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IMPACT ASSESSMENT REPORT

Accompanying the document

proposal for a Regulation of the European Parliament and of the Council

amending Regulation (EU) 2019/1009 as regards the digital labelling of EU fertilising products

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Glossary

Term or acronym	Meaning or definition
CAP	Common Agricultural Policy
CLP	Classification, labelling and packaging of substances and mixtures (CLP) Regulation
DESI	Digital Economy and Society Index
DPP	Digital Product Passport
EU	European Union
FPR	Fertilising Products Regulation, Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019
EC Fertilisers Regulation	Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003, predecessor to the FPR
NGO	Non-Governmental Organisation
The Nitrates Directive	Council Directive 91/676/EEC of 12 December 1991
PFC	Product Function Category
SDGs	Sustainable Development Goals
SMEs	Small and medium-sized enterprises
TFEU	Treaty on the Functioning of European Union

1. INTRODUCTION

Fertilising products are substances, mixtures, micro-organisms or any other materials, applied on plants or their rhizosphere, or constituting the rhizosphere, for the purpose of providing the plants with nutrients or improving their nutrition efficiency.

Manufacturers of fertilising products may choose freely if to place on the market their products as:

1. **harmonised products**, if they comply with Regulation (EU) 2019/1009[1], hereafter 'the FPR'[2] ('**EU fertilising products**'); such products move freely in the internal market; or
2. **non-harmonised products**, in accordance with national rules applicable in the EU country where they market the products; such products may move within the EU in accordance with the mutual recognition rules[3].

This impact assessment concerns **the digitalisation of the labelling of EU fertilising products**[4].

1.1. Political Context

Commission President von der Leyen stressed in her political guidelines the need for Europe to lead the transition to a healthy planet and a new digital world[5]. In **the Green Deal**[6], the Commission announced its intention to address the twin challenge of the green and the digital transformation. Soon after, **the COVID-19 pandemic** has radically changed the role and perception of digitalisation in our societies and economies and accelerated its pace. In 2020, 22% of EU enterprises had e-commerce sales, a 1-percentage point (pp) increase compared with 2019 and 6 pp up from 13% in 2010[7]. The pandemic revealed the need for a faster transition towards a more digital economic and industrial model, in order to enhance Europe's drive towards sustainable competitiveness[8].

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[1] Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003, OJ L 170, 25.6.2019, p. 1.

[2] For more details on the aims and the most important new elements introduced by Regulation (EU) 2019/1009 in the field of fertilising products, see Annex 5.

[3] Articles 34-36 TFEU and Regulation (EU) 2019/515 of the European Parliament and of the Council of 19 March 2019 on the mutual recognition of goods lawfully marketed in another Member State and repealing Regulation (EC) No 764/2008, OJ L 91, 29.3.2019, p. 1.

[4] See Annex 1 for procedural details.

[5] Available here political-guidelines-next-commission_en_0.pdf (europa.eu)

[6] Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, COM/2019/640, 11.12.2019.

[7] Online sales continue to grow among EU enterprises - Products Eurostat News - Eurostat (europa.eu)

[8] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery, COM(2021) 350, 5.5.2021.

The 2021 Digital Compass Communication[9] maps out a clear path towards a common vision and actions for Europe to succeed in the Digital Decade. It puts forward the 'digital by default' principle and outlines a way ahead for broad-based digitalisation of society.

In its **Work Programme 2022**[10], the Commission indicated that it would follow up on its path to the digital decade to deliver on the EU's digital transformation by 2030. The Commission is determined to lead the way in the global race for trustworthy, secure and human-centric technology.

With a particular focus to **the agricultural sector**, its digital transformation will facilitate cooperation across the value chain, support farmers, and offer opportunities for innovative SMEs. Technologies, such as artificial intelligence (AI), robotics, the Internet of Things (IoT), Edge Computing, 5G, blockchain and supercomputing, all have the potential to make agriculture more efficient, sustainable, and competitive. 26 European countries signed a Declaration of cooperation on 'A smart and sustainable digital future for European agriculture and rural areas'[11] to take a number of actions to support the successful digitalisation. It recognises the potential of digital technologies to help tackle important and urgent economic, social, climate and environmental challenges facing the EU's agro-food sector and rural areas.

The more efficient use of, in particular, fertilisers is an important element **in the Farm to Fork Strategy**[12], which specifies a target of 50% reduction of nutrient losses and aims to reduce fertiliser use by 20% by 2030. Use of digital tools is a key enabler in this process, for example in tracking the Gross Nutrient Balances baselines and targets for countries and collection of data at regional level.

