = colony-forming units; fw = fresh weight

Assessment and verification

Test methods

The applicant shall provide the result of tests conducted in accordance with testing procedure indicated in the following table:

Parameter	Test method
E. Coli	CEN/TR 16193
Salmonella	ISO 6579

Sampling regime

The following sampling regime is proposed:

Pre-certification – Product as manufactured	4 samples from separate batches in 6 months
Pre-certification – Product storage trial (testing after 3 months storage)	Same batches as for Product certification stored for 3 months
Post-certification monitoring	1 sample every 2,000 tonnes (dry matter) up to 12 per year (3 per quarter)

Rationale and discussion

We consider that the current EU Ecolabel is not completely clear. The limits refer only to the compost component, so it is not immediately clear what testing and declaration would apply if the product did not contain compost. Additionally, there might be some discussion on whether a compost product is or is not exclusively derived from green, garden or park waste, as these may contain contamination not necessarily classed as these.

In considering what limits should be applied, the technical annex details assessments of relevant hazard and risk factors, monitoring principles and the pathogens of possible concern – prions, legionella, aspergillus, clostridia, plant and animal pathogens, salmonella, Helminth ova and E. coli, as well as sporulating bacteria, viruses and fungi. Our conclusion is that monitoring should include *E. coli* and *Salmonella* spp on EU Ecolabel SI, GM and mulches as an absolute requirement. We also conclude that some measures should be considered that might entail additional testing for providing assurance against fungi, viruses and sporulating clostridia.

Some amendments to the sampling regime are proposed, to improve ongoing monitoring that no contamination is occurring.

For more details, see Technical Annex Section A6 of the Preliminary report.

3.4 Criterion 4: Physical Contaminants

	Parameter	Growing media	Soil improvers	Mulch
Current	Physical contaminants	No criterion	In the final product (with mesh size 2 mm), the content of glass, metal and plastic shall be lower than 0,5 % as measured in terms of dry weight.	
Proposal	Physical contaminants	In the final product (with mesh size 2 mm), the content of glass, metal and plastic an shall be lower than 0,5 % as measured in terms of dry weight.		

Assessment and verification

The applicant shall provide the result of tests conducted in accordance with testing procedure indicated in CEN/TS 16202 Sludge, treated biowaste and soil - Determination of impurities and stones

Rationale and discussion

The current EU Ecolabel for SI contains limits for the content of physical contaminants, thus: *"in the final product (with mesh size 2 mm), the content of glass, metal and plastic shall be lower than 0.5% as measured in terms of dry weight.* However, there is no requirement for this in the EU Ecolabel for GM, which seems inappropriate, owing to the risk from injury through handling GM. We propose that this limit be applied to all three products.

3.5 Criterion 5: Nitrogen

	Parameter	Growing media	Soil improvers	Mulch
Current	Total N (% FW)	Information – no limit	No more than 3%	
	Inorganic N (% of total N)	Information – no limit	No more than 20%	
Proposal	Total N (% FW)	Information – no limit	Information – no limit	No more than 3%
	Inorganic N (% of total N)	Information – no limit	Information – no limit	No more than 20%

Assessment and verification

The applicant shall provide the result of tests conducted in accordance with testing procedure indicated in the following table:

Parameter	Test method
Total N (% FW)	EN 16168 - Sludge, treated biowaste and soil - Determination of total nitrogen using dry combustion method
Inorganic N (% of total N)	CEN/TS 16177 - Sludge, treated biowaste and soil - Extraction for the determination of extractable ammonia, nitrate and nitrite

Rationale and discussion

A high level of organic N ensures that N is released only slowly after application. The current EU Ecolabel for SI has limits for nitrogen content: *"the concentration of nitrogen in the product shall not exceed 3 % total N (by weight) and inorganic N must not exceed 20% total N (or organic N ≥ 80%).*

For GM, there is no specific criterion for N, although the information provisions include C/N ratio, which then requires total N determination.

In our opinion, SI application rates vary, and therefore it is the loading of N to the soil that is the key parameter. This is related to both the N content of the SI and the loading rate of SI to the soil. In our view, limits on the N content of the SI would not provide sufficient information for minimising environmental risks from excessive N applications, so the criterion should be limited to one of reporting.

