

# JRC SCIENCE FOR POLICY REPORT

## EU Ecolabel criteria for growing media and soil improvers

*Final Technical Report  
criteria and  
supporting rationale*

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## **Abstract**

Within the EU Ecolabel Regulation (Regulation (EC) No 66/2010), the European Commission carried out a revision of the EU Ecolabel criteria for 'growing media, soil improvers and mulch', set by Commission Decision 2015/2099 and valid until 30 June 2022. The main purpose of the final technical report is to provide background information and reasoning for the proposed EU Ecolabel criteria after revision. Although the proposed criteria were harmonised with the Fertilising Products Regulation (Regulation (EU) No 2019/1009), they set an overall higher ambition level compared to it. In general, the proposed criteria are characterised by five main features. (1) More secondary raw materials were accepted as components of the product. This incentivises circular economy processes and in particular promotes a more resource-efficient use of organic matter and nutrients. (2) The permitted content of contaminants, e.g. heavy metals, was decreased. This improves the safety of the products and it reduces the possible detrimental effects on humans, animals, plants or the environment in general. (3) New principles set by the latest EU strategies were included, with particular reference to biodiversity and soil. (4) The content of impurities, such as plastics, metal and glass, was proposed to the limits set by technical feasibility. (5) A more stringent requirement was set for carbon dioxide emissions produced when manufacturing mineral growing media.

## **Acknowledgements**

This report was developed in the context of the Administrative Arrangement 'Scientific support to the EU Ecolabel and Green Public Procurement (SupELGPP 2018)' between the Directorate-General for Environment (DG ENV) and the Joint Research Centre (JRC).

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## **Executive summary**

The European Commission carried out a revision of the EU Ecolabel criteria for 'growing media, soil improvers and mulch', set by Commission Decision (EU) 2015/2099 and valid until 30 June 2022. The main purpose of the final technical report is to provide background information and reasoning for the proposed EU Ecolabel criteria after revision. The report summarises the main results of all steps and documents of the revision process, which lasted about 17 months and followed the shortened procedure. The revision focused on the EU Ecolabel criteria on aspects that are of environmental concern within a life cycle perspective of all products belonging to the product group.

### ***Policy context***

This report contributes to the ongoing implementation of the EU Ecolabel Regulation (Regulation (EC) No 66/2010). The EU Ecolabel is a voluntary policy tool at the cutting edge of the broader sustainable consumption and production policy in Europe. Via assessable and verifiable criteria, it targets products (within defined product groups) with ambitious environmental performance levels. As of March 2022, valid EU Ecolabel criteria are available for 24 different product groups or services, which have a total of 2 239 licences among them, and which cover almost 89 357 different goods and services.

### ***Key conclusions***

Although no new requirement was added, the wording, substructure and ambition level of the EU Ecolabel criteria were updated to reflect the knowledge gained through interaction with stakeholders, data collection, desk research and policy developments. Whenever applicable, the proposed criteria and terminology were harmonised with the Fertilising Products Regulation (Regulation (EU) 2019/1009) to reduce administrative procedures, decrease the overall application costs, and stimulate the uptake of the product group. Nevertheless, the proposed EU Ecolabel criteria set an overall higher ambition level compared to the Fertilising Products Regulation. In general, the proposed criteria are characterised by five main features. (1) More secondary raw materials were accepted as components of the product. This incentivises circular economy processes, and in particular promotes a more resource-efficient use of organic matter and nutrients. (2) The permitted content of contaminants, e.g. heavy metals, was decreased. This improves the safety of the products and it reduces the possible detrimental effects on humans, animals, plants or the environment in general. (3) New principles set by the latest EU strategies were included, with particular reference to biodiversity and soil. (4) The content of impurities, such as plastics, metal and glass, was proposed to the limits set by technical feasibility. (5) A more stringent requirement was set for carbon dioxide emissions produced when manufacturing mineral growing media.

### ***Related and future JRC work***

As part of the broader implementation of the EU Ecolabel Regulation (Regulation (EC) No 66/2010), this report is related to 23 other reports that are behind 23 currently valid Commission Decisions, each of which defines voluntary EU Ecolabel criteria for the respective product groups or services. The EU Ecolabel criteria may also have an impact on public procurement activities in terms of providing a basis for a number of potential green criteria. Public procurement is an important part of the market because every year over 250 000 public authorities in the European Union spend around 14% of the gross domestic product (around EUR 2 trillion per year) on the purchase of services, works and supplies. The current EU Green Public Procurement criteria for 'public space maintenance' refer to Commission Decision 2015/2099, which sets EU Ecolabel criteria for 'growing media, soil improvers and mulch'. Once the hereby proposed EU Ecolabel criteria for 'growing media and soil improvers' enters into force under a new Commission Decision, the EU Green Public Procurement criteria for 'public space maintenance' must be updated in those parts where it refers to the Commission Decision setting EU Ecolabel criteria for 'growing media and soil improvers'.

# 1 Introduction

Within the EU Ecolabel Regulation<sup>(1)</sup>, the European Commission carried out a revision of the EU Ecolabel criteria for 'growing media, soil improvers and mulch', set by Commission Decision 2015/2099<sup>(2)</sup> and valid until 30 June 2022. The revision was developed in the context of the Administrative Arrangement 'Scientific support to the EU Ecolabel and Green Public Procurement (SupELGPP 2018)' between the Directorate-General for Environment (DG ENV) and the Joint Research Centre (JRC).

The main purpose of the final technical report is to provide background information and reasoning for the revised EU Ecolabel criteria. The report summarises the main results of all steps and documents of the revision process. Supplementary information can be found in the following documents shared with the EU Ecolabelling Board (EUEB) and available on the project website<sup>(3)</sup>:

- Preliminary assessment of the EU Ecolabel criteria set by Commission Decision 2015/2099 (EUEB November 2020)<sup>(4)</sup>;
- Initial analysis of the EU Ecolabel criteria set by Commission Decision 2015/2099 following the shortened procedure (EUEB April 2021)<sup>(5)</sup>;
- First draft of the technical report presented for public consultation in summer 2021<sup>(6)</sup>;
- Second draft of the technical report presented to the EUEB meeting held in November 2021<sup>(7)</sup>;
- Third draft of the technical report presented to the EUEB meeting held in March 2022<sup>(8)</sup>;
- Fourth draft of the technical report with changes implemented after the EUEB meeting held in March 2022<sup>(9)</sup>.

This final technical report consists of the following:

- **Introduction** (Chapter 1). This section describes the methodology used, it reports the reasons of the revision following a shortened procedure, and it briefly underlines the most important features of the Fertilising Products Regulation<sup>(10)</sup>, which is the reference Regulation for this product group. Finally, the introduction describes the product group name and scope.
- **Proposed EU Ecolabel criteria** (Chapter 2). This section goes through all parts of the EU Ecolabel criteria set and reports the rationale that led to the final proposal. For some topics, suggestions for future investigation or/and reasoning about specific additional aspects are also reported.
- **Main changes implemented after the revision** (Chapter 3). This section consists of a comparison of the proposed EU Ecolabel criteria with those currently valid. It stresses the principal changes with the aim of underlining the most important developments of the EU Ecolabel criteria.

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<sup>(1)</sup> EU Ecolabel. Regulation (EC) No 66/2010. Available at [this link](#).

<sup>(2)</sup> Ecological criteria for the award of the EU Ecolabel for growing media, soil improvers and mulch. Commission Decision (EU) 2015/2099. Available at [this link](#).

<sup>(3)</sup> Growing media and soil improvers – JRC website: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/450/home>

<sup>(4)</sup> 'Assessment of the EU Ecolabel criteria for growing media, soil improvers and mulch', Document prepared for the EU Ecolabelling Board. November 2020. Available at this webpage: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/450/documents> with file name 'Preliminary\_Assessment\_EUEB\_Nov2020'.

<sup>(5)</sup> 'EU Ecolabel criteria for growing media, soil improvers and mulch. Update on the criteria revision', Document prepared for the EU Ecolabelling Board. April 2021. Available at this webpage: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/450/documents> with file name 'Initial\_Analysis\_Apr2021'.

<sup>(6)</sup> First Draft Technical Report – EU Ecolabel Criteria for growing media and soil improvers. July 2021. Available at this webpage: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/450/documents> with file name '1st\_Draft\_TR\_Public\_consultation\_Jul2021'.

<sup>(7)</sup> Second Draft Technical Report – EU Ecolabel Criteria for growing media and soil improvers. November 2021. Available at this webpage: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/450/documents> with file name '2nd\_Draft\_TR\_EUEB\_Nov2021'.

<sup>(8)</sup> Third Draft Technical Report – EU Ecolabel Criteria for growing media and soil improvers. March 2022. Available at this webpage: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/450/documents> with file name '3rd\_Draft\_TR\_EUEB\_Mar2022'.

<sup>(9)</sup> Fourth Draft Technical Report – EU Ecolabel Criteria for growing media and soil improvers. March 2021. Available at this webpage: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/450/documents> with file name '4th\_Draft\_TR\_after\_EUEB\_Mar2022'.

<sup>(10)</sup> Rules on the making available on the market of EU fertilising products. Regulation (EU) 2019/1009. Available at [this link](#).



- **Table of comments** (Chapter 4). A table of comments was provided **as a separate document**. The table reports all comments received during all revision steps, JRC responses, and explanations on how they were addressed.

All internet links reported in this document were last visited on 28 May 2022. All documents with hidden links are also available via the *EUR-Lex* website: <https://eur-lex.europa.eu/homepage.html>

## 1.1 Methodology and sources of information

The revision took into account the evolution of technological, economic and legislative aspects along with the consultation with stakeholders (i.e. technical experts, non-governmental organisations (NGOs), representatives of Member States and of the industry). Additionally, the revision focused on the EU Ecolabel criteria on aspects that are of environmental concern within a life cycle perspective of all products belonging to the product group.

The whole process was carried out in accordance with the EU Ecolabel Regulation, following the shortened procedure as laid down in Article 7 (3) and specified in Part C of Annex I to that Regulation.

Stakeholders were continuously involved in the revision process, which started with the preliminary assessment of the EU Ecolabel criteria set by Commission Decision 2015/2099. Stakeholders' initial points of view were collected via a questionnaire available on the internet for 6 weeks between September and October 2020. The results of the survey were presented to the EUEB meeting held in November 2020, and further updates were provided at the EUEB meeting held in April 2021. A consultation with a technical subgroup took place in June 2021. For 2 months (July to September 2021), a first EU Ecolabel criteria proposal was available on the project's website for public consultation. Four versions of the technical report were developed during the last phases of the revision process. All versions provided background information and compared the proposed and existing EU Ecolabel criteria, along with the reasoning behind the proposals. Each draft of the technical report was shared with stakeholders about a month before each EUEB meeting to optimise the exchange of information until the last EUEB meeting held in March 2022.

## 1.2 Justification for the shortened procedure

The preliminary assessment of the EU Ecolabel criteria set by Commission Decision 2015/2099 revealed that stakeholders:

- agreed on the scope of the EU Ecolabel criteria, whose definitions needed to be harmonised with the policy context;
- confirmed that the environmental aspects addressed did not need any change or implementation because the product group has not undergone significant technological changes since the last revision;
- flagged that definitions, limit values and corresponding test methods needed to be updated and harmonised with the Fertilising Products Regulation, which is briefly described in Section 1.3;
- asked for a simplification of the EU Ecolabel criteria.

This information led to a revision following the shortened procedure as defined in Article 7 (3) of the EU Ecolabel Regulation, because the aspects to be updated were considered a “non-substantial revision”.

## 1.3 Fertilising Products Regulation

Regulation (EU) 2019/1009 lays down rules on the making available on the market of EU fertilising products. This Regulation is also known as the Fertilising Products Regulation<sup>(11)</sup> (FPR) and sets the following definitions:

- *‘fertilising product’* means a substance, mixture, micro-organism or any other material, applied or intended to be applied on plants or their rhizosphere or on mushrooms or their mycosphere, or intended to constitute the rhizosphere or mycosphere, either on its own or mixed with another material, for the purpose of providing the plants or mushrooms with nutrient or improving their nutrition efficiency.

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<sup>(11)</sup> Rules on the making available on the market of EU fertilising products. Regulation (EU) 2019/1009. Available at [this link](#).

— ‘EU fertilising product’ means a fertilising product which is CE marked when made available on the market.

One of the objectives of the FPR is to incentivise circularity of resources via the promotion of secondary materials in EU fertilising products. This action saves raw materials and non-renewable resources, and it reduces the dependency on imported materials. Within this framework, the use of compost and digestate, as components of EU fertilising products, is promoted to recirculate organic matter and nutrients. This inclusion accommodates the principle of Article 6 (1) and (2) of the Waste Framework Directive<sup>(12)</sup>, stating that a waste ceases to be a waste if it undergoes recovery operations (including recycling) and meets specific criteria.

By 16 July 2022, there will be a new consolidated version of the FPR<sup>(13)</sup>, due to ongoing amendments, which were taken into account during the development of the revised EU Ecolabel criteria.

The FPR classifies within seven Product Function Categories (PFCs) EU fertilising products according to their function. Additionally, Component Material Categories (CMCs) classify the only materials used as components in any of the EU fertilising products. When a fertilising product is composed of more than one CMC, no intentional chemical reaction or transformation should take place between the different CMCs, and each component used should not pose an unacceptable risk for human health and the environment. To this end, quality, safety and labelling requirements are also defined for each PFC and CMC.

## 1.4 Products with and without CE mark

As mentioned at the beginning of Section 1.3, the scope of the FPR includes only the fertilising products that are CE marked<sup>(14)</sup>, meaning that they are put on the extended single market in the European Economic Area. Conversely, products without the CE mark are only placed on the market in specific Member States and must comply with the national rules of these specific Member States.

The proposed EU Ecolabel criteria were structured in such a way that the EU Ecolabel can be awarded to products with and without the CE mark.

## 1.5 Product group name and scope

The revision process confirmed the scope of the product group, while its name was slightly changed for alignment with the FPR and CEN/TC 223<sup>(15)</sup>, which consider mulch a type of soil improver.

### Proposed product group name, scope and definitions

#### Article 1

The product group ‘growing media and soil improvers’ shall comprise growing media and soil improvers.

#### Article 2

For the purpose of this Decision, the following definitions shall apply:

- (1) ‘growing medium’ means a product other than soil in situ, the function of which is for plants, including algae, or mushrooms to grow in;
- (2) ‘soil improver’ means a product, including mulch, the function of which is to maintain, improve or protect the physical or chemical properties, the structure or the biological activity of the soil to which it is added;
- (3) ‘mulch’ means a type of soil improver used as protective covering placed around plants on the topsoil whose specific functions are to prevent the loss of moisture, control weed growth, help moderate soil temperature and reduce soil erosion.

<sup>(12)</sup> Directive on Waste. Directive 2008/98/EC. Available at [this link](#).

<sup>(13)</sup> Consolidated version of the Fertilising Products Regulation (FPR) laying down rules on the making available on the market of EU fertilising products. Regulation (EU) 2019/1009. Available at [this link](#).

<sup>(14)</sup> CE marking description is available at the following webpage: [https://ec.europa.eu/growth/single-market/ce-marking\\_en](https://ec.europa.eu/growth/single-market/ce-marking_en)

<sup>(15)</sup> ‘CEN/TC 223 Soil improvers and growing media’ is the European Committee for standardization (CEN) Technical Committee (TC) number 223 with title “Soil improvers and growing media”. All standards produced by this technical committee are available at this webpage: [https://standards.cencenelec.eu/dyn/www/?p=205:32:0:::FSP\\_ORG\\_ID.FSP\\_LANG\\_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9](https://standards.cencenelec.eu/dyn/www/?p=205:32:0:::FSP_ORG_ID.FSP_LANG_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9)

Overall, the scope of the EU Ecolabel chiefly corresponds to PFC 3(A) (organic soil improvers) and PFC 4 (growing media) listed under the FPR. In the scope, an explicit reference to organic soil improvers was not made because this expression is not used in the proposed EU Ecolabel criteria, which contain a specific requirement for organic matter and organic carbon in soil improvers (proposed EU Ecolabel criterion 5.3).

The definitions of growing medium and soil improver are fully aligned with the FPR. Conversely, the definition of mulch expresses the specific functions that are performed by this product. This definition is not standardised because mulch is considered a type of soil improver. Components of mulches are typically the same as those used for soil improvers and growing media (peat, compost, bark, shredded wood, leaves, hay, straw), but some gardening applications also use minerals like stones and gravel.

Article 50 of the FPR sets the possibility to incorporate by 16 July 2022 ‘mulch films’ into CMC 9, which refers to polymers other than nutrient polymers. ‘Mulch film’ should not be confused with ‘mulch’, because they are two different products. ‘Mulch film’ is made up of plastics, textiles and other fibres and it is used in agriculture and horticulture as a soil covering layer. Therefore, ‘mulch films’ are not included in the scope of these EU Ecolabel criteria. The similar terminology between these two different products (‘mulch films’ vs ‘mulch’) provides an additional reason to remove the word ‘mulch’ from the name of the product group.

Soil improvers are often confused with fertilisers, but they are two different products. Soil improvers affect plant growth indirectly by improving the physical and biological properties of the soil, such as water retention, aeration and microbial activity and diversity, whereas fertilisers are a source of readily available nutrients and have a direct, short-term effect on plant growth (Veeken et al., 2017). The FPR assigns two distinct Product Function Categories: soil improvers belong to PFC 3, fertilisers belong to PFC 1. Therefore, fertilisers are not included in the scope of these EU Ecolabel criteria.

The Legal Act reports only definitions useful for a clear understanding of the product group name and EU Ecolabel criteria scope. Other definitions were reported in the Annex to better refer to the terminology used.

## **1.6 Key market aspects**

### **1.6.1 General analysis**

The market analysis aimed to outline the European market for growing media, soil improvers and mulches. This analysis attempted to determine the overall size of the market, its share among Member States, and intra- and extra-EU-27 market trade.

Data were collected from EUROSTAT<sup>(16)</sup>, which aggregates the components of growing media, soil improvers and mulches under products for which different terminology has been used. For this reason, the methodology applied for the data analysis was harmonised with that applied in the preliminary report related to the currently valid EU Ecolabel criteria (Rodriguez Quintero et al., 2013). The market analysis focussed on the years from 2017 to 2019, mainly to detect changes that might have affected the market’s performance.

Based on data extracted from PRODCOM, in the EU-27 from 2017 to 2019 the production of mulch (41.85 Mt) was about one order of magnitude higher than the production of growing media (4.36 Mt) and soil improvers (5.29 Mt). Meanwhile, in terms of value in euro, the production of mulch (EUR 72.15 billion) was about two orders of magnitude higher than the production of growing media (EUR 0.63 billion), and about one order of magnitude higher than the production of soil improvers (EUR 1.15 billion).