The digitalisation of the labels of EU fertilising products complements the efforts done towards the digitalisation of the agriculture.

Given the links to the goals of the European Green Deal, in particular, nutrient loss prevention and the green and digital transition of the EU industry, the objectives (see section 4) also contribute to the achievement of the United Nations Sustainable Development Goals (SDGs). Four of which are directly relevant for this initiative: SDG #3 Good health and well-being, SDG #6 Clean water and sanitation, SDG #9 Industry, innovation and infrastructure, SDG #12 Ensure sustainable consumption and production patterns (see Annex 3, Part 3 for more details).

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[9] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2030 Digital Compass: the European way for the Digital Decade, COM(2021)118, 9.3.2021.

[10] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Commission work programme 2022, Making Europe stronger together, COM(2021) 645, 19.10.2021.

[11] EU Member States join forces on digitalisation for European agriculture and rural areas | Shaping Europe's digital future (europa.eu)

[12] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0381&from=EN

There is a **general trend of digitalisation of the labels** or documents accompanying products. Rules are in place for construction products[13] and medical devices[14] or under preparation for batteries[15], detergents[16], cosmetics[17], hazardous chemicals[18].

The coherence of all the EU initiatives (i.e. for CLP, Detergents, Fertilising Products and Cosmetics) is one of the Commission's objectives. Besides the advantages for the users of these various chemical products, coherence is absolutely necessary for products covered by two initiatives at a time (fertilising products may also be labelled according to CLP, so the two sets of rules have to work together).

As a first step to ensure this coherence, the digital labelling will only be allowed subject to some fundamental principles (please see section 5.3.1 of the report) in order to protect end-users and to ensure the accessibility, availability and quality of digital information. The digital principles proposed across the different initiatives will be consistent, and support creating a level playing field for the chemicals industry.

In all digital labelling of chemicals coherence will further be ensured as regards to the overall architecture of each piece of regulation. In each initiative it will be proposed what information could be provided only digitally (adapted to the specific requirements of each Regulation).

In all initiatives concerning digital labelling of chemicals (i.e. under the CLP, Detergents, Fertilising Products and Cosmetics Regulations) consistency and synergies have been ensured across the different proposals throughout the assessment and drafting processes. The Commission will ensure coherence in supplementing the general principles via delegated acts, in a second step, after the adoption of the amendments needed by the European Parliament and the Council.

A policy initiative relevant for fertilising products is also the proposal for a Regulation on **Ecodesign for Sustainable Products**[19], which will establish a Digital Product Passport (DPP). The DPP gathers data on a product and its value chain[20] to support sustainable production, to enable the transition to circular economy, to provide new business opportunities, to support consumers in making sustainable choices, and to allow authorities to verify compliance with legal obligations. The DPP, in the version proposed by the Commission, will introduce the mandatory adoption of digital ways of communicating information about all regulated products, including fertilising products

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[13] Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, OJ L 88, 4.4.2011, p. 5.

[14] Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC, OJ L 117, 5.5.2017, p. 1.

[15] Proposal for a Regulation of the European Parliament and of the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020, COM(2020)798.

[16] Detergents – streamlining and updating the EU rules (europa.eu)

[17] EU chemicals strategy for sustainability – Cosmetic Products Regulation (revision) (europa.eu)

[18] Chemicals – simplification and digitalisation of labelling requirements (europa.eu)

[19] Proposal for a Regulation of the European Parliament and of the Council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC, COM/2022/142, 30.03.2022.

[20] Circular economy action plan (europa.eu)

(for more information regarding the interplay between the two initiatives see section 6.1.7).

1.2. Legal context

The FPR has been adopted in 2019 and starts applying as of 16 July 2022. It replaces the harmonisation rules laid down in Regulation (EC) No 2003/2003 on fertilisers (EC Fertilisers Regulation)[21].

EU fertilising products may be covered by several EU rules and therefore they are accompanied by the following:

- information regarding the economic operators (manufacturers, importers, distributors), traceability requirements, CE mark, in accordance with Articles 6(5) and (6), 8(3), 11 and 17 of the FPR;
- the labelling requirements laid down in Annex III to the FPR;
- the labelling requirements under CLP Regulation (EC) No 1272/2008[22], if the product contains a substance classified as hazardous in accordance with this Regulation;
- in some cases, other information, such as the ECOLABEL, in the conditions laid down in Decision (EU) 2015/2099[23] or information on compatibility with organic farming, in the conditions laid down in Implementing Regulation (EU) 2021/1165[24] (these rules are not applicable to all fertilisers).