With mulch, the addition of readily available N is not considered appropriate, as the material functions to suppress weed growth and not as a soil improver through fertilization of the soil. In this context, N limits for mulch seem appropriate.

Considering GM, many digestates would not meet the current EU Ecolabel criteria for nitrogen in SI. We would therefore consider that the N content of GM should be measured but have no limits. We would assume that responsible GM producers would not place on the market GM with excessive N contents, as this could cause inhibition and poor performance of the growing medium.

3.6 Criterion 6: Product performance

	Parameter	Growing media	Soil improvers	Mulch
Current	Dry matter (% FW)	No limit	25 % dry matter by fresh weight	
	Organic matter as Loss on Ignition (%DW)	No limit	20 % organic matter by dry weight	
Proposal	Dry matter (% FW)	No less than 25% (*)	No limit but required for information	No less than 25%
	Organic matter as Loss on Ignition (%DW)	XX % organic matter by dry weight (*)	20 % organic matter by dry weight	No less than 20%

(*) except for 100% mineral GM used in closed-cycle recirculating hydroponic systems.

Assessment and verification

The applicant shall provide the result of tests conducted in accordance with testing procedure indicated in the following table:

Parameter	Test method
Dry matter (% FW)	EN 15934 - Sludge, treated biowaste, soil and waste - Calculation of dry matter fraction after determination of dry residue or water content
Organic matter as Loss on Ignition (%DM)	EN 15935 - Sludge, treated biowaste, soil and waste - Determination of loss on ignition

Rationale and discussion

The current EU Ecolabel for SI includes in Criterion 5a a requirement to measure the dry matter and organic matter content of the SI. Limits are set for these parameters (DG Env 2006a).

"Products shall be supplied in a solid form and contain not less than 25 % dry matter by weight and not less than 20 % organic matter by dry weight (measured by loss on ignition). Analytical tests shall be made on a representative sample from a product batch and at least one further representative sample from a different product batch, each of which was produced in the three months before the application date.

Test methods

- Dry matter content: EN 13040

- Organic matter content: EN 13039"

The current SI EU Ecolabel limits for organic matter mean that this imposes a restriction that the SI must contain a significant amount of organic matter.

For GM, dry matter and organic matter content are not specific criteria, but organic matter content is required as part of the information required to be supplied with Criterion 6 – Information provided with the product. In order to measure this parameter, the dry matter content is required as well.

In the development of proposals on mineral ingredients (Criterion 1.2), we have discussed the use of mineral materials in SI, GM and mulches.

- for GM that the amount or source (recycled waste or raw extracted material) of minerals used in these products is reported but have not in that annex proposed any limits. This recognises that some GM used in commercial hydroponic horticulture may comprise wholly mineral media.
- for SI that the current limit for organic matter content (20% of the dry matter content is retained).
- for mulches, that these should not contain inorganic mineral constituents.

In our view, it is important that the dry matter and organic matter contents are recorded as information for SI, GM and mulches. A limit of not less than 25% dry matter effectively means that the product is a solid and not a very wet sludge. This might exclude many digestates, if generated by wet AD processes that do not include extensive dewatering treatments post AD. On this basis, it would be inappropriate to retain this limit for SIs. Therefore we propose that there is no dry matter limit applied to SI, but that a limit of no less than 25% is applied to GM.

Retaining the 20% organic matter limit however would exclude SI composed of high percentages of inorganic components. In Criterion 1.3 we have proposed no limit on inorganic amount. However, imposing an organic matter limit would ensure that SIs are always composed of substantial amounts of recycled organic matter. Further discussion with stakeholders at the AHWG meeting and thereafter is advised in order to resolve this issue. Therefore, we propose to maintain the requirement for a minimum 20% organic matter on a dry weight basis in SI.In terms of GM, a dry matter limit may be appropriate, to prevent wet sludges unsuitable for plant growth being marketed as EU Ecolabel GM.

Moreover, we propose introducing the requirement for a minimum level organic matter on a dry weight basis in GM. Given that the current criteria require organic matter to come from recycled material, this limit would

ensure the inclusion of a substantial amount of recycled material in GM. However, this limit cannot apply to GM comprised wholly of 100% mineral (including mineral wool) used in closed-cycle recirculating hydroponic systems and an exception is proposed in this case. In Criterion 1, the proposal 2 would allow peat in GM under certain conditions, up to a limit of 20% of the GM on a dry weigh basis. In that case, further considerations would be needed to ensure that the proposed minimum level of organic matter is aimed to assure the inclusion of a substantial amount of recycled material in GM.