The apparent consumption in the EU-27 of mulches, growing media and soil improvers was calculated in terms of mass; on average, the apparent consumption of mulches (14.91 Mt) in the EU-27 was one order of magnitude higher than the average consumption of growing media (1.05 Mt) and soil improvers (1.28 Mt). In terms of value in euro, the apparent consumption of mulches (EUR 2.59 billion) in the EU-27 was two orders of magnitude higher than the average consumption of growing media (EUR 0.04 billion) and soil improvers (EUR 0.09 billion).

The analysis of product trading confirms that growing media and soil improvers have a strong internal EU-27 market.

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<sup>(16)</sup> EUROSTAT: <https://ec.europa.eu/eurostat>

### 1.6.2 Use of bio-waste in fertilising products

According to the Waste Framework Directive, bio-waste includes biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants. Across the European Union, the annual potential total bio-waste is estimated as 118-138 million tonnes with an annual increase of 10% predicted<sup>(17)</sup>. With a share of 34%, bio-waste is the largest single component of municipal waste in the EU. (EEA, 2020). Nevertheless, a high proportion of bio-waste ends up in the unsorted waste stream that is landfilled or incinerated. Bio-waste recycling is fundamental for meeting the EU target to recycle 65% of municipal waste by 2035 (Siebert et al., 2020).

Bio-waste has good potential to be used for the production of fertilising products and renewable energy (biogas). According to the survey conducted by the European Compost Network, in total 47.5 million tonnes of bio-waste are treated in 4 274 plants. More than 3 400 composting plants treat 30.5 million tonnes of bio-waste, 12.4 million tonnes of bio-waste are anaerobically digested, and 4.6 million tonnes of bio-waste are treated in combined composting and anaerobic digestion plants<sup>(18)</sup>. The predominant bio-waste treatment process in Europe is still composting.

## 1.7 Key environmental aspects and proposed EU Ecolabel criteria

The key environmental aspects that have been analysed within the current revision are those identified by Rodriguez Quintero et al. (2013, 2015) within the revision process of currently valid EU Ecolabel criteria for growing media, soil improvers and mulch.

**Table 1** provides an overview of how the proposed EU Ecolabel criteria address the key environmental aspects of this product group. Overall, the targeted environmental performance levels of the proposed EU Ecolabel criteria and environmental savings were achieved.

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<sup>(17)</sup> Future steps in bio-waste management in the European Union. COM(2010) 235 final. Available at [this link](#).

<sup>(18)</sup> European Compost Network (ECN) website. Available at: <https://www.compostnetwork.info/policy/biowaste-in-europe/treatment-bio-waste-europe/>

**Table 1.** Key environmental aspects and proposed EU Ecolabel criteria

Environmental aspects	Proposed EU Ecolabel criteria	Explanation about addressed environmental aspects
Circularity of resources	1.1: Organic components of the product	It includes specific by-products and processed bio-waste to promote the circularity of materials. Organic matter and nutrients coming from these sources can be used for the production of fertilising products, thus the proposed EU Ecolabel criterion helps save raw materials, and it reduces the dependency on imports. This approach aims to stimulate the EU internal market, so that products based on compost and digestate can compete with conventional fertilising products, i.e. organo-mineral fertilisers based on virgin materials.
	2.3: Mineral growing media use and after use	It sets the recycling rate of spent mineral growing media at least 70%. This action promotes material circularity.
	3: Organic components and recycled/recovered materials in growing media	Within the production of mineral growing media, the EU Ecolabel criterion sets the minimum use of recycled/recovered material at 30%. This limit promotes material circularity while ensuring the quality of the fertilising product.
Climate change	1: Components	It excludes intentionally added peat as a component of the product, to prevent the release of sequestered carbon into the active carbon cycle (Cleary et al., 2005; Dunn and Freeman, 2011).
	2.1: Energy consumption and CO <sub>2</sub> emissions during the manufacture of mineral growing media	<p>It refers to the manufacture of mineral growing media (mineral wool).</p> <p>The limit value of 11 GJ/tonne of product is 20% lower than the value defined in the best practices for mineral wool production (Table 4.43 in the Manufacture of Glass BREF (Scalet et al., 2013).</p> <p>Additionally, the limit value for the CO<sub>2</sub> emissions is set at 0.7 t CO<sub>2</sub>/tonne of product. This is a value achievable by about 25% of plants analysed in Europe during the last investigation <sup>(19)</sup>.</p>

<sup>(19)</sup> Update of benchmark values for the years 2021 – 2025 of phase 4 of the EU ETS. Benchmark curves and key parameters. Updated final version issued on 12 October 2021. Available at: [https://ec.europa.eu/clima/system/files/2021-10/policy\\_ets\\_allowances\\_bm\\_curve\\_factsheets\\_en.pdf](https://ec.europa.eu/clima/system/files/2021-10/policy_ets_allowances_bm_curve_factsheets_en.pdf)

Environmental aspects	Proposed EU Ecolabel criteria	Explanation about addressed environmental aspects
Acidification Photochemical ozone formation Particular matter formation	2.1: Energy consumption and CO <sub>2</sub> emissions during the manufacture of mineral growing media	It refers to the manufacture of mineral growing media (mineral wool).  The limit value of 11 GJ/tonne of finished product is 20% lower than the value defined in the best practices of mineral wool production (Table 4.43 in Manufacture of Glass (GLS BREF) (Scalet et al., 2013)). The use of less energy decreases the emissions of NO <sub>x</sub> , SO <sub>x</sub> , and VOCs due to the production of energy from fossil fuels. This aspect is relevant because the about 30% of the electricity mix in Europe is still based on fossil fuel <sup>(20)</sup> , and because plants producing mineral wool combust fossil fuels on site (Scalet et al., 2013).
Ecotoxicity Human toxicity	4: Restricted substances 4.1: Limits for heavy metals 4.2: Limits for polycyclic aromatic hydrocarbons (PAHs) 4.3: Restrictions on substances and mixtures classified as hazardous under Regulation (EC) No 1272/2008 of the European Parliament and of the Council 4.4: Restrictions on substances of very high concern (SVHCs) as identified under Regulation (EC) No 1907/2006 of the European Parliament and of the Council 4.5. Microbiological criteria*	Proposed EU Ecolabel criterion 4.1 sets limit values for heavy metals that are generally about 13% to 75% more ambitious than those specified under the FPR ( <b>Table 2</b> ).  The proposed EU Ecolabel criterion 4.2 effectively limits the presence of hazardous substances and mixtures that might have been intentionally added during the production process. This constitutes a safeguard against environmental and health risks for employees and end-users. In order to demonstrate compliance with the 'CLP restriction' criteria <sup>(21)</sup> , the EU Ecolabel applicant shall provide a list of all relevant components and chemicals intentionally added in the production process, together with the relevant safety data sheets or chemical supplier declarations that demonstrate the compliance with the requirement.  The substances of very high concern (SVHCs) are restricted to 0.10% at the level of ingoing materials and substances, rather than at the level of the product. This more stringent approach is possible without any major increase in assessment and verification duties thanks to the requirements set out by the REACH Regulation <sup>(22)</sup> .  PAHs and microbiological criteria are harmonised with the FPR.
Land use Abiotic resources use	1: Components	It excludes intentionally added peat as a component of the product to protect peatlands and prevent the depletion of specific biodiversity hosted in such environments, e.g. pollinators <sup>(23)</sup> (EC, 2021a).

<sup>(20)</sup> Global Energy Review 2020 – The impacts of the Covid-19 crisis on global energy demand and CO<sub>2</sub> emissions. International Energy Agency 2020. Available at [https://iea.blob.core.windows.net/assets/7e802f6a-0b30-4714-abb1-46f21a7a9530/Global\\_Energy\\_Review\\_2020.pdf](https://iea.blob.core.windows.net/assets/7e802f6a-0b30-4714-abb1-46f21a7a9530/Global_Energy_Review_2020.pdf)

<sup>(21)</sup> Classification, labelling and packaging of substances and mixtures. Regulation (EC) No 1272/2008. Available at [this link](#).

<sup>(22)</sup> Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency. Regulation (EC) No 1907/2006. Available at [this link](#).

<sup>(23)</sup> Protection of peatlands in EU. Available at: [https://cinea.ec.europa.eu/news/protecting-our-precious-peat-2021-05-12\\_en](https://cinea.ec.europa.eu/news/protecting-our-precious-peat-2021-05-12_en)

Environmental aspects	Proposed EU Ecolabel criteria	Explanation about addressed environmental aspects
Protection of biodiversity *	2.2: Sources of mineral extraction	It sets stringent requirements for the sourcing of the minerals used in the production of growing media and soil improvers. All extractions must respect stringent rules to minimise the impacts on land use, biodiversity, and abiotic resource exploitation. The proposed EU Ecolabel criterion 2.2 applies the guidelines established under the Bern Convention <sup>(24)</sup> in relation to extraction of minerals from non-EU Member State parties to that Convention.
	2.3: Mineral growing media use and after use	It sets the recycling rate of spent mineral growing media at at least 70%. This requirement decreases the exploitation of abiotic resources and prevents damage to biodiversity.
	3: Organic components and recycled/recovered materials in growing media	In the manufacture of mineral growing media, the proposed EU Ecolabel criterion requires the use of at least 30% recycled/recovered material. This action decreases the exploitation of abiotic resources and prevents damage to biodiversity. A higher percentage would compromise the quality of the product (see Section 2.6).
Waste prevention *	5: Fitness for use 6: Growing media features 7: Provision of information 8: Information appearing on the EU Ecolabel	These proposed EU Ecolabel criteria ensure that the product is handled properly and is suitable for its purpose. The incorrect handling and application of the growing media and soil improvers would generate more waste and resources, resulting in environmental burdens. Correct communication about the features of the product ensures its proper application and prevents the generation of avoidable waste.

\* Non-LCA impact.

<sup>(24)</sup> Convention on the Conservation of European Wildlife and Natural Habitats (ETS No. 104). Available at <https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treaty-num=104>

**Table 2.** Comparison between limit values of heavy metals set by the proposed EU Ecolabel criterion 4.1 (EUEL) and the Fertilising Products Regulation (Regulation (EU) No 2019/1009)

Heavy metal	Organic soil improvers			Growing media		
	EUEL (mg/kg DM)	FPR (mg/kg DM)	Difference (%)	EUEL (mg/kg DM)	FPR (mg/kg DM)	Difference (%)
Cadmium (Cd)	1	2	-100	1.3	1.5	-15
Chromium total (Cr total)	100	NA	NA	310 <sup>(a)</sup> 100 <sup>(b)</sup>	NA	NA <sup>(a)</sup> NA <sup>(b)</sup>
Chromium VI (Cr VI) (*)	NA	2	NA	2 <sup>(a)</sup> NA <sup>(b)</sup>	2	0 <sup>(a)</sup> NA <sup>(b)</sup>
Copper (Cu)	200	300	-50	200	200	0
Mercury (Hg)	0.45	1	-122	0.45	1	-122
Nickel (Ni)	40	50	-25	40	50	-25
Lead (Pb)	100	120	-20	100	120	-20
Zinc (Zn)	300	800	-167	300	500	-67
Inorganic arsenic (As)	10	40	-300	10	40	-300

FPR: Fertilising Products Regulation (Regulation (EU) No 2019/1009); EUEL: proposed EU Ecolabel criteria; DM: Dry Matter;

The difference between limit values set by the legislative tools was calculated as follows:  $\text{Difference (\%)} = \frac{\text{EUEL} - \text{FPR}}{\text{EUEL}} * 100$

NA: Not Applicable; <sup>(a)</sup> applicable only to mineral growing media; <sup>(b)</sup> applicable only to growing media other than mineral growing media.



## 2 Proposed EU Ecolabel criteria

### 2.1 Assessment and verification requirements

#### Proposed requirements

*For the EU Ecolabel to be awarded to a specific product, applicants must comply with each requirement.*

*Specific assessment and verification requirements are indicated under each criterion.*

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

*Competent bodies shall preferentially recognise attestations that are issued by bodies accredited in accordance with the relevant harmonised standard for testing and calibration laboratories, and verifications by bodies that are accredited in accordance with the relevant harmonised standard for bodies certifying products, processes and services.*

*Where appropriate, test and sampling methods other than those indicated for each criterion may be used if the competent body assessing the application accepts their equivalence.*

*Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.*

*Changes in suppliers and production sites pertaining to products to which the EU Ecolabel has been granted shall be notified to competent bodies, together with supporting information to enable verification of continued compliance with the criteria.*

*As a prerequisite, the product must meet the relevant requirements in Regulation (EU) 2019/1009 or the legal requirements of the Member State in which the product is intended to be placed on the market. In the latter case, the applicant shall declare the product's compliance with this requirement.*

*The sampling shall be carried out in accordance with EN 12579 (Soil improvers and growing media – Sampling). Samples are to be prepared in accordance with EN 13040 (Soil improvers and growing media – Sample preparation for chemical and physical tests, determination of dry matter content, moisture content and laboratory compacted bulk density).*

*Once available, test and sampling methods shall be conducted in accordance with the corresponding harmonised standards, the references of which have been published in the Official Journal of the European Union in accordance with Article 13 of Regulation (EU) 2019/1009 <sup>(25)</sup>.*

*For the application year, the sampling and test frequency shall fulfil the requirements set down in Appendix 1. For the following years, the sampling and test frequency of products shall fulfil the requirements set down in Appendix 2. Different sampling and testing frequencies are set for the following types of plants:*

- Type 1: Treatment plants for waste or for animal by-products;*
- Type 2: Product manufacture plants using materials from Type 1 plants; and*
- Type 3: Product manufacture plants not using materials from Type 1 plants.*

*For Type 2 plants, the sampling and test frequencies for the application year and the following years will be the same as the frequencies set for Type 3, if the supplied materials derived from waste/animal by-products comply with the EU Ecolabel criteria for growing media and soil improvers. The applicant shall provide the competent body with the test reports from the suppliers, together with the documentation, to ensure the compliance of the supplied material with the EU Ecolabel criteria. The competent body may recognise the sampling and testing frequencies under national legislation and standards as valid to ensure compliance with the EU Ecolabel criteria of the supplied materials derived from waste or animal by-products.*

*A written confirmation from the applicant that all the criteria are fulfilled shall also be required for the assessment.*

<sup>(25)</sup> Fertilising Products Regulation (FPR). Rules on the making available on the market of EU fertilising products. Regulation (EU) 2019/1009. Available at [this link](#).

### **Proposed requirements**

*An EU fertilising product is a fertilising product that is CE marked when made available on the market. If the product is an EU fertilising product, the following documentation shall be delivered to the competent body: the EU declaration of conformity; the technical documentation; and, where applicable, the documents issued by a notified body involved in the conformity assessment procedure of the product.*

## Proposed Appendix 1 and Appendix 2 for assessment and verification requirements

### Appendix 1

Sampling and test frequencies for the application year

Type of plant	Criterion	Annual input/output	Test frequency
Type 1: Waste/animal by-product treatment plants	4.1 – Limits for heavy metals	Input (t) ≤ 3 000	1 every 1 000 tonnes input material rounded to the next integer
	4.5 – Microbiological criteria		
	5.1 – Stability	3 000 < input (t) < 20 000	4 (one sample every season)
	5.2 – Macroscopic impurities		
	5.3 – Organic matter and dry matter in soil improvers	Input (t) ≥ 20 000	number of analyses per year = amount of annual input material (in tonnes)/10 000 tonne + 1
	5.4 – Viable seeds and plant propagules		
	5.5 – Plant response		
	6 – Growing media features		
	4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	Input (t) ≤ 3 000	1
		3 001 < input (t) < 10 000	2
		10 001 < input (t) < 20 000	3
		20 001 < input (t) < 40 000	4
		40 001 < input (t) < 60 000	5
		60 001 < input (t) < 80 000	6
		80 001 < input (t) < 100 000	7

**Proposed Appendix 1 and Appendix 2 for assessment and verification requirements**

		100 001 < input (t) < 120 000	8
		120 001 < input (t) < 140 000	9
		140 001 < input (t) < 160 000	10
		160 001 < input (t) < 180 000	11
		Input (t) ≥ 180 000	12
Type 2: Product manufacture plants using materials derived from waste/animal by-product, except those that are waste treatment plants	4.1 – Limits for heavy metals 4.5 – Microbiological criteria 5.1 – Stability 5.2 – Macroscopic impurities 5.3 – Organic matter and dry matter in soil improvers 5.4 – Viable seeds and plant propagules 5.5 – Plant response 6 – Growing media features	Output (m <sup>3</sup> ) ≤ 5 000	Representative combined samples from 2 different batches in accordance with EN 12579
		Output (m <sup>3</sup> ) > 5 000	Representative combined samples from 4 different batches in accordance with EN 12579
	4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	Output (m <sup>3</sup> ) ≤ 5 000	Representative combined samples from 1 different batch in accordance with EN 12579
		Output (m <sup>3</sup> ) > 5 000	Representative combined samples from 2 different batches EN 12579
Type 3: Product manufacture plants NOT using materials derived from	4.1 – Limits for heavy metals	Output (m <sup>3</sup> ) ≤ 5 000	Representative combined samples from 1 batch in accordance with EN 12579

### Proposed Appendix 1 and Appendix 2 for assessment and verification requirements

waste/animal by-product	4.5 – Microbiological criteria 5.1 – Stability 5.2 – Macroscopic impurities 5.3 – Organic matter and dry matter in soil improvers 5.4 – Viable seeds and plant propagules 5.5 – Plant response 6 – Growing media features	Output (m <sup>3</sup> ) > 5 000	Representative combined samples from 2 different batches in accordance with EN 12579
	4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	Regardless of the input/output	Representative combined samples from 1 batch in accordance with EN 12579

### Appendix 2

Sampling and test frequency for the following years

Type of plant	Criterion	Annual input/output	Test frequency
Type 1: Waste/animal by-product treatment plants	4.1 – Limits for heavy metals	Input (t) ≤ 1 000	1
	4.5 – Microbiological criteria 5.1 – Stability 5.2 – Macroscopic impurities 5.3 – Organic matter and dry matter in soil improvers 5.4 – Viable seeds and plant propagules 5.5 – Plant response	Input (t) > 1 000	number of analyses per year = amount of annual input material (in tonnes)/10 000 tonne + 1  Minimum 2 and maximum 12

**Proposed Appendix 1 and Appendix 2 for assessment and verification requirements**

	6 – Growing media features		
	4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	Input (t) ≤ 10 000	0.25 (once every 4 years)
		10 001 < input (t) < 25 000	0.5 (once every 2 years)
		25 001 < input (t) < 50 000	1
		50 001 < input (t) < 100 000	2
		100 001 < input (t) < 150 000	3
		150 001 < input (t) < 200 000	4
		200 001 < input (t) < 250 000	5
		250 001 < input (t) < 300 000	6
		300 001 < input (t) < 350 000	7
		350 001 < input (t) < 400 000	8
		400 001 < input (t) < 450 000	9
		450 001 < input (t) < 500 000	10
		500 001 < input (t) < 550 000	11
		Input (t) ≥ 550 000	12
Type 2: Product manufacture plants using materials derived from waste/animal by-product, except those	4.1 – Limits for heavy metals 4.5 – Microbiological criteria	Output (m <sup>3</sup> ) ≤ 5 000	Representative combined samples from 1 different batch in accordance with EN 12579

**Proposed Appendix 1 and Appendix 2 for assessment and verification requirements**

that are waste treatment plants	5.1 – Stability 5.2 – Macroscopic impurities 5.3 – Organic matter and dry matter in soil improvers 5.4 – Viable seeds and plant propagules 5.5 – Plant response 6 – Growing media features	Output (m <sup>3</sup> ) > 5 000	Representative combined samples from 2 different batches in accordance with EN 12579
	4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	Output (m <sup>3</sup> ) ≤ 15000	Representative combined samples from 1 batch in accordance with EN 12579, once every 4 years
		15000 < Output (m <sup>3</sup> ) < 40 000	Representative combined samples from 1 batch in accordance with EN 12579, every two years
		Output (m <sup>3</sup> ) ≥ 40 000	Representative combined samples from 1 batch in accordance with EN 12579, every year
Type 3: Product manufacture plants NOT using materials derived from waste/animal by-product	4.1 – Limits for heavy metals 4.5 – Microbiological criteria 5.1 – Stability 5.2 – Macroscopic impurities 5.3 – Organic matter and dry matter in soil improvers 5.4 – Viable seeds and plant propagules	Regardless of the input/output	Representative combined samples from 1 batch in accordance with EN 12579

**Proposed Appendix 1 and Appendix 2 for assessment and verification requirements**

	5.5 – Plant response 6 – Growing media features		
	4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	Regardless of the input/output	Representative combined samples from 1 batch in accordance with EN 12579, once every 4 years



## Rationale

This part of the Annex to the Legal Act refers to the different types of evidence (e.g. declarations, test reports) that are considered relevant proof of compliance with the proposed EU Ecolabel criteria. This text establishes the framework and general rules for verification procedures so that they do not need to be repeated in the assessment and verification text under each proposed EU Ecolabel criterion.