This impact assessment looks into the possible digitalisation of **the labelling requirements included in Annex III to the F**PR, which represents the bulk of the information included on the label of an EU fertilising product. Annex III lays down:

- general labelling requirements, applicable to all EU fertilising products, such as indicating the quantity or the ingredients;
- specific labelling requirements, for each of the seven product function categories (PFCs): fertilisers, soil improvers, liming materials, growing media, inhibitors, plant biostimulants and blends.

The correct labelling of a fertilising product is a condition for its CE-marking. It is the responsibility of the manufacturer, meaning the economic operator producing the product or having it designed and placing it on the market on its own name. Under specific

[21] Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers, OJ L 304, 21.11.2003, p. 1.
[22] Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, OJ L 353, 31.12.2008, p. 1.
[23] Commission Decision (EU) 2015/2099 of 18 November 2015 establishing the ecological criteria for the award of the EU Ecolabel for growing media, soil improvers and mulch (notified under document C(2015) 7891), OJ L 303, 20.11.2015, p. 75.
[24] Commission Implementing Regulation (EU) 2021/1165 of 15 July 2021 authorising certain products and substances for use in organic production and establishing their lists, C/2021/5149, OJ L 253, 16.7.2021, p. 13.

circumstances, importers or distributors, which package or repackage products, may also label products (see also Section 2.5 under driver 5).

Fertilising products must have either a **physical label and/or an accompanying leaflet**:

- where a product is supplied in a package, the information appears on a label affixed to that package; if the package is too small to contain all the information, the information that cannot be provided on the label has to be provided in a leaflet accompanying that product;
- where the product is supplied without packaging, all the information is provided in a leaflet.

The information must be provided **in a language easily understood** by end-users, as determined by the national authorities of the EU country where the product is marketed. As a rule, the information must be provided in the official language(s) of the respective EU country. Some EU countries accept a written agreement from professional users to receive a product labelled in another language than the official one(s), for example, in English.

A comprehensive list of all labelling requirements is included in Annex 7.

The Commission published guidance and examples concerning the visual appearance of the labels referred to in Annex III to the FPR (Annex 6)[25]. An example of a label can be found in Annex 8.

1.3. Market context

1.3.1. *1.3.1. The fertilising products industry*

According to 2019 EUROSTAT data[26] the EU fertilising products industry has an annual turnover of around €31 billion. It employs approximately 100,000 people.

There are about 1347 enterprises active in the inorganic fertilisers category, and 3595 in fertilising products overall. According to the stakeholders survey launched as part of the 'digital labelling study'[27], some 91.3% of enterprises either carry out the whole labelling process in-house (59.4% out of 69 responses), or partly (31.9% out of 69 responses).

A handful of enterprises accounts for some 80% of the turnover for inorganic fertilisers, while 99.8% of enterprises are SMEs for the other categories of products. Production of inorganic fertilisers is concentrated in a few EU Member States[28], while the distribution of enterprises between large companies and SMEs in other categories of fertilising products than inorganic fertilisers is more balanced within the EU. Inorganic fertilisers

[25] Communication from the Commission concerning the visual appearance of the label on EU fertilising products referred to in Annex III to Regulation (EU) 2019/1009 of the European Parliament and of the Council, 2021/C 119/01 C(2021)726, OJ C 119, 7.4.2021, p. 1.

[26] Available at: https://ec.europa.eu/eurostat/web/structural-business-statistics/data/database

[27] CSES (Jan Smit, Mark Whittle and James Rampton) and PPMI (Zalan Tamas Jakab, Donatas Pocius and Arnas Aleksandravičius), Study to support the Impact Assessment on the use of digital labelling for EU fertilising products, 2022, not yet published.

[28] According to Eurostat data, nearly 60% of EU production is located in four member states: Germany (21%), France (13%), the Netherlands (12%) and Spain (11%). With Italy and Belgium it represents to 74% of EU production.

account for approximately 80% of turnover. Figure 1.3 presents the turnover shares of the different fertilising products.

Figure 1.3: EU fertilising products shares in the EU market (by turnover)

Sources: Halleux (2019), Commission (2016), Eurostat, Growing Media Europe.

More statistical data are provided in the 'digital labelling study'[29], in section 5.1.