For mulches, we think it appropriate to have limits for dry matter and organic matter, to ensure mulches are not wet digestates.

3.7 Criterion 7: Viable seeds and weeds

Parameter	Growing media	Soil improvers	Mulch
Current	In the final product, the content of weed seeds and the vegetative reproductive parts of aggressive weeds shall not exceed two units per litre		
Proposal	In the final product, the content of weed seeds and the vegetative reproductive parts of aggressive weeds shall not exceed two units per litre		

Assessment and verification

The applicant shall provide the result of tests conducted in accordance with testing procedure indicated in CEN/TS 16201 Sludge, treated biowaste and soil - Determination of viable plant seeds and propagules

3.8 Criterion 8: Electrical conductivity

Parameter	Growing media	Soil improvers	Mulch
Current	150 mS/m	No limit	
Proposal	150 mS/m	No limit	No limit

Assessment and verification

The applicant shall provide the result of tests conducted in accordance with testing procedure indicated in CEN/TS 15937 Sludge, treated biowaste and soil - Determination of specific electrical conductivity

Rationale and discussion

Electrical conductivity is an indirect measurement of salinity, and therefore an important parameter to be checked for products coming into direct contact with plant roots. However, it is not particularly applicable for

SI or mulches, which are added to or spread on soil, where the soluble elements that constitute the electrical conductivity would quickly dissipate.

The current EU Ecolabel criteria for GM states that, *The electrical conductivity of the products shall not exceed 1,5 dS/m.* This limit is maintained.

3.9 Criterion 9: Biostability

The current EU Ecolabels for SI and GM requires the provision of *"a statement about the stability of organic matter (stable or very stable) by national or international standard".* The question of method is important, but it is beyond the scope of this study to evaluate and propose a standard method for the EU Ecolabel. **However, we do recommend that this is considered in the next EU Ecolabel revision of SI, GM and mulches.**

We have proposed that, as part of the Criterion 3, product storage trials are undertaken as part of the EU Ecolabel pre-certification tests. This would provide some protection against the risk of microbial pathogens growing in stored un-biostabilised products. Therefore, for this revision, we propose that the information statement is retained regarding the stability of organic matter (stable or very stable) by national or international standards (as currently required to accompany EU Ecolabel SI and GM products).

3.10 Criterion 10: Provision of Information

Both the current EU Ecolabel for SI and GM include a requirement to state several parameters and provide information within "Information provided with the product". Some of these have been discussed above. We propose that these should be updated for SI, GM and mulches taking into account the proposals above and our other proposals, and the use of horizontal standard methods.

The proposed requirements are described in the table below. New or amended proposals are highlighted in underlined red.

	Growing media	Soil improvers	Mulch
a	the name and address of the body responsible for marketing		
b	a descriptor identifying the product by type, including the wording		
c	a batch identification code		
d	the quantity (in volume and weight)		
e	the main input materials (those over 5% by volume and by weight) from which the product has been manufactured		
f	the recommended conditions of storage and the recommended 'use by' date;		
g	guidelines for safe handling and use (especially with respect to microbial risks)		
h	a description of the purpose for which the product is intended and any limitations on use. This should include a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles)		
i	pH (Method		
j	Organic C content [EN 15936], total N content [EN16168] and inorganic N [CEN/TS 16177] content and C/N ratio (Method from horizontal)		
k	a statement about the stability of organic matter (stable or very stable) by national or international standard		
l	a statement on recommended methods of use		
m	SI and mulch only	in hobby applications: recommended rate of application expressed in kilograms or litres of product per unit surface (m^2) per annum	
n	Moisture content		
o	For mineral growing media the following declaration should be required: - For all substantial professional markets (i.e. where the applicant's annual sales in any one country in the professional market exceed 30,000 m^3 [or an agreed lower threshold volume]), the applicant shall fully inform the user about available options for the removal and processing of growing media after use. This information shall be integrated in the accompanying fact sheets. - The applicant shall demonstrate that at least 50% [or an agreed higher percentage]) by volume of the growing media waste generated in EU-25 is recycled after use. The applicant should inform the Competent Body, in an annual recycling report, about the option(s) on offer and the response to these options, in particular: - a description of collection, processing and destinations. At any time, plastics should be separated from minerals/organics and processed separately; - an annual overview of the volume of growing media collected (input) and processed (by destination).		