When specific evidence is required from the supply chain of the analysed product, the supplier can directly submit the evidence to the competent body to avoid any leak of commercially sensitive information.

When evidence is required from tests or analyses, these should preferentially be carried out by laboratories that are accredited in accordance with relevant harmonised (ISO or EN) standards. However, this may not always be possible and in some cases it may be satisfactory to accept evidence from in-house testing or testing by third parties that are only accredited with relevant national standards. The same situation applies to test reports.

When in a particular proposed EU Ecolabel criterion the assessment and verification text specifies a test method, the applicant should follow this specific method, unless they can demonstrate to the competent body that an alternative method used is capable of producing equivalent results. In such cases, the justification for equivalence must be clearly demonstrated and the competent body should share this knowledge with other competent bodies.

Even in cases where, for a particular proposed EU Ecolabel criterion, evidence is provided exactly in accordance with the specific assessment and verification text, the competent body can request further information, to visit the site and even to consider independent means of testing and verification. If the applicant objects to such actions, this could potentially jeopardise the awarding of the EU Ecolabel.

For any criteria that relate to supplied chemicals or materials, it is understood that:

- suppliers can change over time;
- a supplier can supply multiple different types and grades of chemical/material;
- even for a given supplier and given chemical/material, variations in time are possible depending on the upstream supply chain and other factors.

Consequently, any significant change in the supplied chemicals/materials must be communicated to the competent body and supported by any relevant evidence (e.g. supplier declarations) to demonstrate ongoing compliance with the proposed EU Ecolabel criteria.

The prerequisite makes it clear that the EU Ecolabel licence cannot be awarded to products that do not comply with all applicable legal requirements of the country or countries in which the product is placed on the market.

The reference to the harmonised standards underlines the need to refer to them as soon as they are available. A specific Technical Committee <sup>(26)</sup> is developing new standards which are supposed to be available in 2024.

The European standard EN 12579 specifies methods for sampling soil improvers and growing media for subsequent qualitative and quantitative determination of specific parameters. It outlines the sampling principles to ensure that an adequate part of the product is available for testing. This standard only applies to material in solid form, including pre-shaped media. The standard is intended to be used by manufacturers, buyers and enforcement agencies verifying product claims. The technical dossier should always be up-to-date and it should always show compliance with the proposed EU Ecolabel criteria.

The competent body may recognise the sampling and testing frequencies within the national or regional legislation and standards as valid to ensure the compliance with the EU Ecolabel criteria of the suppliers of waste-derived materials or animal by-products-derived materials.

The required documentation for EU fertilising products does not involve additional work for the applicant, because this is the same documentation produced when a product is CE marked.

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<sup>(26)</sup> 'CEN/TC 223 Soil improvers and growing media' is the European Committee for standardization (CEN) Technical Committee (TC) number 223 with title "Soil improvers and growing media". All standards produced by this technical committee are available at [this link](#).

## 2.2 Overview of the proposed EU Ecolabel criteria

**Table 3** reports a general view of the proposed EU Ecolabel criteria and shows which product category each criterion refers to.

**Table 3.** Overview of the proposed EU Ecolabel criteria for growing media and soil improvers

Criterion	Growing media	Soil improvers
1 – Components	x	x
1.1 – Organic components of the product	x	x
2 – Mineral components	x	x
2.1 – Energy consumption and CO <sub>2</sub> emissions during the manufacture of mineral growing media	x	
2.2 – Sources of mineral extraction	x	x
2.3 – Mineral growing media use and after use	x	
3 – Organic components and recycled/recovered materials in growing media	x	
4 – Restricted substances	x	x
4.1 – Limits for heavy metals	x	x
4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	x	x
4.3 – Restrictions on substances and mixtures classified as hazardous under Regulation (EC) No 1272/2008 of the European Parliament and of the Council <sup>(27)</sup>	x	x
4.4 – Restrictions on substances of very high concern (SVHCs) as identified under Regulation (EC) No 1907/2006 of the European Parliament and of the Council <sup>(28)</sup>	x	x
4.5 – Microbiological criteria	x	x
5 – Fitness for use	x	x
5.1 – Stability	x	x
5.2 – Macroscopic impurities	x	x
5.3 – Organic matter and dry matter in soil improvers		x
5.4 – Viable weed seeds and plant propagules	x	x
5.5 – Plant response	x	x
6 – Growing media features	x	

<sup>(27)</sup> CLP Regulation. Classification, labelling and packaging of substances and mixtures. Regulation (EC) No 1272/2008. Available at [this link](#).

<sup>(28)</sup> REACH Regulation. Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency. Regulation (EC) No 1907/2006. Available at [this link](#).

Criterion	Growing media	Soil improvers
6.1 – Electrical conductivity	x	
6.2 – Sodium content	x	
6.3 – Chloride content	x	
7 – Provision of information	x	x
7.1 – Soil improvers		x
7.2 – Growing media	x	
8 – Information appearing on the EU Ecolabel	x	x

## 2.3 Definitions

### Proposed definitions

For the purposes of this Annex, the following definitions shall apply:

1. 'annual input' means the annual quantity of materials treated in a waste or animal by-product treatment plant;
2. 'annual output' means the annual quantity of products composed of the same components;
3. 'batch' means a quantity of goods manufactured by the same process under the same conditions and labelled in the same manner and is assumed to have the same characteristics;
4. 'bio-waste' means biodegradable garden and park waste, food and kitchen waste from households, offices, restaurants, wholesale, canteens, caterers and retail premises and comparable waste from food processing plants, including similar waste from households collected together with bio-waste;
5. 'component' means the material that is used as an ingredient of the product;
6. 'mineral growing medium' means a growing medium totally composed of mineral components, which is only offered for use for professional horticultural applications, as green walls and/or green roofs;
7. 'organic component' means components composed primarily of carbon and molecules derived from living organisms, other than fossil fuels and materials derived from fossil fuels;
8. 'recovered material' means any material that underwent any recovery operation, including preparing for re-use, recycling and backfilling, but excluding energy recovery and the reprocessing into materials that are to be used as fuels or other means to generate energy;
9. 'recovery' means any operation the principal result of which is waste serving a useful purpose by replacing other materials that would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy;
10. 'recycling' means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes, including the reprocessing of organic material but excluding energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations;
11. 'total organic carbon (TOC)' means quantity of carbon that is converted into carbon dioxide by combustion and which is not liberated as carbon dioxide by acid treatment.

## Rationale

The definitions of bio-waste, recovered material, recovery and recycling were aligned with the Waste Framework Directive <sup>(29)</sup>. Additionally, the definition of bio-waste includes 'similar waste from households collected together with bio-waste', e.g. spent growing media used for indoor plants.

The definition of organic components clarifies the scope of criterion 1.1, and it was developed specifically for this set of criteria, receiving the positive feedback of the stakeholders involved in the revision.

No definition was provided for organic soil improvers because any soil improver, within the scope of the proposed EU Ecolabel criteria, must meet the proposed criterion 5.3 on minimum content of organic matter. **It is therefore logical that the proposed EU Ecolabel criteria target organic soil improvers.**

The definition of **mineral growing media highlights the exclusive use for professional horticultural applications**, such as specific products like green walls and/or green roofs. This restriction was necessary to limit the risk of harmful dust production from mineral growing media when they are handled by amateur gardeners. Professionals know how to handle and use this product, which is usually used in closed-cycle recirculating hydroponic systems. Under these conditions, the risks from inhalation of fibre may be controlled and the spent growing media may be recycled or properly disposed of.

## 2.4 Criterion 1 – Components

### Proposed criterion

This criterion applies to growing media and soil improvers.

The components admitted shall be organic and/or mineral components.

The product shall not contain intentionally added peat.

### Criterion 1.1 – Organic components of the product

The product may contain one or more of the following organic components:

- (a) plants, plant parts or plant extracts, derived from agricultural or forestry activities, having undergone no other processing than cutting, grinding, milling, sieving, sifting, centrifugation, pressing, drying, frost treatment, freeze-drying, extraction with water, supercritical CO<sub>2</sub> extraction, or fiberisation at a temperature not higher than 100°C and without any additives except water. For the purpose of this point, plants include mushrooms and algae and exclude blue-green algae (cyanobacteria);
- (b) food industry factory lime, i.e. a material from the food processing industry obtained by carbonation of organic matter, using exclusively burnt lime from natural sources;
- (c) molasses, i.e. a viscous by-product of the refining of sugar cane or sugar beets into sugar;
- (d) vinasse, i.e. a viscous by-product of the fermentation process of molasses into ethanol, ascorbic acid or other products;
- (e) distillers grains, i.e. by-products resulting from the production of alcoholic beverages;
- (f) lime from drinking water production, i.e. residue that is released by production of drinking water from groundwater or surface water and consists, mainly, of calcium carbonate;
- (g) digestate obtained through anaerobic digestion or compost obtained through aerobic composting of one or more of the materials listed below from 1 to 5.

Organic components (g) can be obtained by processing one or more of the following input materials:

1. bio-waste from separate collection at source, as defined in Directive 2008/98/EC;
2. living or dead organisms or parts thereof that are unprocessed or processed only by manual, mechanical or gravitational means, by dissolution in water, by flotation, by extraction with water, by

<sup>(29)</sup> Waste Framework Directive 2008/98/EC. Available at [this link](#).

## Proposed criterion

steam distillation or by heating solely to remove water, or which are extracted from air by any means, except:

- (a) materials originating from mixed municipal waste;
  - (b) sewage sludge, industrial sludge or dredging sludge;
  - (c) animal by-products or derived products falling within the scope of Regulation (EC) No 1069/2009 of the European Parliament and of the Council <sup>(30)</sup> for which no end point in the manufacturing chain has been determined in accordance with Article 5(2), third subparagraph, of that Regulation;
3. category 2 or category 3 materials or derived products thereof, in accordance with the conditions set out in Article 32(1) and (2) and in the measures referred to in Article 32(3) of Regulation (EC) No 1069/2009, provided that the end point in the manufacturing chain has been determined, in accordance with Article 5(2), third subparagraph, of that Regulation, and reached before placing the product on the market;
4. sludges that comply with both of the following two conditions:
  - I. they are identified as one of the following types of waste <sup>(31)</sup>:
    - 02 03 05: sludges from on-site effluent treatment in the preparation and processing of fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco, conserve production, yeast and yeast extract production, molasses preparation and fermentation;
    - 02 04 03: sludges from on-site effluent treatment in sugar processing;
    - 02 05 02: sludges from on-site effluent treatment in the dairy products industry;
    - 02 06 03: sludges from on-site effluent treatment in the baking and confectionery industry;
    - 02 07 05: sludges from on-site effluent treatment in the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa);
  - II. they are single-source separated, meaning that there has been no mixing with effluents or sludges outside a specific production process.
5. digestate obtained through anaerobic digestion or compost obtained through aerobic composting of any of the materials indicated in points 1, 2, 3 and 4 of this list.

### Assessment and verification

*The applicant shall provide the competent body with the list of all components of the product.*

*The applicant shall provide the competent body with the information about the origin of each organic component of the product and a declaration of compliance with the requirements of Criterion 1 of this Annex.*

### Rationale

An initial part of the proposed EU Ecolabel criterion excluded the use in the product of intentionally added peat. This restriction was set because peat extraction affects valuable habitats for wildlife and contributes to the emission of sequestered carbon into the atmosphere, accelerating climate change (Barrett et al., 2016). The position of the European Commission regarding the protection of biodiversity and the promotion of carbon sequestration is reported in the following policy tools:

- the European Green Deal <sup>(32)</sup> aims to preserve and restore ecosystems and biodiversity, and it targets increasing the EU's climate ambitions for 2030 and 2050;

<sup>(30)</sup> Health rules as regards animal by-products and derived products not intended for human consumption. Regulation (EC) No 1069/2009. Available at [this link](#).

<sup>(31)</sup> Types of wastes and reference codes as identified in Commission Decision 2000/532/EC. Available at [this link](#).

- the EU Biodiversity Strategy for 2030 (EC, 2021a) aims to protect and restore carbon-rich ecosystems and peatlands;
- the 2030 Climate Target Plan<sup>(33)</sup> sets the way to achieve climate neutrality by 2050 and it underlines the need to promote carbon sequestration;
- the EU Soil Strategy for 2030<sup>(34)</sup> promotes the restoration of drained organic soils, like peatlands.

Although peat is largely used as a growing medium, new materials are taking its place on the market due to their lower environmental impacts. These materials are coir, pine bark, wood fibre and, to a lesser extent, green composts (Barrett et al., 2016).

The restriction of peat was limited only to 'intentionally added' material because the consultation with stakeholders revealed the possible presence of peat in compost. Among other feedstock materials, composting plants can receive spent growing media that are usually made with peat. Spent growing media are usually disposed of together with garden waste and other bio-waste. If spent growing media are included in the composting process, peat is not degraded and the final compost still contains peat. Therefore, it is very likely that a soil improver or growing medium made with compost contains peat. Nevertheless, this unintentional use of peat does not promote the negative effects on the environment listed before. Conversely, the use of compost in growing media and soil improvers promotes circularity of organic matter and nutrients, in line with the policy tools listed above.

In the next revision, the reliability, availability and potential use of sustainably sourced peat should be assessed, alongside with the possibility to analyse its performance via measurements and monitoring programmes of internationally recognised third-party certification schemes.

The proposed criterion 1.1 initially lists seven organic components, from (a) to (g), that can be used in the product awarded with the EU Ecolabel. Subsequently, the proposed criterion 1.1 specifies which materials are allowed for the production of the organic component at point (g), namely for the production of digestate and compost. This structure meets the need pointed out by stakeholders to clearly state which materials could be used untreated and which materials could be used after undergoing anaerobic digestion and/or aerobic composting.

Although admitted organic components tend to be aligned with the requirements set by the amended FPR<sup>(35)</sup>, the proposed criterion 1.1 selects specific materials to better meet the ambitions set by the EU Ecolabel Regulation. Some of the accepted materials listed in criterion 1.1 can also be found in specific CMC of the FPR, but others are simply introduced by criterion 1.1. The following reasoning will detail the selection of all materials, which are all secondary materials coming from other human activities.

The organic component of point (a) was mostly aligned with CMC 2, with an additional limitation about the source of plants, plant parts and plant extracts, which can only be derived from agricultural or forestry activities. With this further restriction, the proposed criterion 1.1 avoids the use of material directly coming from natural resources. This is for example the case of moss directly harvested from forests: the FPR allows its use (see CMC 2), whereas the proposed criterion 1.1 does not.

Point (a) of the proposed criterion 1.1, as well as CMC 2, excludes fiberisation processes performed at temperatures higher than 100 °C with additives other than water. This exclusion avoided chemical modification of plants and plant parts and the generation and/or use of substances restricted under the REACH Regulation. Nevertheless, a stakeholder underlined an inconsistency when defining the limit of the threshold temperature as 100 °C. The proposed EU Ecolabel criteria do not report a definition of fiberisation because the expression was completely aligned with CMC 2, and because an official definition was still missing at the time of the technical consultation with stakeholders. A draft definition set within the CEN/TC 223 WG3<sup>(36)</sup> in the context of the FPR was shared by a stakeholder and it is hereby reported: "*fiberisation is a*

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<sup>(32)</sup> The European Green Deal. Com(2019) 640 final. Available at [this link](#).

<sup>(33)</sup> Stepping up Europe's 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people. COM(2020) 562 final. Available at [this link](#).

<sup>(34)</sup> EU Soil Strategy for 2030. Reaping the benefits of healthy soils for people, food, nature and climate. COM(2021) 699 final. Available at [this link](#).

<sup>(35)</sup> Commission Delegated Regulation (EU) 2021/1768 amending, for the purpose of its adaptation to technical progress, Annexes I, II, III and IV to Regulation (EU) 2019/1009 of the European Parliament and of the Council laying down rules on the making available on the market of EU fertilising products. Available at [this link](#).

<sup>(36)</sup> The European Committee for standardization (CEN) Technical Committee (TC) number 223 with title "Soil improvers and growing media" Working Group (WG) 3.

*mechanical-thermal extrusion or steam treatment of wood chips the purpose of which is to generate high pressure and high temperatures up to 150 °C (or higher), breaking the wood chips into wood fibres”.*

The organic components from point (b) to point (f) were aligned with CMC 6 (food industry by-products). Also, the organic components reported in point (g) (digestate and compost) were aligned with the FPR, in particular with CMC 3 (compost) and CMC 5 (digestate other than fresh crop digestate). However, in contrast with the FPR definition, criterion 1.1 allows the use of specific sludges derived from the food industry (see point 4) for the production of digestate and compost. The use of the same sludges was also allowed in the currently valid EU Ecolabel criteria.