1.4.1.1.1.3.1.1 Industrial users

Industrial users (economic operators buying EU fertilising products to make it available on the market) constitute an important element of the fertilising products industry. Blenders purchase fertilising products in order to mix and relabel them and then place them on the market as fertilising product blends. These blends are designed to be targeted at very specific uses and application methods and can be highly efficient and cost effective.

In general, the quantities of fertilising products bought and shipped tend be large – often it is in the form of truck-loads (sometimes carrying single deliveries, sometimes pallet loads) or specialised tankers for the transport of liquids, regulated by specific rules related to transport and handling of dangerous products.

However, thought the data collection phase of this Impact Assessment, obtaining data about this part of the market has proved to be a major challenge, as manufacturers tend not to distinguish between bulk shipments to blenders/ resellers and large-scale users who buy in bulk. The data provided below is based on the information provided by the main EU industry associations in the fertilising products by the digital labelling study.

- Share (turnover) of products sold to industrial users, including blenders, varies between 5 – 50% of all sales;
- Bulk sales to end-users varies between 15-40% of all turnover.

1.3.2. *1.3.2. The EU agriculture*

According to the information available on EUROSTAT for the period 2005-2016, EU farms used 173 million hectares of land for agricultural production in 2016, 39 % of the total land area of the EU. More than half of this land was used by large farms, with more than 100 ha. The number of farms in the EU diminished with approximately a quarter in the same period, 85% of them being small farms with less than 5 ha. The amount of land

[29] CSES (Jan Smit, Mark Whittle and James Rampton) and PPMI (Zalan Tamas Jakab, Donatas Pocius and Arnas Aleksandravičius), *Study to support the Impact Assessment on the use of digital labelling for EU fertilising products*, 2022, not yet published.

used for production has remained steady[30]. Farmers were typically male and relatively old, according to 2016 statistics[31].

Professional users of fertilising products include primarily the farming and horticultural community. In terms of volume and value of fertilising products used, the largest share of users of fertilising products is the agricultural sector – farms which, according to some estimates, represents 80—90% of the value of the overall market.[32] Non-professional users of fertilising products include hobby gardeners.

2. 2. PROBLEM DEFINITION

2.1. 2.1. Preliminary remarks

The FPR starts applying as of 16 July 2022. As there is no experience with the application of the FPR, a number of assumptions have been made in this impact assessment based on the information available on the application of the EC Fertilisers Regulation. This has two inconveniences:

- firstly, the previous **EC Fertilisers Regulation followed a different legislative approach** where types of products were described in detail in the Regulation and the labelling requirements attached were less extensive; the FPR sets out a more flexible framework and has higher ambitious for the protection of health and the environment, thus more extensive labelling requirement.
- secondly, **EC Fertilisers Regulation covered fewer types of products,** in particular inorganic fertilisers and certain liming materials. The FPR covers seven PFCs, as explained in Annex 7. The extrapolation of the analysis to other categories of products might not be completely accurate.

In addition, **it remains the free choice of manufacturers whether to apply the FPR or rely on national rules**. Therefore, it is difficult to estimate the number of economic operators who would make this choice as of 16 July 2022 or in the following years.

2.2. 2.2. What are the problems?

Based on the input gathered from stakeholders during the preparation of the implementation of the FPR and the evidence gathered during the digital labelling study[33], the following problems have been identified:

1. EU fertilising products' labels are difficult to read for users;
2. EU fertilising products' labels are difficult to manage for economic operators.

[30] Farms and farmland in the European Union - statistics - Statistics Explained (europa.eu)
[31] Farmers and the agricultural labour force - statistics - Statistics Explained (europa.eu)
[32] CSES and PPMI study mentioned before, see section 5.1.2.
[33] CSES and PPMI study mentioned before.

The relationship between drivers of problems, the problems and their consequences is set out in problem tree table 2.1