3.11 Hazardous substances (Article 6.6 and 6.7 EU Ecolabel Regulation)

The EU Ecolabel Regulation 66/2010 has introduced new requirements by mean of Article 6.6 and 6.7. which affects to the hazardous substances that might be present in the products:

Article 6.6

The EU Ecolabel may not be awarded to goods containing substances or preparations/mixtures meeting the criteria for classification as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction (CMR), in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures.

Article 6.7

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. No derogation shall be given concerning substances that meet the criteria of Article 57 of Regulation (EC) No 1907/2006 and that are identified according to the procedure described in Article 59(1) of that Regulation, present in mixtures, in an article or in any homogeneous part of a complex article in concentrations higher than 0,1 % (weight by weight). Those measures, designed to amend non-essential elements of this Regulation, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 16).

3.11.1 *Organic constituents*

The organic constituents currently allowed by the EU SI and GM Ecolabels are derived from the processing and/or re-use of waste. In the case of compost, it is covered by Article 2(7)(b) of the Regulation (EC) No 1907/2006 (REACH), which sets out criteria for exempting substances within Annex V of this Regulation from the registration, downstream user and evaluation requirements. According the Guidance provided by ECHA:

This exemption covers compost when it is potentially subject to registration, i.e. when it is no longer a waste, and is understood as being applicable to substances consisting of solid particulate material that has been sanitised and stabilised through the action of micro-organisms and that result from the composting of any bio waste capable of undergoing aerobic decomposition in its entirety.

This explanation is without prejudice to discussions and decisions to be taken under Community waste legislation on the status, nature, characteristics and potential definition of compost, and may need to be updated in the future.

In the case of digestates, it is not clear whether the same exemption applies.

Other wastes not covered by End of waste criteria are out of the scope of the REACH Regulation.

Regarding the substances that might be classified as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction (CMR), in accordance with Regulation (EC) No 1272/2008, compost and digestates might contain heavy metals, and other potential toxic elements (PTE) and organic pollutants that

come from the wastes and sludges which are the inputs of the composting/digestate process. These pollutants are classified as *hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction* if the concentration is above the cut-off values defined in each case. In the case of PTE, EU Ecolabel Decisions allow concentrations that are below the cut-off values set by the CLP Regulation to trigger the classification. In the case of organic pollutants, there are no criteria related to them in the current EU Ecolabel Decisions, because in the previous revision, it was considered that these limit values were irrelevant since these substances did not occur in sludges produced by the list of industries allowed (food and beverage industries). However, the results of the JRC Sampling and Analysis Campaign (included in 4th *Working Document of End-of-waste criteria on Biodegradable waste subject to biological treatment July 2013)* show the presence of POPs in some samples of compost made of source separated bio-waste and green waste. The concentrations of these substances in compost and digestate are also are under the cut-off values set by the Reg (EC) No 1272/2008 CLP to trigger the classification.

3.11.2 *Peat*

According to the REACH Regulations, naturally occurring substances, if they are not chemically modified, are also exempted. This group of substances is characterised by the definitions given in Article 3(39) and 3(40):

The Article 3(39) defines a 'substances which occur in nature' as 'a naturally occurring substance as such, unprocessed or processed only by manual, mechanical or gravitational means, by dissolution in water, by flotation, by extraction with water, by steam distillation or by heating solely to remove water, or which is extracted from air by any means

To our understanding, peat is covered by this exemption.

3.11.3 *Mineral constituents*

Mineral wool might be classified as carcinogenic according CLP Regulation, with some exemptions. This case is further studied in Technical Annex Section A3 of the Preliminary Report and in Criterion 1.3.

Other mineral constituents are covered by the exemption provided by Article 2(7)(b) of the REACH Regulation. The ECHA Guidance clarifies this point as follows:

Minerals which occur in nature are covered by the exemption if they are not chemically modified. This applies to naturally occurring minerals, which have undergone a chemical process or treatment, or a physical mineralogical transformation, for instance to remove impurities, provided that none of the constituents of the final isolated substance has been chemically modified'

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