Regarding the process of anaerobic digestion and aerobic composting, the FPR sets specific requirements, which are not detailed in criterion 1.1. This omission in the proposed criterion is intended to recognise the different process practices in the Member States, so that products with the CE mark and products without it could be awarded with the EU Ecolabel (see Section 1.4).

During the criteria revision, numerous amendments of the FPR were under development. Among other aspects, these amendments introduced organic materials within specific CMCs. A future revision of the EU Ecolabel criteria should investigate the possibility to use these materials for the production of EU ecolabelled products.

## 2.5 Criterion 2 – Mineral components

### 2.5.1 Criterion 2.1 – Energy consumption and CO<sub>2</sub> emissions during the manufacture of mineral growing media

#### Proposed criterion

This criterion applies to mineral growing media only.

The manufacture of expanded minerals and mineral wool shall fulfil the following energy consumption and CO<sub>2</sub> emissions thresholds:

energy consumption / product ≤ 11 GJ/t product, in primary energy; and

CO<sub>2</sub> emissions / product ≤ 0.7 t CO<sub>2</sub>/t product.

‘Product’ refers to the mineral wool in any of the forms placed on the market (e.g. slabs, cubes, plugs).

The ratio energy consumption/product shall be calculated as an annual average as follows:

$$\text{ratio} \frac{\text{Energy}}{\text{Product}} = \frac{1}{\sum_{i=1}^n \text{Production}_i} \cdot \sum_{i=1}^n \left( F + 2.1 \cdot \text{El}_{\text{grid}} + \left( \frac{H_{\text{cog}}}{\text{Ref } H\eta} + \frac{\text{El}_{\text{cog}}}{\text{Ref } E\eta} \right) \cdot (1 - \text{PES}_{\text{cog}}) \right)_i$$

Where:

- $n$  is the number of years of the period used to calculate the average;
- $i$  is each year of the period used to calculate the average;
- $\text{Production}$  is the production of the mineral wool or expanded minerals in tonnes in the year  $i$ ;
- $F$  is the annual consumption of fuels in the production process in the year  $i$ ;
- $\text{El}_{\text{grid}}$  is the annual electricity consumption from the grid in the year  $i$ ;
- $H_{\text{cog}}$  is the annual consumption of useful heat from cogeneration in the year  $i$ ;
- $\text{El}_{\text{cog}}$  is the annual consumption of electricity from cogeneration in the year  $i$ ;
- $\text{Ref } H\eta$  and  $\text{Ref } E\eta$  are the reference efficiencies for the separate production of heat and electricity as defined in Directive 2012/27/EU <sup>(37)</sup> and calculated in accordance with Commission Delegated Regulation (EU) 2015/2402 <sup>(38)</sup>; and

<sup>(37)</sup> Energy efficiency. Directive 2012/27/EU. Available at [this link](#).



## Proposed criterion

- $PES_{cog}$  is the primary energy saving of the cogeneration plant as defined in the Directive 2012/27/EU, in the year  $i$ .

The ratio CO<sub>2</sub> emissions/production shall be calculated as an annual average as follows:

$$\text{ratio} \frac{\text{CO}_2 \text{ emissions}}{\text{Product}} = \frac{1}{\sum_{i=1}^n \text{Production}_i} \cdot \sum_{i=1}^n (\text{Direct CO}_2 + \text{Indirect CO}_2)_i$$

Where:

- $n$  is the number of years of the period used to calculate the average;
- $i$  is each year of the period used to calculate the average;
- *Production* is the mineral wool production in tonnes in the year  $i$ ;
- *Direct CO<sub>2</sub>* is the CO<sub>2</sub> emissions in accordance with Commission Implementing Regulation (EU) 2018/2066 <sup>(39)</sup>, in the year  $i$ ; and
- *Indirect CO<sub>2</sub>* is the indirect CO<sub>2</sub> emissions due to final energy consumption in the year  $i$ , and shall be calculated in accordance with Commission Delegated Regulation (EU) 2019/331 <sup>(40)</sup>.

The direct CO<sub>2</sub> emissions shall be monitored in accordance with Implementing Regulation (EU) 2018/2066.

The indirect CO<sub>2</sub> emissions shall be monitored in accordance with Article 6 of Delegated Regulation (EU) 2019/331 on free allocation rules.

The period to calculate the ratios energy consumption/product and CO<sub>2</sub> emissions/product shall be the last five years before the submission of the application. If the operation period of the plant is less than five years at the date of the submission of the application, the ratio shall be calculated as an annual average of that operation period, which shall be at least one year.

## Assessment and verification

The applicant shall provide the competent body with a declaration that includes the following information:

- ratio energy consumption (GJ)/product (tonne);
- ratio CO<sub>2</sub> emissions (tonne)/product (tonne);
- direct CO<sub>2</sub> emissions (tonnes) for each year of the period to calculate the average;
- indirect CO<sub>2</sub> emissions (tonnes) for each year of the period to calculate the average;
- fuels consumed, consumption of each fuel (GJ), sub-process(es) of the manufacture process where they are consumed for each year of the period to calculate the average;
- electricity consumption from the grid (GJ final energy) for each year of the period to calculate the average;
- useful heat consumption from cogeneration (GJ final energy) for each year of the period to calculate the average;
- electricity consumption from cogeneration (GJ final energy) for each year of the period to calculate the average;
- reference efficiencies for separate production of heat and electricity;
- primary energy saving (PES) (%) of the cogeneration for each year of the period to calculate the

<sup>(38)</sup> Harmonised efficiency reference values for separate production of electricity and heat. Commission Delegated Regulation (EU) 2015/2402. Available at [this link](#).

<sup>(39)</sup> Monitoring and reporting of greenhouse gas emissions. Commission Implementing Regulation (EU) 2018/2066. Available at [this link](#).

<sup>(40)</sup> Transitional Union-wide rules for harmonised free allocation of emission allowances. Commission Delegated Regulation (EU) 2019/331. Available at [this link](#).



## Proposed criterion

*average; and*

- *identification of fuels used in cogeneration and their share in the fuel mix, for each year of the period to calculate the average.*

*The following documents shall be provided together with the declarations:*

- *annual emissions report in accordance with Implementing Regulation (EU) 2018/2066, for each year of the period to calculate the average;*
- *verification report finding the annual emissions report satisfactory in accordance with Commission Implementing Regulation (EU) 2018/2067<sup>(41)</sup>, for each year of the period to calculate the average;*
- *records of electricity consumption from the grid provided by the supplier, for each year of the period to calculate the average; and*
- *records of the useful heat and electricity consumption from cogeneration, both on-site and purchased, for each year of the period to calculate the average.*

## Rationale

The proposed criterion sets the limit values for energy consumption and CO<sub>2</sub> emissions per tonne of mineral wool produced in any of the forms placed on the market (e.g. slabs, cubes, plugs).

The limit value of the energy consumption was based on the analysis performed in the 'Best Available Techniques (BAT) Reference Document for the Manufacture of Glass' (GLS BREF) (Scalet et al., 2013), which complements the Commission Implementing Decision<sup>(42)</sup> in force. The GLS BREF defines the total energy consumption per finished product as lower than 14 GJ/tonne of finished product (sheet of mineral wool), expressed as primary energy (Table 4.43 in the GLS BREF (Scalet et al., 2013). A level of 80% of this value, which corresponds to 11 GJ/tonne of finished product in primary energy, was proposed as the limit of the energy consumption for the production of slabs, cubes and plugs of mineral wool.

In the energy-to-product ratio, the factor 2.1 complies with Annex IV to the Energy Efficiency Directive<sup>(43)</sup>.

The limit value of CO<sub>2</sub> emissions per product was set at 0.7 CO<sub>2</sub>/t of product, because this value can be met by 25% of the plants in EU (EC, 2021b). This choice is in line with the fact that the EU Ecolabel aims to be awarded to the products with the best environmental performance levels on the market.

The third-party verification process was based on the EU Emissions Trading System (ETS) report for direct CO<sub>2</sub> emissions, and on bills and records for the indirect emissions due to consumption of electricity and heat from the network. The companies should mainly provide information that has already been prepared for the EU ETS.

During the revision, the possibility to promote the use of renewable energies was investigated. The current Renewable Energy Certificates based on Guarantees of Origin (GO) do not allow the same approach in all Member States. Additionally, currently available GO certificates make it difficult to relate the provided carbon intensity value to the specific product intended to be ecolabelled. This is an important aspect to consider in the revision of the criteria because EU-wide recognised certificates or labels could be a valid instrument to incentivise the production and use of renewable energy. The European Commission is already investigating the possibility to establish an EU-wide green label with a view to promoting the use of renewable energy coming from new installations (EC, 2021c).

The next revision should pay particular attention to the regulatory developments related to direct and indirect CO<sub>2</sub> emissions calculation.

<sup>(41)</sup> Verification of data and on the accreditation of verifiers pursuant to Directive 2003/87/EC. Commission Implementing Regulation (EU) 2018/2067. Available at [this link](#).

<sup>(42)</sup> Best available techniques (BAT) conclusions under Directive 2010/75/EU on industrial emissions for the manufacture of glass. Commission Implementing Decision 2012/134/EU. Available at [this link](#).

<sup>(43)</sup> Energy efficiency. Directive (EU) 2018/2002. Available at [this link](#).

## 2.5.2 Criterion 2.2 – Sources of mineral extraction

### Proposed criterion

This criterion applies to growing media and soil improvers.

The extraction of minerals to be used as a component of an EU Ecolabel growing medium and soil improver shall only take place on sites that are covered by the following documentation:

- an environmental impact assessment and, where relevant, a report in accordance with Directive 2014/52/EU <sup>(44)</sup>;
- a valid authorisation for the extraction activity issued by the relevant regional or national authority;
- a rehabilitation management plan associated with the authorisation for the extraction activity;
- a map indicating the location of the quarry;
- a declaration of conformity with Regulation (EU) No 1143/2014 <sup>(45)</sup>;
- a declaration of conformity with Council Directive 92/43/EEC <sup>(46)</sup> (habitats) and Directive 2009/147/EC <sup>(47)</sup> (birds).

Regarding the last point above, in cases where extraction sites are located in Natura 2000 network areas, composed of special areas of conservation referred to in Article 3 of Directive 92/43/EEC and special protection areas as defined in Article 4 of Directive 2009/147/EC, extraction activities shall have been assessed and authorised in accordance with the provisions laid down in Article 6 of Directive 92/43/EEC and have taken into account the relevant European Commission guidance document <sup>(48)</sup>.

Also regarding the last point above, in cases where extraction sites are located outside the EU, if materials are extracted from areas officially nominated as candidates for or adopted as: areas of special conservation interest; part of the Emerald network pursuant to Recommendation No 16 (1989) and Resolution No 3 (1996) of the Convention on the Conservation of European Wildlife and Natural Habitats <sup>(49)</sup>; or protected areas designated as such under the national legislation of the sourcing/exporting countries, the extraction activities shall have been assessed and authorised in accordance with provisions that provide assurances equivalent to Directives 92/43/EEC and 2009/147/EC.

#### Assessment and verification

*The applicant shall provide a declaration of compliance with this requirement issued by the competent authorities, or a copy of the authorisations issued by the competent authorities, and any other required declarations and documentation.*

*The rehabilitation management plan shall include the objectives for the rehabilitation of the quarry, the conceptual final landform design, including the proposed post-quarry land use, details on the implementation of an effective revegetation programme and details of an effective monitoring programme to assess the performance of rehabilitated areas.*

*If industrial or construction mineral extraction activities have been carried out in Natura 2000 network areas (in the Union), the Emerald network or protected areas designated as such under national legislation of the sourcing/exporting countries (outside the Union), the applicant shall provide a declaration of compliance with this requirement issued by the competent authorities or a copy of their authorisation issued by the competent authorities.*

<sup>(44)</sup> Assessment of the effects of certain public and private projects on the environment. Directive 2014/52/EU. Available at [this link](#). This Directive amends Directive 2011/92/EU, whose consolidated text is available at [this link](#).

<sup>(45)</sup> Prevention and management of the introduction and spread of invasive alien species. Regulation (EU) No 1143/2014. Available at [this link](#).

<sup>(46)</sup> Conservation of natural habitats and of wild fauna and flora. Directive 92/43/EEC. Available at [this link](#).

<sup>(47)</sup> Conservation of wild birds. Directive 2009/147/EC. Available at [this link](#).

<sup>(48)</sup> Guidance document on non-energy mineral extraction and Natura 2000: a summary. European Commission, Directorate-General for Environment. Available at <https://data.europa.eu/doi/10.2779/985239>

<sup>(49)</sup> Convention on the conservation of European wildlife and natural habitats (OJ L 38, 10.2.1982, p. 3). Available at [this link](#).

## Rationale

The proposed criterion is fully harmonised with criterion 1.1 of the EU Ecolabel criteria for hard covering products <sup>(50)</sup>, whose rationale is reported in Donatello et al. (2021). In general, the proposed criterion ensures that the minerals used are sourced from quarries which comply with specific requirements, so that particular documentation can be provided.

The first document required is an *environmental impact assessment* of the extraction activity from the quarry where the material is sourced. The document shall comply with the consolidated text of the Environmental Impact Assessment Directive <sup>(51)</sup>. Nevertheless, there are some cases where the environmental impact assessment is not available:

- (a) the quarry was established before the entry into force of the Environmental Impact Assessment Directive, or even before the entry into force of the Directive on Strategic Environmental Assessments <sup>(52)</sup>;
- (b) the screening procedure showed that the environmental impact assessment was not required.

In cases (a) and (b), the result of the screening procedure should be submitted (Donatello et al., 2021). Besides the legal framework, the European Commission published three reports as guidance on specific stages of the environmental impact assessment process: screening, scoping, and environmental impact assessment report (EC, 2017a, b, c).

The second and the third documents required for compliance with the proposed criterion are the *authorisation for the extraction activity* and the *rehabilitation management plan*. The former certifies the legal extraction of the material, whereas the latter aims to describe the appropriate recovery of the areas where extraction activities take place. The rehabilitation management plan is usually part of projects in the Non-Energy Extractive Industry, and it is required for the authorisation of the extraction activity (EC, 2019). Although rehabilitation may consider only the end of the quarry life, in all quarries some degree of progressive rehabilitation should be applied. The rehabilitation management plan contains:

- the objectives for the rehabilitation of the quarry;
- a conceptual final landform design, with the proposed post-quarry land use, and details on the implementation of an effective revegetation programme;
- a monitoring programme for assessing the performance of the rehabilitated areas.

A successful rehabilitation management plan achieves at least the following main goals:

- *Acceptable post-quarrying land use suitability*. Rehabilitation aims to achieve a stable landform with land capability and/or agricultural suitability similar to that prior to quarry activities, unless other beneficial land uses are predetermined and agreed. This will be achieved by setting rehabilitation criteria assessed with specific monitoring requirements.
- *Creation of stable landform*. Disturbed land will be rehabilitated so that it is self-sustaining, or, if maintenance is required, it is consistent with the agreed post-quarry land use.
- *Preservation of downstream water quality*. Water quality, during or after the use of the quarry, will be acceptable for users downstream of the site.

The mentioned goals can be achieved with:

- revegetation techniques that acknowledge altered landform and soil conditions;
- soil management techniques like stripping, stockpiling, re-spreading and appropriate weed control;
- a monitoring programme assessing the construction of a successful outcome.

Within the review of the progress in the implementation of the EU green infrastructure strategy <sup>(53)</sup>, the European Commission has developed guidance on integrating ecosystems and their services into decision-

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<sup>(50)</sup> EU Ecolabel criteria for hard covering products. Commission Decision 2021/476. Available at [this link](#).

<sup>(51)</sup> Assessment of the effects of certain public and private projects on the environment. Directive 2011/92/EU. Available at [this link](#).

<sup>(52)</sup> Assessment of the effects of certain plans and programmes on the environment. Directive 2001/42/EC. Available at [this link](#).

making<sup>(54)</sup>. Section 2.3 of Part 1<sup>(55)</sup> of the guidance document outlines principles for the successful integration of ecosystems services. It establishes the directions for the 'mitigation hierarchy' that ensures no net loss of healthy ecosystems and their services. The mitigation hierarchy must be implemented with full care and transparency to effectively address impacts on the environment. The mitigation hierarchy follows four measures:

- **Avoidance:** Identifying and completely avoiding detrimental impacts from the outset of a process. This includes monitoring and planning efforts before measures are implemented.
- **Minimisation:** Reducing the extent of unavoidable impacts to ecosystems. This includes the duration and intensity of direct, indirect and cumulative impacts.
- **Rehabilitation/Restoration:** Rehabilitating ecosystems that have been degraded or restoring ecosystems that have been cleared following impacts that could not be avoided or minimised.
- **Offsetting:** Compensating for all impacts to ecosystems that could not be avoided, minimised or restored.

Raw material extraction should be covered by appropriate mitigation measures that aim at minimising biodiversity losses and guarantee appropriate recovery of the areas where extraction activities take place.

The fourth required document is a *map describing the location of the quarry*, while the fifth document is a *declaration of conformity with the Regulation on Invasive Alien Species*, whose introduction and spreading must be prevented and/or managed by the rehabilitation and revegetation programmes. Invasive alien species are any live specimen of animals, plants, fungi or micro-organisms introduced outside their natural range, whose spread threatens or adversely impacts upon biodiversity and related ecosystem services.

Invasive alien species are considered among the principal causes of biodiversity loss (Gentili et al., 2021). Quarries risk becoming colonised by invasive alien species, due to their easy adaptation to the surroundings, which sometimes prevents the development of native species. This causes a negative impact on the local biodiversity. Many invasive species that grow in aggregate quarries produce seeds that are exported with the aggregate material. Once on the construction sites, invasive alien species are dispersed further into natural ecosystems, resulting in their damage. In addition to ecological damage, invasive alien species are a potential hazard for infrastructure, because they can physically damage roads and pipelines, for instance when seeds develop into plants (Donatello et al., 2021).

The sixth document required for compliance with the proposed criterion is a *declaration of conformity with the Habitats and Birds Directives*. The Habitats Directive aims to promote the maintenance of biodiversity, taking into account economic, social, cultural and regional requirements. The Birds Directive aims to protect all of the 500 wild bird species naturally occurring in the European Union. These two Directives are the cornerstone of Europe's nature conservation policy, which has established the EU-wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

Natura 2000 is the largest coordinated network of protected areas in the world, covering 18% of the EU's land area and more than 8% of its marine territory. It is not a system of strict nature reserves from which all human activities are excluded. Although Natura 2000 consists of protected natural reserves, most of the land remains privately owned. The conservation approach targets sustainable use of the areas, largely centred on people working with nature. In any case, Member States must ensure that the areas are managed in a sustainable manner, both ecologically and economically.

To this end, the extraction of raw materials from Natura 2000 sites to make EU Ecolabel products is not expressly forbidden, as it was already allowed by currently valid EU Ecolabel criteria for this product group.