Table 2.1: Problem tree- Links between drivers, problems and consequences

Drivers	Problems	Consequences
Driver 1: The extensive labelling requirements under the FPR leads either to overcrowded labels or to labels complemented by leaflets **Driver 2:** there are no rules regarding the voluntary digitalisation of the labels, so there are no minimum standards to ensure the quality of the information provided digitally	**Problem 1**: labels are difficult to read for users	**For users**: as it is difficult to distinguish between essential and less relevant information, users may end up using wrongly fertilising products, with consequences on the quality/quantity of their crop **For the environment**: sub-optimal use of information important for the protection of the environment can lead to over-fertilisation **For society:** sub-optimal realisation of health & safety
Driver 1 (as above): The extensive labelling requirements under the FPR take a lot of space **Driver 3:** Some labelling information changes frequently **Driver 4:** some economic operators redo the labels before the product reaches the end-users, because the products are either blended, repackaged or rebranded. **Driver 5:** products sold in bulk need leaflets personalised for each customer which implies unjustified administrative burden given also the specificity of the bulk sales	**Problem 2**: labels are difficult to manage for economic operators	Increased labelling costs **for the industry** due to: • fewer languages can be included on the package for products, which are CE marked with the main purpose of circulating freely in all EU countries. • frequent reprinting of labels either because of the frequent changes of the information or the need to relabel and • the difficulty to anticipate exactly when a new label is needed so that to avoid wasting already printed labels No level playing field for operators opting for the digitalisation of labels Increased packaging waste with potential negative effects on **the environment**

2.3.1. *2.2.1. Problem 1- Labels are difficult to read for users*

The FPR contains numerous labelling requirements in order to ensure that the users are correctly informed about the agronomic efficiency of the product, the content of the

product, the safety of the product and information for the user after purchase, such as storage conditions or use instructions[34]. Yet, overcrowded labels are difficult to read by product users. This could make it difficult for product users to find essential product information, particularly on safety. At present, evidence from studies by industry and feedback from the public consultation suggests that not all product users read the information on the label and understand it, in particular non-professional users[35].

For users, it becomes difficult to distinguish between essential and less relevant information, and users may end up using wrongly fertilising products, with consequences on the quality/quantity of their crop. Incorrect use of products also has impacts on the environment, as a potential outcome of unclear labels is over-fertilisation. For society, this could mean sub-optimal realisation of health and safety. So, although currently all information is on a physical label, including safety information, the labels are considered overloaded and therefore protection of on the environment and human health is destitute.

This problem is further linked with the issue that the label contains overly technical language on a product, which non-professional users often do not understand[36]. This contributes to 'information overload' and results in users and readers 'giving up' reading the label (due to limited information search and processing capacities according to behavioural economics). As a result, they might miss the information that is essential for them to be able to use the product in the best and safest manner for themselves and the environment[37].

The use of multilingual labels might mean that font sizes are reduced to a smaller font size to be used to communicate information, makes it more difficult for users to identify the information relevant to them. As the labelling information, according to the regulation should be clear, understandable and intelligible, this could further lead to non-compliance with the FPR.

The readability of the labelling information is also affected in case of small packages when part of the information is included in the label and the remaining information in a separate leaflet. Providing information in various places makes it difficult to identify the information needed.

2.3.2. *2.2.2. Problem 2- Labels are difficult to manage for economic operators*

The extensive labelling requirements under the FPR, however necessary and useful they are, lead to either overcrowded labels or artificial separation of the information (a part of it is provided on the label and the other part in a leaflet).

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[34] See Annex 6 for detailed information on the labelling requirements.
[35] CSES and PPMI study mentioned before, Section 2.2.5.
[36] Most non-professional do not use more technical information subcategories (e.g. neutralising value, chelating and complexing agents, list of ingredients), because it is not relevant or they do not understand such information.
[37] CSES and PPMI study mentioned before, Section 3.2.5.

Findings from the stakeholder survey on policy options as part of the digital labelling study (also referred to as the 'policy option survey') highlight negative feedback from industry in terms of costs and benefits of the status quo. There are concerns that the information requirements are detailed in the FPR and industry stakeholders expressed concerns that they would not be able to manage adequately to put all the information required onto a physical label. Both the capital costs and human resource costs of producing physical labels were viewed as being quite high[38]. The current one-off costs associated with the purchase of a machine printing labels was estimated to cost circa EUR 20,000/ factory by a medium-sized company in Ireland[39]. Such capital investment was seen as necessary due to the increased labelling requirements under the FPR. However, there can be the possibility for businesses to outsource the printing of labels to specialist printing companies that provide labelling services for other products. In those cases, such one-off costs would not be incurred.

The recurring cost of a physical label and leaflet combined for a 50 kg bag was seen as being potentially excessive under the FPR[40], if the labelling requirements are not digitalised, but no precise quantification could be provided. The digital labelling study estimated the costs of providing an additional leaflet with the required label information with each bag as being 0.25 – 0.35 EUR on average[41].

In addition, industry stakeholder voiced concerns regarding additional requirements for separate storage facilities for different languages with complicated logistics. Such factors have cost implications on the industry[42].

The lack of harmonisation rules on the provision of labelling information by digital means could also lead to different national rules or practices that would create difficulties in the free movement of EU fertilising products in the internal market.

An environmental consequence is the increased waste of labels and packaging as all the labelling requirements, including those that are considered 'frequently changing' remain on the physical label, there will be frequent changes of the labels. In addition, there would not be enough space for multilingual labels. When using separate bags produced for different markets (with different languages), those need to be estimated up front often with long lead times. It is not always possible for economic operators to predict the quantities to be sold in different markets before certain changes of the label are needed or what languages are required. As a result, this practise could result in excess printed product bags and labels, which are disposed of.

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[38] Expressed by several fertilising product producers during the interviews of the digital labelling study.
[39] Example used, as not enough data was collected to estimate a general figure, see Annex 9 for more details on the case study.
[40] As found during the interviews as part of the CSES and PPMI study mentioned before. For more details please see section 5.2.2.
[41] CSES and PPMI study mentioned before, Section 5.3.1.
[42] For a full breakdown of the costs associated with managing label information please refer to Annex 4.

2.3. What are the problem drivers?

2.3.1. *2.3.1. Driver 1: extensive labelling requirements*

The label must at least contain the following information, according to Annex III to the FPR:

- the agronomic efficiency of the product, such as content of nutrients in a fertiliser;
- the content of the product, such as quantity or physical unit (granules, powder, etc.);
- the safety of the product, in a broad sense, such as information on nitrogen and phosphorus relevant for the implementation of the measures to protect the environment set out in the Nitrates Directive[43];
- information used mainly after purchase, such as storage conditions or use instructions.

The labelling requirements in the FPR are much more extensive compared to the labelling requirements in the EC Fertilisers Regulation[44].

Such extensive information is necessary because:

- The label must accommodate **the needs of different categories of readers**:
    - professional users (such as farmers), mostly interested in agronomic information, and less in use instructions as they know how to use the products and generally either rely on technical advice from consultants or are very familiar with the products they use[45] [46].
    - The non-professional users (hobby gardeners) are less interested in various agronomic characteristics, and more interested in detailed use instructions[47].
    - The conformity assessment bodies and market surveillance authorities use the labelling elements so that they can easily identify the relevant legal requirements applicable to the respective product in order to check their compliance.

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[43] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources, Official Journal L 375 , 31/12/1991 p. 1.

[44] In Annex 7 in the third column, it is mentioned if corresponding labelling requirements are laid down in EC Fertilisers Regulation for the categories of products covered by that Regulation.

[45] CSES and PPMI study mentioned before, Section 52.1.3.

[46] In the case of professional use of plant biostimulants, for example, the sale is linked with the distributor/ consultant/ fertilisation report. The professional user knows the products, the conditions of use, because of accessing a technical data sheet, before ordering the product.

[47] Non-professional users in general are more reliant on labelling information. Primarily, they use information relevant after purchase as they are not as familiar with fertilising products as professionals are. Most non-professional do not use more technical information subcategories (e.g. neutralising value, chelating and complexing agents, list of ingredients), because it is not relevant or they do not understand such information.

- The label includes information used **at different points in time**: before the purchase of the product, before or during its use or even for its disposal.
- The use of fertilising products may vary significantly depending on external factors, such as the climatic conditions, type of soils, type of crops, season. Therefore, **use instructions must be detailed**, in order to be meaningful.
- Fertilising products are **at the beginning of the food chain**. Therefore, the label holds information to ensure that their use will not compromise the crops' quality.
- The use of fertilising products may have **an impact on the environment**. Therefore, various labelling requirements are needed to reduce negative impacts.

2.3.2. *2.3.2. Driver 2: there are no rules regarding the voluntary digitalisation of the labels*

According to the public consultation, more than two-thirds of manufacturers (100 out of 138 respondents) provide information about their products online, but only 26% (47 out 179) of them provide online the same information as the one included on the physical label.

If an economic operator decides to provide information digitally, there are no rules on how this has to be done. Therefore, there are no guarantees that the user will receive all the labelling requirements in the digital format and not only a selection of the respective information. Such information could be mixed with marketing data, thus making more difficult the identification of the essential information in the digital format.