The proposed criterion sets the possibility to supply raw materials from outside the EU. Consequently, equivalent documentation should be provided to avoid damage of the protected areas outside the EU. To this end, specific reference is made to Emerald sites and general reference is made to nationally protected areas.

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<sup>(53)</sup> Review of progress on implementation of the EU green infrastructure strategy. COM(2019) 236 final. Available at [this link](#).

<sup>(54)</sup> EU Guidance document on integrating ecosystems and their services in decision-making. Summary, Part 1, Part 2, Part 3. SWD(2019) 305 final. Available at <https://ec.europa.eu/environment/nature/ecosystems/>

<sup>(55)</sup> EU Guidance document on integrating ecosystems and their services in decision-making. Part 1. SWD(2019) 305 final. Available at [https://ec.europa.eu/environment/nature/ecosystems/pdf/SWD\\_2019\\_305\\_F1\\_STAFF\\_WORKING\\_PAPER\\_EN\\_V2\\_P1\\_1042629.PDF](https://ec.europa.eu/environment/nature/ecosystems/pdf/SWD_2019_305_F1_STAFF_WORKING_PAPER_EN_V2_P1_1042629.PDF)

The proposed criterion is also in line with the EU Soil Strategy <sup>(56)</sup>, which targets prevention of soil and land degradation.

### 2.5.3 Criterion 2.3 – Mineral growing media use and after use

#### Proposed criterion

This criterion is applicable to mineral growing media only.

The applicant shall offer customers a structured collection and recycling service, which may use third-party service providers. The collection and recycling service shall cover a minimum of 70% of the applicant sales, expressed in volume, across the Union.

#### Assessment and verification

*The applicant shall provide the competent body with a declaration that the mineral growing media are only offered for use in professional horticultural applications. A statement about the professional horticultural application of the product shall be included in the information provided to the end-user.*

*The applicant shall inform the competent body about the option(s) on offer of structured collection and recycling services and the results of the options implemented. In particular, the applicant shall provide the following documentation and information:*

- *contract documentation between the manufacturer and the service providers;*
- *description of collection, processing and destinations;*
- *annual overview of the total sales volume of growing media in the European Union Member States and an annual overview of the sales volumes in areas of those Member States where collection and processing are on offer.*

*In the case of new entrants, an estimation of the annual overview of the total sales volume of growing media in the EU Member States, and an estimation of the annual overview of the sales volumes in areas of those Member States where collection and processing are on offer, shall be provided. Real data shall be provided one year after the EU Ecolabel licence is awarded.*

#### Rationale

The proposed criterion sets the minimum recycling rate of the applicant's sales.

The ambition level of the proposed recycling rate could not be raised because the consultation with the industry association revealed that only one company in the market can achieve higher values. Most of the actors in the market have recycling rates below the proposed limit. The next revision should assess the ambition level of the recycling rate, which can be increased when more companies improve their performance levels. In this way, the EU Ecolabel will be achievable for more than one company.

In the previous revision of the criteria (Rodriguez Quintero et al., 2013, 2015), the investigation into growing media made of blends of organic and mineral components revealed that the technological development did not allow a proper recycling of the material. After some years, research is still ongoing, so the recycling of growing media made of blends of organic and mineral components is still not feasible.

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<sup>(56)</sup> EU Soil Strategy for 2030 – Reaping the benefits of healthy soils for people, food, nature and climate. COM(2021) 699 final. Available at [this link](#).

## 2.6 Criterion 3 – Organic components and recycled/recovered materials in growing media

### Proposed criterion

This criterion applies to growing media only.

Growing media shall consist of organic or recycled/recovered content, in accordance with either of the following:

- (a) the growing medium shall consist of at least 30% of organic components (expressed as volume of organic components per total volume of the product);
- (b) the growing medium shall consist of mineral components manufactured from a process using at least 30% of recycled/recovered materials (expressed as the dry weight of recycled/recovered materials per total dry weight of the input materials).

#### Assessment and verification

*The applicant shall declare the following information:*

- *for case (a): volume of organic components declared in Criterion 1 per total volume of the product;*
- *for case (b): dry weight of recycled/recovered materials per total dry weight of the input materials.*

*For case (b), the applicant shall also declare the following information about the mineral components:*

- *identification of raw material inputs, reporting amounts as dry weight and origins;*
- *identification of recycled/recovered material inputs, reporting amount and origin, which is to be supported by invoice or verification documents provided by the supplier of the material.*

### Rationale

The proposed criterion sets the minimum requirements for recycled/recovered content or organic content in growing media.

Available technologies in the market reflect the investigation performed in the previous revision (Rodriguez Quintero et al., 2013, 2015). The minimum share of organic component content in growing media was based on common formulations of expanded minerals and organic constituents, which vary from 1:1 v/v (volume ratio) to 1:3 v/v. Meanwhile, the minimum percentage of recycled material used in the production of mineral growing media was set to 30%, because a consultation with the industry association revealed that higher percentages would still affect the quality of the product, and would hinder the compliance of the product with the Note Q of the CLP Regulation <sup>(57)</sup>.

The proposed criterion is also in line with the EU Soil Strategy <sup>(58)</sup>, which targets prevention of soil and land degradation.

<sup>(57)</sup> Classification, labelling and packaging of substances and mixtures. Regulation (EC) No 1272/2008. Available at [this link](#).

<sup>(58)</sup> EU Soil Strategy for 2030 – Reaping the benefits of healthy soils for people, food, nature and climate. COM(2021) 699 final. Available at [this link](#).

## 2.7 Criterion 4 – Restricted substances

All the subcriteria of the proposed criterion 4 are in line with the EU Soil Strategy, which is intended to prevent soil pollution.

During the revision, *veterinary medicines and pesticides* were investigated to assess the potential addition of specific requirements on these contaminants of emerging concern. Nevertheless, any further action in this regard was postponed to the next revision because:

- the literature lacks of a complete analysis on pesticides in compost and digestate. When only few pesticides were investigated, they resulted to be of low concern for compost/digestate quality (Wood, 2019);
- anaerobic digestion, especially if combined with a pasteurisation step, may partially remove antibiotics and other pharmaceutical compounds (Huygens and Saveyn, 2022);
- mitigation of contaminants of emerging concern to the environment would be more effective if the focus were moved to upstream policies rather than the use of manure as secondary resource (Huygens and Saveyn, 2022);
- more information is still needed to understand and evaluate certain pharmaceuticals as regards their environmental concentrations and the resulting levels of risk (EU Strategy on pharmaceuticals in the environment <sup>(59)</sup>).

### 2.7.1 Criterion 4.1 – Limits for heavy metals

#### Proposed criterion

This criterion applies to growing media and soil improvers.

#### Criterion 4.1(a) – Limits for heavy metals in soil improvers

The content of the following elements in the product shall be lower than the values shown in Table 2, measured in terms of dry matter (DM) of the product.

Table 2. Heavy metals limits for soil improvers

Heavy metal	Maximum content in the product (mg/kg DM)
Cadmium (Cd)	1
Chromium total (Cr total)	100
Copper (Cu)	200
Mercury (Hg)	0.45
Nickel (Ni)	40
Lead (Pb)	100
Zinc (Zn)	300
Inorganic Arsenic (As)	10

<sup>(59)</sup> European Union Strategic Approach to Pharmaceuticals in the Environment. COM(2019) 128 final. Available at [this link](#).



## Proposed criterion

### Criterion 4.1(b) – Limits for heavy metals in growing media

The content of the following elements in the product shall be lower than the values shown in Table 3, measured in terms of dry matter (DM) of the product.

Table 3. Heavy metal limits for growing media

Heavy metal	Maximum content in the product (mg/kg DM)	
	Mineral growing media	Growing media other than mineral growing media
Cadmium (Cd)	1.3	1.3
Chromium total (Cr total)	310	100
Chromium VI (Cr VI)	2	Not applicable
Copper (Cu)	200	200
Mercury (Hg)	0.45	0.45
Nickel (Ni)	40	40
Lead (Pb)	100	100
Zinc (Zn)	300	300
Inorganic arsenic (As)	10	10

#### Assessment and verification

*The applicant shall provide the competent body with the reports of tests conducted in accordance with existing EN standards or testing procedures that are performed in a reliable and reproducible manner.*

*For chromium total content, the applicant shall provide the competent body with reports of tests conducted in accordance with the testing procedure indicated in EN 13650.*

*In growing media of solely mineral components, the limit for nickel shall refer to its bioavailable content.*

#### Rationale

The proposed requirements aim to prevent or minimise the risk of human exposure to heavy metals during the lifetime of the product, and they prevent the possible release of these substances into the environment.

The proposal is based on analysis of the best practices established by relevant quality assurance standards (WRAP, 2014; ECN, 2018b; RAL 2018) and legal requirements across several Member States. The information was contrasted with information describing parts of the products currently awarded with the EU Ecolabel to check the feasibility of increasing the ambition level. In Section 1.7, **Table 2** reports a comparison between limit values of heavy metals set by the proposed EU Ecolabel criterion 4.1 and the FPR. The proposed limit values are always lower than those established by the FPR, with the exception of copper (Cu) in growing media, for which the same value is required (**Table 2**). The proposed limit values accommodate the characteristics of products that are currently awarded with the EU Ecolabel and whose features were shared during the revision process.



- *Cadmium (Cd)*. The value proposed for soil improvers was derived from the currently valid EU Ecolabel criteria, whereas the value proposed for growing media was aligned with instructions provided by the European Compost Network (ECN, 2018b). This proposal resulted in a different ambition level for soil improvers and growing media, as reported by the currently valid EU Ecolabel criterion and as set by the FPR.
- *Chromium (Cr)*. The proposed values address the content of total chromium (Cr total) and hexavalent chromium (Cr VI) in different types of products. Cr VI is considered the parameter causing the greatest concern. The consultation with stakeholders revealed technical challenges when measuring Cr VI in organic soil improvers and growing media other than mineral growing media. Additionally, the organic matter in these products facilitates the change over time of the oxidation state of Cr, due to changing conditions like humidity and pH. These challenges led to the setting of limit values for Cr total for soil improvers and growing media, and the request for an additional requirement for Cr VI only for mineral growing media.
  - For soil improvers and growing media other than mineral growing media the limit of Cr total (100 mg/kg DM) was based on the national requirements, whose lower range is 50-100 mg/kg DM;
  - For mineral growing media, the limit for Cr total (310 mg/kg DM) was based on the results of test reports of certified laboratories for products currently awarded the EU Ecolabel. Meanwhile, the limit for Cr VI was aligned with the FPR (2 mg/kg DM).

Setting limit values for Cr total allowed the control of all species of Cr that are considered of most concern, i.e. Cr VI and Cr III. Additionally, the FPR does not currently set any threshold for Cr total, but it obliges manufacturers to report the Cr total content if it is higher than 200 mg/kg DM.

- *Copper (Cu)*. The limit value for Cu was increased compared to the currently valid criteria (100 mg/kg DM), because it was considered a macronutrient. The proposed limit value was aligned with requirements set by the FPR for growing media (200 mg/kg DM).
- *Mercury (Hg) and Nickel (Ni)*. The proposed limit values were aligned with the requirements set by the European Compost Network (ECN, 2018b).
- *Lead (Pb)*. Only the limit value for growing media was changed, and aligned with the value set by the currently valid criteria for soil improvers (100 mg/kg DM).
- *Arsenic (As)*. The proposed limit value (10 mg/kg DM) was based on the lowest value set by the national best practices (10-50 mg/kg DM). Although currently valid EU Ecolabel criteria do not require the limiting of As, older criteria <sup>(60)</sup> and the FPR set this limit. In Europe, there are regions with soil naturally rich in As. Nevertheless, setting a different value for materials coming from specific areas would require setting up a verification system for the origin of the product or its components. The consultation with stakeholders revealed that this operation was not feasible with the time and resources available during this specific revision.

Within the framework of the FPR, CEN/TC 223 <sup>(61)</sup> is developing harmonised standards for testing methods. If the standards are not available by 16 July 2022, the date of publication of the FPR's consolidated version, CEN will adopt technical specifications in the form of European standardisation deliverables, which could help manufacturers to prove conformity of their products until harmonised standards are publically available. A possible deadline for adoption of the harmonised standards is set on 1 December 2024 <sup>(62)</sup>. Due to the dynamic nature of the work, details about the recommended test methods will be reported in the User Manual.

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<sup>(60)</sup> Ecological criteria and the related assessment and verification requirements for the award of the Community eco-label to soil improvers. Commission Decision 2006/799/EC. Available at [this link](#).  
Ecological criteria and the related assessment and verification requirements for the award of the Community eco-label to growing media. Commission Decision 2007/64/EC. Available at [this link](#).

<sup>(61)</sup> 'CEN/TC 223 Soil improvers and growing media' is the European Committee for standardization (CEN) Technical Committee (TC) number 223 with title "Soil improvers and growing media". All standards produced by this technical committee are available at this webpage: [https://standards.cencenelec.eu/dyn/www/f?p=205:32:0::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9](https://standards.cencenelec.eu/dyn/www/f?p=205:32:0::FSP_ORG_ID,FSP_LANG_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9)

<sup>(62)</sup> Draft amendment to Commission Implementing Decision C(2020) 612 final of 10.2.2020 on a standardisation request to the European Committee for Standardisation as regards the EU fertilising products in support of Regulation (EU) 2019/1009. Last update: 18 May 2021. Available at <https://ec.europa.eu/docsroom/documents/45687>

Within the harmonised standards, the quantification of Cr will be based only on total mobilisation of the metal, as is currently done in EN 13650 (Extraction of aqua regia soluble elements). Currently valid criteria allow the extraction of only the bioavailable content of Cr total in mineral growing media with EN 13651 (Extraction of calcium chloride/DTPA (CAT) soluble nutrients and elements) and its measurement with EN 13650. The possibility to extract only the bioavailable content of Cr total cannot be granted because the FPR stipulates that metals are only extracted mobilising the whole Cr total to obtain the complete content of the metal and not only the bioavailable portion. Within the FPR, the only exception is made for nickel in mineral growing media. In this way, the European Commission aims to prevent any further accumulation of Cr in soil and aims to decrease its human exposure. The fact that spent mineral growing media can be recycled in the brick industry is not sufficient for an exception. The proposed criterion 2.3 allows up to 30% of the spent mineral growing media to have a different fate to recycling (e.g. in the brick industry). This portion of spent material should be disposed of according to the rules in force in each Member State. However, usually the spent mineral growing media in the EU are disposed of in controlled landfills, where eventually Cr can leach into soil and groundwater. The EC wants to minimise this risk as much as possible. A future Delegated Regulation will set the limit of Cr total at 400 mg/kg DM, for any EU fertilising product containing thermal oxidation materials, certain by-products and recovered high-purity materials. Based on the available information, growing media do not usually contain such component materials, but 400 mg/kg DM is likely to become a limit in all of the EU fertilising products.

The Regulation on products for use in organic production (<sup>63</sup>) was considered in the revision, but its ambition level contrasted with the promotion of compost and digestate as components of growing media and soil improvers awarded with the EU Ecolabel. Usually, compost and digestate have a heavy metal content higher than that required for organic farming. The next revision should assess the possibility to meet the ambition level of organic farming, maybe via a different selection of the permitted components of the products.

## 2.7.2 Criterion 4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)

### Proposed criterion

This criterion applies to growing media and soil improvers.

The content in the product of the following polycyclic aromatic hydrocarbons shall be lower than the values shown in Table 4, measured in terms of dry matter of the product.

Table 4. Limit for PAHs

Pollutant	Maximum content in the product (mg/kg DM)
PAH16	6

PAH16 = sum of naphthalene, acenaphthylene, acenaphthene, 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.

### Assessment and verification

*The applicant shall provide the competent body with reports of tests conducted in accordance with the testing procedure indicated in EN 16181.*

### Rationale

Specific polycyclic aromatic hydrocarbons (PAHs) are regulated under the Persistent Organic Pollutants Regulation (<sup>64</sup>). Some PAHs are classified as carcinogens by the CLP Regulation (<sup>65</sup>), and some are classified as

<sup>(63)</sup> Authorising certain products and substances for use in organic production and establishing their lists. Commission Implementing Regulation (EU) 2021/1165. Available at [this link](#).

<sup>(64)</sup> Persistent organic pollutants. Regulation 2019/1021. Available at [this link](#).

<sup>(65)</sup> Classification, labelling and packaging of substances and mixtures. Regulation (EC) No 1272/2008. Available at [this link](#).

substances of very high concern under the REACH Regulation<sup>(66)</sup>. Atmospheric contamination is considered the main source of deposition in soil (of PAHs). Part of this deposition enters the food chain via plants and other biota; whereas another part is absorbed into soil, where it also persists for a long time (Tao et al., 2004).

The proposed criterion for the 16 PAHs was aligned with requirements set by the FPR. During the revision, the limit of 6 mg/kg DM was not further decreased because these substances are considered a lower priority for risk management (Wood, 2019), and because consultation with stakeholders revealed that this kind of pollution must be tackled at source, meaning in the atmosphere, soil and water. Only five European countries<sup>(67)</sup> define national limits for these specific 16 PAHs, with thresholds ranging from 3 mg/kg to 10 mg/kg DM.

The next revision should investigate the possibility of decreasing the proposed limit value thanks to techniques capable of removing these contaminants from the manufactured product. This could also help to meet the ambition levels set by the Regulation on products for use in organic production<sup>(68)</sup>.

### 2.7.3 Criterion 4.3 and criterion 4.4

#### Proposed criterion 4.3 – Restrictions on substances and mixtures classified as hazardous under Regulation (EC) No 1272/2008

The criterion applies to soil improvers and growing media.

The product shall not be classified in accordance with any of the hazard classes, categories and associated hazard statements codes, in accordance with Regulation (EC) No 1272/2008, that are listed in the following paragraph.

The product shall not contain intentionally added substances or mixtures in concentration greater than 0.010% w/w (in terms of wet weight) that are assigned any of the following hazard classes, categories and associated hazard statement codes, in accordance with Regulation (EC) No 1272/2008:

- Group 1 hazards: Category 1A or 1B carcinogenic, mutagenic and/or toxic for reproduction (CMR): H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df;
- Group 2 hazards: Category 2 CMR: H341, H351, H361, H361f, H361d, H361fd, H362; Category 1 aquatic toxicity: H400, H410; Category 1 and 2 acute toxicity: H300, H310, H330; Category 1 aspiration toxicity: H304; Category 1 specific target organ toxicity (STOT): H370, H372; and
- Group 3 hazards: Category 2, 3 and 4 aquatic toxicity: H411, H412, H413; Category 3 acute toxicity: H301, H311, H331; Category 2 STOT: H371, H373.

The hazard statement codes generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

The use of substances or mixtures that are chemically modified during the production process, so that any relevant hazard for which the substance or mixture has been classified under Regulation (EC) No 1272/2008 no longer applies, shall be exempted from the above requirement.