2.3.3. *2.3.3. Driver 3: some labelling information changes frequently*

Some of the details to be included on the label are subject to frequent changes. The frequency with which information on the label changes is an important trigger[48] for updating and revising labels – which might mean that existing bags on which the information has been pre-printed, or labels already produced, become redundant and have to be discarded and disposed of. For instance, for organic fertilisers, the content of the organic carbon may vary from one batch to another, depending on the quality of the input materials used. Therefore, it is useful to identify what information changes frequently and to consider whether that can be removed from the physical label and be digitalised in order to economise on redundant labels, bags and the resultant waste and potential harm to the environment from disposal of such labels and bags.

This issue was mentioned in the course of the interview programme by several major fertilising product manufacturers who pre-order bags, by industry associations of fertiliser producers responding to the inception impact assessment, as well as during the Expert Workshop where frequently changing information as presented in the

[48] in response to a stakeholder survey, manufacturers indicated that it is somewhat harder to manage the frequently changing information categories on fertilising labels than the amount of labelling information in itself (33% compared to 29%, out of 62 responses).

spreadsheets (see Annex 7) was validated. For some smaller economic operators who print their own labels in-house this was found to be less of an issue[49].

For a comprehensive overview of all the labelling requirements subject to frequent changes, see the fifth table column in Annex 7.

2.3.4. *2.3.4. Driver 4: Some EU fertilising products change their labels before reaching the end-users*

EU fertilising products may be bought by industrial users, meaning economic operators who are not end-users. The following categories of industrial users have been identified:

1. Blenders,
2. Importers or distributors placing products on the market under their own name or brand (they assume the role of a manufacturer and the producer of the product as such is no longer mentioned on the label) and
3. Importers or distributors packaging or repackaging products, without assuming the role of a manufacturer (for instance, they may repackage products in smaller packages, mention the name of the producer on the label and their own name as repackagers).

On the first category, the FPR creates extensive opportunities for the placing on the market of fertilising product blends. Blends are products obtained by mixing two or more EU fertilising products without changing the nature of the respective products. Blenders:

- buy various EU fertilising products, which are already labelled and which successfully passed a conformity assessment procedure;
- mix them without changing their nature;
- perform a limited conformity assessment procedure of the resulting blend with the scope of proving that no change in nature occurred and
- Re-label the blend by including the information requested for the component products, presented in relation to the blend itself.

On the second and third categories, importers or distributors buy EU fertilising products and relabel them before further selling. Rebranding seems to be a practice used extensively by the industry given the big interest shown by the industry in the legal rules applicable to this situation[50]. As regards packaging, as an example, ammonium nitrate fertilisers of high nitrogen content may be sold in bulk to importers or distributors but have to be packaged before being sold to the end-users.

[49] CSES and PPMI study mentioned before, Section 2.3.2.
[50] See the documents and recording of the info session for industry 'How to CE-mark your products', 23 May 2022. More than 1300 participants registered for this event and many questions have been sent in advance regarding this issue.

In all the three scenarios, the industrial users have to re-do the labels before selling the products. This increases the labelling costs for the industry as a whole, with no benefits for end-users.

More generally, in some cases, manufacturers impede or limit distributors' ability to source goods from other EU countries (also known as territorial supply constraints) than the one in which they are based. In some instances, distributors operate parallel trade and need to re-label the products (often, because of linguistic and labelling requirements). A study carried out for the Commission[51] found out through interviews that many distributors and manufacturers organise their cross-border operations in markets that share the same languages, such as in Benelux countries, France and Belgium, and Austria and Germany. Similar arrangements can be seen in countries with similar and mutually understandable languages, such as in the Scandinavian market. In the same way, different labelling practices regarding other aspects than language, such as eco-labels, might cause additional labelling costs. Digital labelling could make it easier and economically more interesting to engage in parallel imports.

2.3.5. *2.3.5. Driver 5: products sold in bulk need personalised leaflets*

Fertilising products are also sold in bulk. Bulk products are predominantly used by professional users, as they are more likely to buy in big quantities (e.g. 500 kg – 1000 kg of products)[52]. In such a case, manufacturers include the labelling requirements in a leaflet.

Difficulties in implementing this obligation of providing a leaflet with all the labelling information have been flagged[53] because the quantity of the product sold in bulk has to be included in such a leaflet. Or, by definition, the quantity of a product sold in bulk varies with each sale and is sometimes known just before the deal is concluded.

In addition, a leaflet accompanying products sold in bulk does not necessarily fulfil the same function as a label attached to a package. Immediate access to the labelling requirements is not guaranteed given the physical separation between a leaflet and a product.