This criterion does not apply to those components composed of:

- substances not included in the scope of Regulation (EC) No 1907/2006<sup>(69)</sup> as defined in Article 2(2) of that Regulation;
- substances covered by Article 2(7)(b) of Regulation (EC) No 1907/2006, which sets out the criteria for exempting substances included in Annex V to that Regulation from the registration, downstream user and evaluation requirements.

In order to determine if this exclusion applies, the applicant shall screen any intentionally added substances or

<sup>(66)</sup> Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency. Regulation (EC) No 1907/2006. Available at [this link](#).

<sup>(67)</sup> Norway and Slovenia 3 mg/kg DM, Switzerland 4 mg/kg DM, Belgium 5 mg/kg DM and Luxembourg 10 mg/kg DM.

<sup>(68)</sup> Authorising certain products and substances for use in organic production and establishing their lists. Commission Implementing Regulation (EU) 2021/1165. Available at [this link](#).

<sup>(69)</sup> Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency. Regulation (EC) No 1907/2006. Available at [this link](#).

#### **Proposed criterion 4.3 – Restrictions on substances and mixtures classified as hazardous under Regulation (EC) No 1272/2008**

mixtures present at a concentration above 0.010% w/w (in terms of wet weight) in the product.

##### *Assessment and verification*

*The applicant shall provide a list of all relevant components and chemicals intentionally added in the production process, together with the relevant safety data sheets or chemical supplier declarations that demonstrate the compliance with the requirement.*

*Any components or chemicals containing substances or mixtures classified under Regulation (EC) No 1272/2008 shall be highlighted.*

*The approximate dosing rate of the component or chemical, together with the concentration of the restricted substance or mixture in that component or chemical (as provided in the safety data sheet or supplier declaration) and an assumed retention factor of 100%, shall be used to estimate the quantity of the restricted substance or mixture remaining in the product.*

*Justifications for any deviation from a retention factor of 100% or for chemical modification of a restricted hazardous substance or mixture must be provided in writing.*

*For components or substances exempted from meeting the requirement of Criterion 4.3 (see Annexes IV and V to Regulation (EC) No 1907/2006), a declaration to this effect by the applicant shall suffice to comply.*

*In the case of mineral wool, the applicant shall also provide the following:*

- copy of a certificate awarded for the right to use the European Certification Board for Mineral Wool Products trademark as proof of compliance with Note Q of Annex VI to Regulation (EC) No 1272/2008;
- copy of a test report under the terms of ISO 14184-1 Textiles - Determination of formaldehyde - Part 1: Free and hydrolysed formaldehyde.

The above evidence can also be provided directly to competent bodies by any supplier in the applicant's supply chain.

#### **Proposed criterion 4.4 – Restrictions on substances of very high concern (SVHCs) as identified under Regulation (EC) No 1907/2006**

The criterion applies to soil improvers and growing media.

The product shall not contain any intentionally added substance meeting the criteria referred to in Article 57 of Regulation (EC) No 1907/2006 that has been identified in accordance with the procedure described in Article 59 of that Regulation and included in the candidate list of substances of very high concern (SVHCs) for authorisation.

##### *Assessment and verification*

*The applicant shall provide a declaration that they have not intentionally added any SVHCs during their production process. This applicant declaration shall be supported by declarations and safety data sheets of all supplied chemicals and materials used to produce the EU Ecolabel product(s) – to confirm that no SVHC has been intentionally added to those supplied chemicals or materials.*

#### **Rationale**

The proposed criteria 4.3 and 4.4 follow the general recommendations of the EU Ecolabel Chemical Task Force (Dodd et al., 2018), and they comply with Article 6 (6) of the EU Ecolabel Regulation.

Information reported in REACH-compliant safety data sheets (SDS) is crucial to verify compliance with the proposed criteria 4.3 and 4.4. SDS refer to any component, substance or mixture intentionally added in the manufacture of the product. Section 3 of a SDS reports information related to hazardous substances above a specific trigger concentration, which changes according to the specific hazards of the substance.

In the proposed criterion 4.3, the cut-off value was set at 0.010% w/w, because soil improvers and growing media are considered chemical mixtures (CLP Regulation). When the SDS reveals the presence of a restricted hazardous substance, its concentration in the product must be calculated by dividing the total quantity of the substance used (expressed in weight) by the total weight of the manufactured product. This calculation assumes that all portions of the added substance remain in the manufactured product, and none react to form different substances. This concentration value can then be multiplied by factors accounting for any degrees of chemical reactions and/or any losses due to washing out of substances and so on.

Due to Article 2 (7) (b) of the REACH Regulation, criterion 4.3 does not apply to:

- compost,
- digestate,
- the following substances which occur in nature, if they are not chemically modified: minerals, ores, ore concentrates, raw and processed natural gas, crude oil, coal.

The assessment and verification of the proposed criterion 4.3 requires a document to certify the missing classification of mineral wool <sup>(70)</sup> as a category 2 carcinogen (see Table 3.1 of Part 3 of Annex VI to the CLP Regulation). Whenever the mineral wool meets the requirements either by Note Q or Note R in Part 1 of Annex VI to the CLP Regulation, the abovementioned classification does not apply.

Additionally, the assessment and verification of the proposed criterion 4.3 requires an additional document to certify that free formaldehyde does not persist in the manufactured mineral wool. During the production of mineral wool growing media, urea-extended phenol formaldehyde resins are used as binders. Most formaldehyde in mineral wool is eliminated in the production process through high temperatures, but traces of free formaldehyde might remain in the manufactured product at concentrations below 0.010% w/w (Rodriguez Quintero et al., 2015).

In criterion 4.4, SVHC concentrations can only be verified by means of declarations and SDSs provided by the supplier of the intentionally added chemicals and materials used to manufacture the product. The REACH Regulation requires manufacturers to declare SVHCs only if the concentration of the SVHC is higher than 0.1% w/w. Therefore, criterion 4.4 assures that all intentionally added chemicals and materials do not contain SVHCs in concentrations higher than 0.1% w/w.

The next revision should consider the restriction of category 1 skin sensitisers (H317) and category 1 respiratory sensitisers (H334) after assessing the risk of human exposure.

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<sup>(70)</sup> According to CLP Regulation, the mineral wool is a man-made vitreous (silicate) fibres with random orientation with alkaline oxide and alkali earth oxide (Na<sub>2</sub>O+K<sub>2</sub>O+CaO+MgO+BaO) content greater than 18% by weight (CAS: 650-016-00-2).

## 2.7.4 Criterion 4.5 – Microbiological criteria

### Proposed criterion

This criterion applies to growing media and soil improvers, with the exception of mineral growing media.

The content of primary pathogens in the product shall not exceed the maximum levels set in Table 5.

Table 5. Limit value proposed for pathogens

Micro-organisms to be tested	Sampling plans			Limit
	n	c	m	M
Salmonella spp.	5	0	0	Absence in 25 g or 25 ml
Escherichia coli or Enterococcaceae	5	5	0	1 000 CFU in 1 g or 1 ml

CFU = colony-forming units

Where:

- n is the number of samples to be tested;
- c is the number of samples where the number of bacteria expressed in CFU is between m and M;
- m is the threshold value for the number of bacteria expressed in CFU that is considered satisfactory; and
- M is the maximum value of the number of bacteria expressed in CFU.

### Assessment and verification

*The applicant shall provide the competent body with reports of tests conducted in accordance with the testing procedure indicated in Table 6.*

Table 6. Standard test method for the detection of specific pathogens

Parameter	Test method
E. coli	CEN/TR 16193 or ISO 16649-2 or EN ISO 9308-3
Salmonella spp.	EN ISO 6579 or CEN/TR 15215
Enterococcaceae	EN 15788 or EN ISO 7899-1 or BEA method

### Rationale

Human health may be at risk from possible exposure to certain pathogenic microorganisms due to their presence in soil, or in plant material. Growing media and soil improvers manufactured with improperly processed animal wastes can be an important port of entry for human pathogens transmitted through the faecal – oral route (Raviv et al., 2019). To ensure the sanitary quality of material used for the manufacture of growing media and soil improvers, Salmonella spp., Escherichia coli, and Enterococcaceae should be used as indicator organisms.

Salmonella is a genus of enteric pathogenic bacteria that is responsible for many mild to potentially fatal (typhoid) gastric diseases. It is often associated with foodstuffs and faecal material of animal origin. Consequently, it is potentially present in compost and digestate feedstock. It may also contaminate garden wastes if containing faecal material, e.g. from animal bedding, and other faecal deposition (Saveyn and Eder, 2013).

*Escherichia coli* (*E. coli*) is a common microorganism found in significant numbers in the intestinal tract of all animals. Most strains are not pathogenic and live in the intestine as a normal part of the gut flora, but there are some notable pathogenic strains, e.g. O157.

The Enterococcaceae are a family of Gram-positive bacteria placed in the order Lactobacillales. Representative genera include *Enterococcus*, *Melissococcus*, *Pilibacter*, *Tetragenococcus*, and *Vagococcus*. The taxonomy of enterococci has changed considerably over the past 10 years, and the genus now includes over 40 distinct species with various habitats, tropisms, and metabolic and phenotypic characteristics. These habitats include animal hosts, as well as plants, soil and water, and man-made products, including fermented foods and dairy products (Raviv et al., 2019).

Although the FPR uses an approach related to the foodstuff industry, the proposed criterion was fully harmonised with these sanitary safety rules because during the revision there was no alternative scientifically based option that referred to growing media and soil improvers. Nevertheless, the Working Group 5 of CEN/TC 223<sup>(71)</sup> is currently developing suitable methods for the detection of the listed pathogens.

## 2.8 Criterion 5 – Fitness for use

The proposed criterion 5 accommodates the currently valid EU Ecolabel criteria from 6 to 10 under the common name of ‘Fitness for use’. This change simplifies the criteria structure, and it groups the requirements addressing the physico-chemical features of the manufactured product.

### 2.8.1 Criterion 5.1 – Stability

#### Proposed criterion

This criterion applies to growing media and soil improvers, with the exception of mulches totally composed by lignocellulosic components and mineral growing media.

Soil improvers for non-professional applications and growing media for all applications shall meet one of the requirements presented in Table 7.

Table 7. Stability requirements of soil improvers intended for non-professional applications and growing media intended for all applications

Stability parameter	Requirement
Maximum Respirometric index	15 mmol O <sub>2</sub> /kg organic matter/h
Minimum Rottegrad, where applicable	IV (self-heating test temperature rise of maximum 20°C above ambient temperature)

Soil improvers for professional applications shall meet one of the requirements presented in Table 8.

Table 8. Stability requirements of soil improvers intended for professional applications

Stability parameter	Requirement
Maximum Respirometric index	25 mmol O <sub>2</sub> /kg organic matter/h
Minimum Rottegrad, where applicable	III (self-heating test temperature rise of maximum 30°C above ambient temperature)

<sup>(71)</sup> ‘CEN/TC 223 Soil improvers and growing media’ is the European Committee for standardization (CEN) Technical Committee (TC) number 223 with title “Soil improvers and growing media”. All standards produced by this technical committee are available at this webpage: [https://standards.cencenelec.eu/dyn/www/f?p=205:32:0:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9](https://standards.cencenelec.eu/dyn/www/f?p=205:32:0:::FSP_ORG_ID,FSP_LANG_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9)

## Proposed criterion

### Assessment and verification

The applicant shall provide the competent body with reports of tests conducted in accordance with the testing procedure indicated in Table 9.

Table 9. Standard test method for the determination of stability parameters

Parameter	Test method
Respirometric index	EN 16087-1
Rottegrad	EN 16087-2

### Rationale

A stability requirement prevents the presence in the manufactured product of materials that can still be classified as biologically active. This criterion is mainly based on studies focussing on the stability of compost.

Stability indicates the degree of biological decomposition that the composting feedstock has achieved. Therefore, it is a parameter related to the microbial activity and hence to the potential generation of odour and gases with a detrimental environmental effect, e.g. ammonia, nitrous oxide and methane. When unstable materials are added to growing media, they may have a negative impact on plant growth due to the reduced oxygen content and/or available nitrogen and/or the presence of phytotoxic compounds (Wever and Scholman, 2011).

The proposed criterion does not apply to mulches totally composed of lignocellulosic constituents, because these products contain very dry and stable materials like barks, straw and wood chips. The distinction between professional and non-professional applications for soil improvers was kept after consultation with stakeholders, who underlined the need to sometimes use less stable soil improvers for specific objectives. However, the same distinction was not flagged as important in the case of growing media, because only mature compost is used.

The CEN has issued two methods for characterising stability:

- the OUR (oxygen uptake rate) method (CEN 16087-1:2011);
- the “self-heating test” (CEN 16087-2:2011).

The classification of compost stability is described in Table 4 and Table 5.

The stability requirement for soil improvers for professional applications was aligned with the stability criteria established by the FPR for compost (CMC 3), fresh crop digestate (CMC 4), and digestate other than fresh crop digestate (CMC 5).

**Table 4.** Compost stability based on Rottegrad

Temperature rise above ambient temperature (°C)	Official class of stability	Descriptors of class or group	Major compost group
< 10	V	Very stable, well-aged compost	Finished
10 - 20	IV	Moderately stable, curing compost	
20 - 30	III	Still decomposing, active compost	Active



30 – 40	II	Immature , young or very active compost	
> 40	I	Fresh, raw compost, just mixed ingredients	Fresh

Source: Brinton et al. (1995)

**Table 5.** Compost stability based on respirometric index

Category of compost product	Oxygen uptake rate (mmol O <sub>2</sub> / kg VS / h)	Oxygen uptake rate (mg O <sub>2</sub> / kg VS / h)	Equivalent CO <sub>2</sub> evolution rate (mg CO <sub>2</sub> / kg VS / day)
Very unstable	> 30	> 960	> 32
Unstable	15 - 30	480 - 960	16 - 32
Stable	5 - 15	160 - 480	5 - 16
Very unstable	< 5	< 160	< 5

Source: Veeken et al. (2003)

## 2.8.2 Criterion 5.2 – Macroscopic impurities

### Proposed criterion

This criterion applies to growing media and soil improvers, with the exception of mineral growing media:

- (a) no more than 3 g/kg dry matter of macroscopic impurities above 2 mm in any form of glass and metal, each;
- (b) no more than 2.5 g/kg dry matter of macroscopic impurities above 2 mm in form of plastic; and
- (c) no more than 5 g/kg dry matter of the sum of the macroscopic impurities referred to in point (a) and point (b).

### Assessment and verification

*The applicant shall provide the competent body with reports of tests conducted in accordance with the testing procedure indicated in the Technical Specification CEN/TS 16202, or another equivalent testing procedure authorised by the competent body.*

### Rationale

The FPR reports that “impurities in EU fertilising products derived from bio-waste, in particular polymers but also metal and glass, should be either prevented or limited to the extent technically feasible by detection of such impurities in separately collected bio-waste before processing”. Nevertheless, bio-waste can still contain these macroscopic impurities. This criterion limits the presence of such impurities in the manufactured product.

The proposed criterion is aligned with the FPR considering the restrictions on plastic that will enter into force in 2026. Point (a) of the proposed criterion specifies that the limit of 3 g/kg applies to both glass and metal. To clarify the criterion, an example is hereby provided:

In 1 kg dry matter of product:

- the maximum level of impurities (glass + metals + plastics) is equal to 5 g dry matter (see point (c));
- the maximum level of plastic is equal to 2.5 g dry matter (see point (b));
- the maximum level of metal is equal to 3 g dry matter (see point (a));
- the maximum level of glass is equal to 3 g dry matter (see point (a)).

The expression “in any form of” specifies the kind of forms that the material can have; in this case there could be flakes, chips, splinters, dust, etc. The expression aims to include any kind of forms of that material.

## 2.8.3 Criterion 5.3 – Organic matter and dry matter in soil improvers

### Proposed criterion

This criterion applies to soil improvers.

The organic matter as loss on ignition of the product shall not be lower than 15% dry mass or 8.5% of organic carbon (Corg) content by mass.

The dry matter content of the product shall not be lower than 25% fresh weight (% FW).

### Assessment and verification

*The applicant shall provide the competent body with reports of tests conducted in accordance with the testing procedure presented in Table 10.*

*Where compliance is assessed based on organic matter, the following conversion factor applies: organic*

## Proposed criterion

$$\text{carbon } (C_{org}) = \text{organic matter} \times 0.56$$

Table 10. Standard test methods for the determination of dry matter, organic matter and total organic carbon contents (TOC)

Parameter	Test method
Dry matter (% FW)	EN 13040
Organic matter as loss on ignition (% dry mass)	EN 13039
Total organic carbon (TOC) (% dry mass)	EN 15936

## Rationale

The proposed requirements for dry matter and organic carbon content in soil improvers are intended to promote the use of both compost and digestate as components of soil improvers.

The investigation on compost provided the following information:

- The European Compost Network requires that compost used in soil improvers should contain at least 15% organic matter, as a percentage of dry matter (ECN, 2018b).
- In Spain, different minimum thresholds are established according to the feedstock used for compost production, with a minimum organic matter concentration of 35% for general compost, and 40% for green compost (Real Decreto 506/2013 <sup>(72)</sup>).
- The quality standard RAL GZ251 requires at least 30% organic matter content.
- During the revision, stakeholders declared that producers have difficulties reaching organic matter values higher than 15% as dry mass, because compost could contain up to 85% minerals (like sand).

The investigation on digestate provided the following information:

- The dry matter content of digestate not yet dewatered may vary between about 2% to more than 20% depending on the source (Wood, 2019).
- Digestate produced from household waste may have 15% dry matter, and 9.8% organic matter (Veeken et al., 2017).

On one hand, the currently valid EU Ecolabel criterion 8 was harmonised with the End of Waste criteria (Saveyn and Eder, 2013) and established an organic matter limit of at least 15% dry weight, and a dry matter content of at least 25% fresh weight.

On the other hand, the FPR for organic soil improvers (PFC 3(A)) sets a limit of at least 20% dry matter, and a minimum of 7.5% by mass of organic carbon. The requirements in the FPR are expressed by reference to organic carbon ( $C_{org}$ ). However, where compliance is assessed based on organic matter the following conversion factor applies:  $C_{org} = \text{organic matter} \times 0.56$ .

All in all, the proposed values of dry matter and organic matter in soil improvers are a compromise between values that are achievable by digestate and compost used as organic components in soil improvers. Additionally, the ambition level of the organic carbon content in the proposed criterion (8.5% by mass) is higher than that established by the FPR for organic soil improvers (7.5% by mass).

<sup>(72)</sup> Real Decreto 506/2013, de 28 de junio, sobre productos fertilizantes. Documento BOE-A-2013-7540. Available in Spanish at <https://www.boe.es/buscar/pdf/2013/BOE-A-2013-7540-consolidado.pdf>

## 2.8.4 Criterion 5.4 – Viable weed seeds and plant propagules

### Proposed criterion

This criterion applies to growing media and soil improvers, with the exception of mineral growing media.  
In the product, the content of viable weed seeds and plant propagules shall not exceed two units per litre.

#### *Assessment and verification*

*The applicant shall provide the competent body with a report of a test in accordance with the testing procedure indicated in the Technical Specification CEN/TS 16201, or another equivalent testing procedure authorised by the competent body.*

### Rationale

The proposed criterion has undergone only some editorial changes compared to the currently valid EU Ecolabel criterion 9.

In the quality assurance scheme of the European Compost Network, 'weed seeds' are defined as all viable seeds (and plant propagules) found in the end product. The limit value is set to less than 2 seeds per litre of product, to be investigated by using CEN TS 16201 (ECN, 2018a).

The currently valid EU Ecolabel criterion 9 was based on the standards RAL-GZ 250/2 (Quality Parameters for Growing Media) and RAL-GZ 250/1-2 (Quality Parameters for Composted Bark). The verification method referred to the CEN Horizontal Project (CEN/TC 400), whereas the limit value was based on the conclusions proposed by the End of Waste criteria for biodegradable waste (Saveyn and Eder, 2013).

## 2.8.5 Criterion 5.5 – Plant response

### Proposed criterion

This criterion applies to growing media and soil improvers.  
Products shall not adversely affect plant emergence or subsequent growth.

#### *Assessment and verification*

*The applicant shall provide the competent body with a valid test conducted in accordance with the testing procedure indicated in EN 16086-1.*

### Rationale

The proposed criterion has undergone only some editorial changes compared to the currently valid EU Ecolabel criterion 10.

For growing media and soil improvers, the quality assurance scheme of the European Compost Network defines the plant response as 'compost quality testing in order to prevent composts with any plant growth inhibiting factors from entering in the market (pre-normative standards of CEN/TC 223 prEN 16086:2010 and prEN 16089:2010)' (ECN, 2018a).

## 2.9 Criterion 6 – Growing media features

### Proposed criterion

This criterion only applies to growing media.

#### Criterion 6.1 – Electrical conductivity

The electrical conductivity of the product shall be below 100 mS/m.

##### *Assessment and verification*

*The applicant shall provide the competent body with the report of the test conducted in accordance with the testing procedure indicated in EN 13038.*

#### Criterion 6.2 – Sodium content

The sodium content in water extract of the product shall not exceed 150 mg/l fresh product.

##### *Assessment and verification*

*The applicant shall provide the competent body with the report of the test conducted in accordance with the testing procedure indicated in EN 13652.*

#### Criterion 6.3 – Chloride content

The chloride content in water extract of the product shall not exceed 500 mg/l fresh weight of the product.

##### *Assessment and verification*

*The applicant shall provide the competent body with the report of the test conducted in accordance with the testing procedure indicated in EN 16195.*

### Rationale

The proposed requirements combine soil salinisation, setting limits for sodium and chloride content, and electrical conductivity, which is an indirect measurement of salinity.

The requirements were not applied to soil improvers because, when they are added to or spread on soil, the soluble elements that cause the salinity would quickly dissipate. Conversely, a growing medium that contains a lot of sodium chloride (NaCl) might cause an osmotic effect that makes water less available for the plant. The high content of NaCl, or Na<sup>+</sup> and Cl<sup>-</sup> can also reduce plant growth by depressing the photosynthesis (Tavakkoli et al., 2011).

**Table 6** reports an overview of the rationale for the requirements set in the proposed criterion 6. Limit values were proposed to remain the same as those set in the currently valid EU Ecolabel criteria to accommodate the use of digestate and compost. The proposed test methods were harmonised with the EN standards revised/developed by CEN/TC under the FPR <sup>(73)</sup>.

After discussion with stakeholders, requirements on pH were proposed to be removed because different plants require different pH values. In line with the FPR, it was agreed that the pH value should only be a piece of information related to the product (proposed criterion 7).

<sup>(73)</sup> Draft amendment to Commission Implementing Decision C(2020) 612 final of 10.2.2020 on a standardisation request to the European Committee for Standardisation as regards the EU fertilising products in support of Regulation (EU) 2019/1009. Last update: 18 May 2021. Available at <https://ec.europa.eu/docsroom/documents/45687>

**Table 6.** Overview of the rationale on electrical conductivity, sodium and chloride content

Parameter	Requirement and verification method under		Information for rationale
	Current criteria (Commission Decision 2015/2099)	Proposed criterion 6	
Electrical conductivity	< 100 mS/m EN 13038	< 100 mS/m EN 13038	<ul style="list-style-type: none"> <li>— FPR: with the exception of mineral growing media, it requires only provision of information (Annex III, Part II of FPR);</li> <li>— WRAP (2014): an upper limit of &lt; 150 mS/m, and a target value of &lt; 60 mS/m;</li> <li>— Rodriguez Quintero (2015): &lt; 65 mS/m is a suitable limit for most plants;</li> <li>— ECN (2018b): &lt; 190 mS/m.</li> </ul>
Sodium content	< 150 mg/l of fresh product EN 13652	< 150 mg/l of fresh product EN 13652	<ul style="list-style-type: none"> <li>— WRAP (2014): an upper limit of &lt; 150 mg/l, and a target value &lt; 100 mg/l;</li> <li>— RAL (2018): &lt; 100 mg/l for all plants, &lt; 35 mg/l for acidophilic plants;</li> <li>— ECN (2018b): &lt; 250 mg/l.</li> </ul>
Chloride content	< 500 mg/l of fresh product EN 13652	< 500 mg/l of fresh weight of the product EN 16195	<ul style="list-style-type: none"> <li>— WRAP (2014): an upper limit of &lt; 1 000 mg/l, and a target value &lt; 500 mg/l;</li> <li>— RAL (2018): 200 mg/l for all plants, &lt; 100 mg/l for acidophilic plants;</li> <li>— ECN (2018b): &lt; 750 mg/l.</li> </ul>

Source: see list of references

## 2.10 Criterion 7 – Provision of information

### Proposed criterion

This criterion applies to growing media and soil improvers.

The information indicated under Criterion 7.1 or 7.2, as applicable, shall be provided.

The information shall be provided with the product, either on the packaging or in accompanying documents.

An EU fertilising product falling within the product function category 3(A) (organic soil improvers) or the product function category 4 (growing media) under the terms of Regulation (EU) 2019/1009 shall be deemed to comply with the requirement.

For mineral growing media, the provision of information shall include a statement about the professional horticultural application.

## Proposed criterion

### Criterion 7.1 – Soil improvers

- a) the name and address of the body responsible for marketing;
- b) a descriptor identifying the product by type, including the wording 'SOIL IMPROVER';
- c) a batch identification code;
- d) the quantity (indicated by mass or volume);
- e) range of moisture content or the dry matter content expressed as % by mass;
- f) a list of all components above 5% by product weight or volume in descending order of magnitude by dry weight; where the component is a substance or a mixture, it shall be identified as specified in Article 18 of Regulation (EC) No 1272/2008;
- g) the recommended conditions of storage and the recommended 'use by' date;
- h) guidelines for safe handling and use, including any relevant information on measures recommended to manage risks to human, animal or plant health, to safety or to the environment;
- i) instructions for intended use, including application rates, timing and frequency, and target plants or mushrooms;
- j) pH;
- k) electrical conductivity given as mS/m, except for mineral wool;
- l) organic matter content or organic carbon (C<sub>org</sub>) content, expressed as % by mass;
- m) minimum amount of organic nitrogen (N<sub>org</sub>), expressed as % by mass, followed by a description of the origin of the organic matter used;
- n) the ratio of organic carbon to total nitrogen (C<sub>org</sub>/N).
- o) the following nutrients shall be declared, expressed as % by mass, if exceeding 0.5% by mass: nitrogen (N), phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) and potassium oxide (K<sub>2</sub>O).

### Criterion 7.2 – Growing media

- a) the name and address of the body responsible for marketing;
- b) a descriptor identifying the product by type, including the wording 'GROWING MEDIUM';
- c) a batch identification code;
- d) the quantity:
  - for plugs of mineral wool, expressed as number of pieces and the two dimensions diameter and height;
  - for mineral wool having forms other than plugs, expressed as number of pieces and the three dimensions length, height and width;
  - for other pre-shaped growing media, expressed as size in at least two dimensions;
  - for other growing media, expressed as total volume;
  - except for pre-shaped growing media, quantity expressed as volume of materials with a particle size greater than 60 mm, when present;
- e) range of moisture content or the dry matter content expressed as % by mass;
- f) a list of all components above 5% by product weight or volume in descending order of magnitude by dry weight; where the component is a substance or a mixture, it shall be identified as specified in Article 18 of Regulation (EC) No 1272/2008;

### Proposed criterion

- g) the recommended conditions of storage and the recommended 'use by' date and production date;
- h) guidelines for safe handling and use, including any relevant information on measures recommended to manage risks to human, animal or plant health, to safety or to the environment;
- i) instructions for intended use, including application rates, timing and frequency, and target plants or mushrooms;
- j) pH;
- k) electrical conductivity given as mS/m, except for mineral wool;
- l) a statement about the stability of organic matter (stable or very stable);
- m) nitrogen (N) extractable by CaCl<sub>2</sub>/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l;
- n) phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) extractable by CaCl<sub>2</sub>/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 20 mg/l;
- o) potassium oxide (K<sub>2</sub>O) extractable by CaCl<sub>2</sub>/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l;
- p) chromium total (Cr total), quantified as set in criterion 4.1(b), if above 200 mg/kg DM;
- q) a statement about the professional horticultural application, in the case of mineral growing media.

### Assessment and verification

*The applicant shall declare that the product complies with this criterion and provide the competent body with the text of the user information written on the packaging or on accompanying fact sheets.*

### Rationale

The proposed criterion harmonised the EU Ecolabel provision of information with the labelling requirements set by the FPR. More precisely, the harmonisation referred to the general labelling requirements (Part I of Annex III to the FPR) and product-specific labelling requirements (Part II of Annex III to the FPR) for the PFCs: growing media (PFC 4) and organic soil improvers (PFC 3(A)). Therefore, an EU fertilising product registered within the abovementioned PFCs directly complies with the proposed criterion 7. Conversely, a product without the CE mark must meet the listed requirements.

This proposal aims to achieve the following benefits:

- simplification of requirements under different policies to remove additional administrative burden for EU Ecolabel applicants that already hold a product with the CE mark;
- reduction of the workload for competent bodies verifying products with the CE mark;
- promotion of standardised information for customers of growing media and soil improvers.

The information provided, either on the packaging or in accompanying documents, can also be available in a digital format.

Point f) of the proposed subcriteria 7.1 and 7.2 was taken from the future implementation of the FPR <sup>(74)</sup>. This point allows a harmonised description of components of growing media and soil improvers.

Rather than a specific value, the proposed criterion requests that the range of the moisture content is reported because it varies with external atmospheric conditions.

In the proposed criterion 7.2 d), specifications about plugs of mineral wool were necessary due to the different shape compared to the other forms available on the market. The proposed dimensions were aligned with the on-going standardisation work.

<sup>(74)</sup> Commission Delegated Regulation (EU) 2021/1768 of 23 June 2021 amending, for the purpose of its adaptation to technical progress, Annexes I, II, III and IV to Regulation (EU) 2019/1009 of the European Parliament and of the Council laying down rules on the making available on the market of EU fertilising products. Available at [this link](#).



## 2.11 Criterion 8 – Information appearing on the EU Ecolabel

### Proposed criterion

If the optional label with text box is used, it shall contain the following three statements:

- promotes the recycling of materials;
- promotes the use of materials produced in a more sustainable manner, thus reducing environmental degradation.

For soil improvers, the additional information shall be included:

- contributes to reducing soil and water pollution.

The applicant shall follow the instructions on how to properly use the EU Ecolabel logo provided in the EU Ecolabel Logo Guidelines:

<https://ec.europa.eu/environment/ecolabel/>

### *Assessment and verification*

*The applicant shall provide a declaration of compliance with this criterion, supported by a high resolution image of the product packaging that clearly shows the label, the registration/licence number and, where relevant, the statements that can be displayed together with the label.*

### Rationale

The proposed criterion mainly keeps the same content and form as the currently valid criterion 13 (Commission Decision 2015/2099), slightly revising the statements reported on the label. Regarding the verification stage, a digital image of the product was considered sufficient to assess compliance with the criterion.

### 3 Main changes proposed

This section reports the key changes proposed after revising the EU Ecolabel criteria for growing media, soil improvers and mulch (Commission Decision 2015/2099) <sup>(75)</sup>.

Although no new requirement was added, the wording, substructure and ambition level of the criteria were updated. **Table 7** reports an overview of the proposed and currently valid criteria. The proposed changes reflect knowledge gained through interaction with stakeholders, data collection, desk research and policy developments.

Whenever applicable, the proposed criteria and terminology were harmonised with the Fertilising Products Regulation (FPR) <sup>(76)</sup>. This choice should reduce administrative procedures, decrease the overall application costs, and likely stimulate the uptake of the EU Ecolabel for the product group. Nevertheless, the proposed EU Ecolabel criteria set an overall higher ambition level compared to the FPR.

In general, the proposed criteria are characterised by the following features:

- More secondary raw materials were accepted as components of the product. This incentivises circular economy and in particular promotes a more resource-efficient use of organic matter and nutrients.
- The permitted content of contaminants, e.g. heavy metals, was decreased. This improves the safety of the products and it reduces the possible detrimental effects on humans, animals, plants or the environment in general.
- New principles set by the latest EU strategies were included, with particular reference to the Biodiversity Strategy for 2030 (EC, 2021a) and Soil Strategy for 2030 <sup>(77)</sup>.
- The content of impurities, such as plastics, metal and glass, was proposed to be limited to the technically feasible extent.
- A more stringent requirement was set for CO<sub>2</sub> emissions produced when manufacturing mineral growing media.

The evaluation of the cumulative effect of all changes proposed was not possible due to the complexity of applying a number of pass-fail conditions to the entire industry.

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<sup>(75)</sup> EU Ecolabel criteria for growing media, soil improvers and mulch. Commission decision 2015/2099. Available at [this link](#).

<sup>(76)</sup> Rules on the making available on the market of EU fertilising products. Regulation (EU) 2019/1009. Available at [this link](#).

<sup>(77)</sup> EU Soil Strategy for 2030. Reaping the benefits of healthy soils for people, food, nature and climate. COM(2021) 699 final. Available at [this link](#).

**Table 7.** Overview of the proposed and currently valid criteria

Proposed criteria after revision	Currently valid criteria (Commission Decision 2015/2099)	Applicability of the criterion		
		GM	SI	M
1 – Components	1 – Constituents	X	X	X
1.1 – Organic components of the product	2 – Organic constituents	X	X	X
2 – Mineral components	3 – Mineral growing media and mineral constituents	X	X	X
2.1 – Energy consumption and CO <sub>2</sub> emissions during the manufacture of mineral growing media	3.1. – Energy consumption and CO <sub>2</sub> emissions	X		
2.2 – Sources of mineral extraction	3.2 – Sources of mineral extraction	X	X	X
2.3 – Mineral growing media use and after use	3.3 – Mineral growing media use and after use	X		
3 – Organic components and recycled/recovered materials in growing media	4 – Recycled/recovered materials and renewable materials in growing media	X		
4 – Restricted substances	5 – Limitation of hazardous substances	X	X	X
4.1 – Limits for heavy metals	5.1 – Heavy metals	X	X	X
4.2 – Limits for polycyclic aromatic hydrocarbons (PAHs)	5.2 – Polycyclic Aromatic Hydrocarbons	X	X	X
4.3 – Restrictions on substances and mixtures classified as hazardous under Regulation (EC) No 1272/2008	5.3 – Hazardous substances and mixtures	X	X	X
4.4 – Restrictions on substances of very high concern (SVHCs) as identified under Regulation (EC) No 1907/2006	5.4 – Substances listed in accordance with Article 59 (1) of Regulation (EC) No 1907/2006	X	X	X
4.5 – Microbiological criteria	5.5 – Limits for E. coli and Salmonella spp.	X	X	X

Proposed criteria after revision	Currently valid criteria (Commission Decision 2015/2099)	Applicability of the criterion		
		GM	SI	M
5 – Fitness for use	NA	X	X	X
5.1 – Stability	6 – Stability	X	X	X
5.2 – Macroscopic impurities	7 – Physical contaminants	X	X	X
5.3 – Organic matter and dry matter in soil improvers	8 – Organic matter and dry matter		X	X
5.4 – Viable weed seeds and plant propagules	9 – Viable weed seeds and plant propagules	X	X	
5.5 – Plant response	10 – Plant response	X	X	
6 – Growing media features	11 – Growing media features	X		
6.1 – Electrical conductivity	11.1 – Electrical conductivity	X		
NA	11.2 – pH	X		
6.2 – Sodium content	11.3 – Sodium content	X		
6.3 – Chloride content	11.4. – Chloride content	X		
7 – Provision of information	12 – Provision of information	X	X	X
7.1 – Soil improvers	12.1 – Soil improvers		X	
7.2 – Growing media	12.2 – Growing media	X		
NA	12.3 – Mulch			X
8 – Information appearing on the EU Ecolabel	13 – Information appearing on the EU Ecolabel	X	X	X

NA: not available; GM: growing media; SI: soil improvers; M: mulches

### **Product name and scope**

- Although the scope did not change, the name was slightly changed to follow the definitions set by the FPR and the CEN/TC 223 <sup>(78)</sup>, which consider mulch a type of soil improver. Therefore, the word 'much' was removed from the product name.

### **Assessment and verification requirements**

- Once available, test and sampling methods shall be conducted in accordance with the corresponding harmonised standards set by the FPR.
- Any change in suppliers and production sites pertaining to products shall be notified together with supporting information to enable verification of continued compliance with the criteria.
- In the case of EU fertilising products, specific documentation shall be delivered. This documentation is not an additional burden for the applicant, because it is already produced when the product receives the CE mark.
- The applicant shall deliver a written confirmation that all the criteria are fulfilled.
- The reference to Commission Regulation (EU) No 142/2011 <sup>(79)</sup> was removed because this policy applies to materials of animal origin. It is useful to repeat it in the legal text.

### **Definitions**

- Specific definitions were removed because they are no longer used. This is the case of 'organic soil improver', 'organic mulch' and 'constituent'.
- Other definitions were added, like 'component', 'recovered material', 'recovery', 'recycling' and 'total organic carbon'.

### **Criterion 1 – Components**

- The word 'component' substituted the word 'constituent' to align the criteria with the FPR.
- The criterion was simplified by merging the topics of criteria 1 and 2 of Commission Decision 2015/2099.
- The production of compost from bio-waste often includes spent growing media, which are made with peat. The composting process does not degrade the peat, which could still be found in the final compost placed on the market. To promote the recirculation of organic matter and nutrients with the use of compost, the exclusion of peat focussed only on 'intentionally added' peat.
- The proposed criterion reports only a positive list of organic components and does not include materials that are not allowed.
- The following expression was removed due to the lack of clarity on the inclusion/exclusion criteria: "Materials derived from any other biomass by-products that are not mentioned above, as defined in Article 5 of Directive 2008/98/EC".
- The reference to faecal matter was removed because any faecal matter that will be placed on the market needs to comply with Regulation 142/2011, Annex XI, Section 2. Hence, the faecal matter in Commission Decision 2015/2099 is likely to fall under the proposed point 3.
- The proposed criterion clearly states which materials can be used as organic components with and without treatment (anaerobic digestion and/or aerobic composting).

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<sup>(78)</sup> 'CEN/TC 223 Soil improvers and growing media' is the European Committee for standardization (CEN) Technical Committee (TC) number 223 with title "Soil improvers and growing media". All standards produced by this technical committee are available at this webpage: [https://standards.cencenelec.eu/dyn/www/f?p=205:32:0:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9](https://standards.cencenelec.eu/dyn/www/f?p=205:32:0:::FSP_ORG_ID,FSP_LANG_ID:6204,25&cs=19D33A9F25FAA51B9E975AF844947A1F9)

<sup>(79)</sup> Health rules as regards animal by-products and derived products not intended for human consumption. Commission Regulation (EU) No 142/2011. Available at [this link](#).

## **Criterion 2 – Mineral components**

### **Criterion 2.1 – Energy consumption and CO<sub>2</sub> emissions during the manufacture of mineral growing media**

- Limit values were referred to the “product”, which is defined as the mineral wool in any of the forms placed on the market (e.g. slabs, cubes, plugs).
- The limit value of the CO<sub>2</sub> emissions was decreased from 0.8 t CO<sub>2</sub>/t to 0.7 t CO<sub>2</sub>/t of product, which is a value that can currently be met by about 25% of the European plants (EC, 2021b).
- The factor in the formula about the energy-to-product ratio was decreased from 2.5 to 2.1, in accordance with Annex IV to the Energy Efficiency Directive <sup>(80)</sup>.
- Indirect CO<sub>2</sub> emissions are now directly calculated in accordance with the harmonised free allocation of emission allowances <sup>(81)</sup>.
- Three legal references were updated <sup>(82)</sup>:
  - Commission Implementing Decision 2011/877/EU was repealed by COMMISSION DELEGATED REGULATION (EU) 2015/2402 reviewing harmonised efficiency reference values for separate production of electricity and heat in application of Directive 2012/27/EU.
  - Commission Regulation (EU) No 601/2012 was repealed by COMMISSION IMPLEMENTING REGULATION (EU) 2018/2066 on the monitoring and reporting of greenhouse gas emissions.
  - Commission Regulation (EU) No 600/2012 was repealed by COMMISSION IMPLEMENTING REGULATION (EU) 2018/2067 on the verification of data and on the accreditation of verifiers.

### **Criterion 2.2 – Sources of mineral extraction**

- The requirements are proposed to be expanded to any excavation site to ensure an overall implementation of the mitigation hierarchy.
- The proposed criterion is fully harmonised with requirements set by Commission Decision 2021/476 establishing EU Ecolabel criteria for hard covering products.

## **Criterion 3 – Organic components and recycled/recovered materials in growing media**

- Specific documents are requested about the amount and origin of recycled/recovered material used for the production of mineral wool.

## **Criterion 4 – Restricted substances**

### **Criterion 4.1 – Limits for heavy metals**

**Table 8** and **Table 9** summarise the changes implemented to limits for heavy metals. **Table 8** reports that:

- proposed limit values are mostly either set as the currently valid criterion, or decreased by between 25% and 131%;
- only in the case of *copper*, which is considered a macronutrient, was the limit value increased by 50% to be aligned with the FPR;
- although it was not included in the currently valid criterion, the proposed limit value for *arsenic* was based on the lowest value set by the national best practices (10-50 mg/kg DM).

**Table 9** reports the changes implemented regarding the limit values of *chromium (Cr)*:

- To be in line with the FPR, the proposal accepts only Cr extraction and measurements with EN 13650 (Extraction of aqua regia soluble elements) or the future harmonised standard.

<sup>(80)</sup> Energy efficiency. Directive (EU) 2018/2002. Available at [this link](#).

<sup>(81)</sup> Transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC. Commission Delegated Regulation (EU) 2019/331. Available at [this link](#).

<sup>(82)</sup> Legal Texts are available at <https://eur-lex.europa.eu/advanced-search-form.html>

- For growing media other than mineral growing media, the limit value of Cr total was decreased from 150 mg/kg DM to 100 mg/kg DM.
- For mineral growing media, the extraction of bioavailable Cr is no longer possible.
- The limit value for Cr VI was only set for mineral growing media and aligned with the FPR due to current constraints when measuring this parameter in the presence of organic matter.

**Table 8.** Comparison between limit values of heavy metals set by the proposed EU Ecolabel criterion 4.1 (Proposed) and the EU Ecolabel criterion 5.1 set by Commission Decision 2015/2099 (Current)

Heavy metal	Soil improvers			Growing media		
	Proposed criterion (mg/kg DM)	Current criterion (mg/kg DM)	Difference (%)	Proposed criterion (mg/kg DM)	Current criterion (mg/kg DM)	Difference (%)
Cadmium (Cd)	1	1	0	1.3	3	-131
Copper (Cu)	200	100	50	200	100	50
Mercury (Hg)	0.45	1	-122	0.45	1	-122
Nickel (Ni)	40	50	-25	40	90	-125
Lead (Pb)	100	100	0	100	150	-50
Zinc (Zn)	300	300	0	300	300	0
Inorganic arsenic (As)	10	NA	NA	10	NA	NA

NB. DM: Dry matter; NA: Not applicable.

The difference between limit values was calculated as follows:  $\text{Difference (\%)} = \frac{\text{Proposed} - \text{Current}}{\text{Proposed}} * 100$

**Table 9.** Comparison between limit values of chromium species set by the proposed EU Ecolabel criterion 4.1 (Proposed) and the EU Ecolabel criterion 5.1 set by Commission Decision 2015/2099 (Current)

EU Ecolabel criterion	Chromium species	Soil improvers (mg/kg DM)	Growing media (mg/kg DM)	
			Mineral growing media	Growing media other than mineral growing media
Proposed	Cr total	100 *	310 *	100 *
	Cr VI	NA	2 *	NA
Current	Cr total	100 *	150 **	150 *

\* Extracted and measured with EN 13650 (Extraction of aqua regia soluble elements) or the future harmonised standard.

\*\* Extracted with EN 13651 (Extraction of calcium chloride/DTPA (CAT) soluble nutrients and elements) and measured with EN 13650

NB. DM: Dry matter; NA: Not applicable.

**Criterion 4.3 and 4.4 – Restrictions on substances and mixtures classified as hazardous under CLP Regulation; and restrictions on substances of very high concern (SVHCs) as identified under REACH Regulation**

- The proposed criteria follow the general recommendations of the EU Ecolabel Chemical Task Force (Dodd et al., 2018).
- Limitation of SVHCs was set below 0.10% w/w at the level of intentionally added chemicals and materials used to manufacture the product. This approach differs from the currently valid criterion 5.4 (Annex to Commission Decision 2015/2099), which limits SVHCs below 0.010% w/w at the level of manufactured product. The proposed approach is directly based on information reported in the safety data sheets (SDS) of the intentionally added chemicals and materials used to manufacture the product. Complying with the REACH Regulation, SDS must report SVHCs only if the concentration of the SVHC is higher than 0.1% w/w. The proposed approach allows a more straightforward verification process.

**Criterion 4.5 – Microbiological criteria**

- The proposed criterion was fully aligned with the FPR. Therefore, compared to the currently valid criterion, the proposal added the equivalency for testing of *Escherichia coli* and *Enterococcaceae* content.

**Criterion 5 – Fitness for use**

The proposed Criterion 5 accommodates the currently valid criteria from 6 to 10 under the common name of 'Fitness for use'. This change simplifies the criteria structure, and it groups requirements addressing the physico-chemical features of the manufactured product.

**Criterion 5.2 – Macroscopic impurities**

The currently valid criterion 7 (Commission Decision 2015/2099) requires that the content of glass, metal and plastic, with a mesh size of > 2 mm in the product, shall be lower than 0.5%, measured in terms of dry weight (5 g per 1 kg).

The proposed criterion is more stringent and it was aligned with the FPR considering the restrictions on plastic that will come into force in 2026. In particular, in 1 kg dry matter of product, accepted impurities with a mesh size > 2 mm have the following maximum level:

- 5 g dry matter for all impurities (glass + metals + plastics);
- 2.5 g dry matter for plastic;
- 3 g dry matter for metal;
- 3 g dry matter for glass.

**Criterion 5.3 – Organic matter and dry matter in soil improvers**

- It introduces the concept of the organic carbon ( $C_{org}$ ) content and gives the conversion factor,  $C_{org} = \text{organic matter} \times 0.56$ , in line with the FPR.
- It sets an ambition level for the  $C_{org}$  content (8.5% by mass), which is higher than the limit set by the FPR for organic soil improvers (PFC 3(A)) (7.5% by mass).

**Criterion 6 – Growing media features**

- Requirements on pH were proposed to be removed because specific plants require specific pH values. In line with the FPR, the pH value should only be a piece of information related to the product (proposed criterion 7).

**Criterion 7 – Provision of information**

**Table 10** reports a comparison between the current criterion 12 of Commission Decision 2015/2099 and the proposed criterion 7. The changes are related to the harmonisation with the FPR and mainly refer to / consist of:

- quantity of growing media according to the type and shape;



- addition of the dry matter content expressed as % by mass as an alternative to the moisture content range;
- in the component description, if they are substances or mixtures they shall be identified as specified in Article 18 of Regulation (EC) No 1272/2008;
- reporting of electrical conductivity also for soil improvers;
- specific requirements about the description of the content of carbon, nitrogen, phosphorus and potassium;
- removal of reference to germination and growth inhibition for growing media;
- removal of reference to stability of organic matter for soil improvers;
- removal of directions of methods of use and application rates;
- for growing media, reporting of chromium total (Cr total) if above 200 mg/kg DM.

**Table 10.** Provision of information – Comparison between criterion 12 of the currently valid EU Ecolabel criteria and the proposed criterion 7

Topic	Soil improvers and mulches			Growing media	
	Proposed criterion 7.1 Soil improvers including mulches	Currently valid criteria 12.1 and 12.2		Proposed criterion 7.2	Currently valid criterion 12
		Soil improvers (12.1)	Mulches (12.1)		
<b>Seller</b>	(a) the name and address of the body responsible for marketing	(a) The name and address of the body responsible for marketing	(a) The name and address of the body responsible for marketing	(a) the name and address of the body responsible for marketing	(a) The name and address of the body responsible for marketing
<b>Type of product</b>	(b) a descriptor identifying the product by type, including the wording 'SOIL IMPROVER'	(b) A descriptor identifying the product by type, including the wording 'SOIL IMPROVER'	(b) A descriptor identifying the product by type, including the wording 'MULCH'	(b) a descriptor identifying the product by type, including the wording 'GROWING MEDIUM'	(b) A descriptor identifying the product by type, including the wording 'GROWING MEDIUM'
<b>Batch</b>	(c) a batch identification code	(c) A batch identification code	(c) A batch identification code	(c) a batch identification code	(c) A batch identification code

Topic	Soil improvers and mulches			Growing media	
	Proposed criterion 7.1	Currently valid criteria 12.1 and 12.2		Proposed criterion 7.2	Currently valid criterion 12
	Soil improvers including mulches	Soil improvers (12.1)	Mulches (12.1)		
<b>Quantity</b>	(d) the quantity (indicated by mass or volume)	(d) The quantity (in weight)	(d) The quantity (in volume)	(d) the quantity: <ul style="list-style-type: none"> <li>— for plugs of mineral wool, expressed as number of pieces and the two dimensions diameter and height;</li> <li>— for mineral wool having forms other than plugs, expressed as number of pieces and the three dimensions length, height and width;</li> <li>— for other pre-shaped growing media, expressed as size in at least two dimensions;</li> <li>— for other growing media, expressed as total volume;</li> <li>— except for pre-shaped growing media, quantity expressed as volume of materials with a particle size greater than 60 mm, when present;</li> </ul>	(d) The quantity (in volume or number of slabs, in case of mineral wool, specifying the dimensions of the slab)
<b>Moisture an dry matter</b>	(e) range of moisture content or the dry matter content expressed as % by mass	(e) Range of moisture content	(e) Range of moisture content	(e) range of moisture content or the dry matter content expressed as % by mass	(e) Range of moisture content

Topic	Soil improvers and mulches			Growing media	
	Proposed criterion 7.1 Soil improvers including mulches	Currently valid criteria 12.1 and 12.2		Proposed criterion 7.2	Currently valid criterion 12
		Soil improvers (12.1)	Mulches (12.1)		
<b>Main components</b>	(f) a list of all components above 5 % by product weight or volume in descending order of magnitude by dry weight; where the component is a substance or a mixture, it shall be identified as specified in Article 18 of Regulation (EC) No 1272/2008	(f) The main materials (those over 5 % by weight) from which the product has been manufactured	(f) The main materials (those over 5 % by volume) from which the product has been manufactured	(f) a list of all components above 5% by product weight or volume in descending order of magnitude by dry weight; where the component is a substance or a mixture, it shall be identified as specified in Article 18 of Regulation (EC) No 1272/2008	(f) The main materials (those over 5 % by volume) from which the product has been manufactured
<b>Storage</b>	(g) the recommended conditions of storage and the recommended 'use by' date	(g) The recommended conditions of storage and the recommended 'use by' date		(g) the recommended conditions of storage and the recommended 'use by' date and production date	(g) The recommended conditions of storage and the recommended 'use by' date
<b>Safe handling</b>	(h) guidelines for safe handling and use, including any relevant information on measures recommended to manage risks to human, animal or plant health, to safety or to the environment	(h) Guidelines for safe handling and use	(g) Guidelines for safe handling and use	(h) guidelines for safe handling and use, including any relevant information on measures recommended to manage risks to human, animal or plant health, to safety or to the environment	(h) Guidelines for safe handling and use

Topic	Soil improvers and mulches			Growing media	
	Proposed criterion 7.1 Soil improvers including mulches	Currently valid criteria 12.1 and 12.2		Proposed criterion 7.2	Currently valid criterion 12
		Soil improvers (12.1)	Mulches (12.1)		
<b>Intended use</b>	(i) instructions for intended use, including application rates, timing and frequency, and target plants or mushrooms	(i) A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles)	(h) A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles)	(i) instructions for intended use, including application rates, timing and frequency, and target plants or mushrooms	(i) A description of the purpose for which the product is intended and any limitations on use, including a statement about the suitability of the product for particular plant groups (e.g. calcifuges or calcicoles)
<b>pH</b>	(j) pH	(j) pH (reference of the test method used)	(i) pH (reference of the test method used)	(j) pH	(j) pH (EN 13037)
<b>Electrical conductivity</b>	(k) electrical conductivity given as mS/m, except for mineral wool			(k) electrical conductivity given as mS/m, except for mineral wool	(k) Electrical Conductivity (1:5 extraction)

Topic	Soil improvers and mulches			Growing media	
	Proposed criterion 7.1 Soil improvers including mulches	Currently valid criteria 12.1 and 12.2		Proposed criterion 7.2	Currently valid criterion 12
		Soil improvers (12.1)	Mulches (12.1)		
<b>Carbon, nitrogen, phosphorus and potassium</b>	<p>(l) organic matter content or organic carbon (Corg) content, expressed as % by mass;</p> <p>(m) minimum amount of organic nitrogen (Norg), expressed as % by mass, followed by a description of the origin of the organic matter used;</p> <p>(n) the ratio of organic carbon to total nitrogen (Corg/N);</p> <p>(o) the following nutrients shall be declared, expressed as % by mass, if exceeding 0.5% by mass: nitrogen (N), phosphorus pentoxide (P2O5) and potassium oxide (K2O).</p>	<p>(k) Organic carbon content (%), total nitrogen content (%) and inorganic nitrogen content (%) (reference to the test method used);</p> <p>(l) Carbon/Nitrogen ratio;</p> <p>(m) Total phosphorus (%) and total potassium (%) (reference to the test method used)</p>		<p>(m) nitrogen (N) extractable by CaCl2/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l;</p> <p>(n) phosphorus pentoxide (P2O5) extractable by CaCl2/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 20 mg/l;</p> <p>(o) potassium oxide (K2O) extractable by CaCl2/DTPA (calcium chloride/ diethylenetriaminepentaacetic acid; 'CAT-soluble'), if above 150 mg/l</p>	
<b>Germination and grow inhibition</b>					<p>(l) Germination inhibition (EN 16086-1);</p> <p>(m) Growth inhibition (EN 16086-1)</p>

Topic	Soil improvers and mulches			Growing media	
	Proposed criterion 7.1 Soil improvers including mulches	Currently valid criteria 12.1 and 12.2		Proposed criterion 7.2	Currently valid criterion 12
		Soil improvers (12.1)	Mulches (12.1)		
<b>Stability of organic matter</b>		(n) For products for non-professional use, a statement about the stability of organic matter (stable or very stable)	(j) A statement about the stability of organic matter (stable or very stable), where applicable, for non-professional uses	(l) a statement about the stability of organic matter (stable or very stable)	(n) A statement about the stability of organic matter (stable or very stable)
<b>Recommended methods of use</b>		(o) A statement on recommended methods of use	(k) A statement on recommended methods of use		(o) A statement on recommended methods of use
<b>Application rate</b>		(p) In non-professional applications: recommended rate of application expressed in kilograms of product per unit surface area (m <sup>2</sup> ) per annum	(l) In non-professional applications: recommended rate of application expressed in mm		
<b>Professional use of mineral growing media</b>				(q) a statement about the professional horticultural application, in the case of mineral growing media	(p) For mineral growing media, a statement about the professional horticultural application
<b>Chromium total</b>				(p) Chromium total (Cr total), quantified as set in criterion 4.1 (b), if above 200 mg/kg DM	

## **4 Table of comments**

The following link sends the reader to the JRC's website of the product group growing media and soil improvers. The document entitled 'Table\_of\_Comments\_EUEL\_GMSI\_Final' contains all comments received during the consultations with stakeholders, and JRC responses:

<https://susproc.jrc.ec.europa.eu/product-bureau//product-groups/450/documents>



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## **List of abbreviations**

BREF	Best Available Techniques Reference Document
CMC	Component Material Category
ECN	European Compost Network
ETS	Emissions Trading System
FPR	Fertilising Products Regulation
GO	Guarantees of Origin
PFC	Product Function Category
SVHC	Substance of Very High Concern

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