2.4. How likely are the problems to persist?

Without any policy intervention, the problems associated with labels that are difficult to read and manage will subsist given that their drivers are linked to provisions of the FPR.

As FPR applies only as of 16 July 2022, it has been impossible to predict the percentage of enterprises opting for FPR rules compared to those opting for national/mutual recognition rules. This will be determined in the first report on the application of the FPR

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[51] Half of EU fast moving consumer goods sellers experience supply constraints based on their location (europa.eu)
[52] CSES and PPMI study mentioned before, Sections 5.2.2.3 and 5.2.2.5.
[53] CSES and PPMI study mentioned above, Section 5.3.1.2.

in 2026. Even so, it will present the picture at a certain point in time, and not necessarily how it would evolve. The decision to opt for the harmonisation rules is neither irreversible nor subject to a deadline. Therefore, manufacturers can make this choice anytime and may also change this decision depending on their interests. It is estimated that the 2003 Fertilisers Regulation[54], covered 50% of inorganic fertilisers available on the EU market, while the other 50% are known as 'national fertilisers' and can circulate within the EU based on meeting the equivalence of applicable national requirements under the mutual recognition principle and the 2019 Regulation on Mutual Recognition[55].

As the 2003 Fertilisers Regulation only covers inorganic (mineral) fertilisers, the percentage of EU fertilising products covered by the FPR is expected to increase. One of the main drivers of adopting the FPR has been to open the market to more innovative products, thereby attracting more manufacturers and boosting the internal market.

The social, economic and environmental consequences are expected to grow because:

- Taking opportunity of the free movement of fertilising products on the internal market, under the FPR, more and more manufacturers will most likely make the choice to rely on the harmonisation rules in the coming years, given the advantages of the CE-marking;

- a growing number of economic operators will adopt digital labelling in different formats in the context of e-commerce or to better promote their products. This will further accentuate the already envisaged discrepancies, as economic operators will have no obligations in terms of the information to be provided digitally and the way to do it.

3. 3. WHY SHOULD THE EU ACT?

3.1. Legal basis

The FPR is based on Article 114 TFEU on the approximation of national rules for the establishment and well-functioning of the internal market. This initiative concerning possible amendments to the FPR would have the same legal basis.

This initiative is subject to the shared competence of the EU, and therefore the subsidiarity and proportionality principles apply.

3.2. Subsidiarity: Necessity of EU action

This initiative aims to improve communication of the information on the label of fertilising products to facilitate their free movement in the internal market, while

[54] Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers

[55] Regulation (EU) 2019/515 of the European Parliament and of the Council of 19 March 2019 on the mutual recognition of goods lawfully marketed in another Member State and repealing Regulation (EC) No 764/2008; https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0515

maintaining the high standard of protection of human, animal and plant health, of safety and the environment.

The extensive labelling requirements are laid down in Annex III to the FPR and have to be provided on the physical label. Part of the information requested therein is subject to frequent changes and, in accordance with the same Regulation, labels of certain products have to change before reaching the end-users. The FPR is a Regulation directly applicable in all Member States. Therefore, **Member States cannot adopt efficient national measures** to improve the readability of labels or avoid their frequent changes.

The problems identified have a **strong cross-border dimension**. Inorganic fertilisers subject to EC Fertilisers Regulation are produced in a handful of EU countries[56] and products are sold all over the EU. The FPR aims both at maintaining these products within its scope and at attracting new products, which have not been previously covered by harmonisation rules.

The objective of this initiative cannot be achieved sufficiently by the Member States, but can be better achieved at Union level.

3.3. Subsidiarity: Added value of EU action

Member States could tackle at national level part of problem 2, by adopting national rules regarding minimum standards for the digitalisation of the labels, given that this issue is not yet covered in the FPR itself. Such an approach would unavoidably lead to different practices all over the EU and create obstacles in the functioning of the internal market. It could lead to inequalities in terms of potential cost savings and communication of information. It would also increase costs for industry to adapt to divergent digital labelling requirements in Member States. On the contrary, introducing at EU level the conditions for the digital label has the added value of harmonising the various practices. By creating a level playing field, such an initiative would improve the functioning of the internal market, while ensuring the high standard of protection required by the FPR.

The benefit of EU action also lies in the existence of potential economies of scale in the fertilising products industry. The harmonisation of digital labelling requirements across the EU could facilitate the use of multi-lingual labels and thus support the distribution of products with the same label in more than one Member State.

4. 4. OBJECTIVES: WHAT IS TO BE ACHIEVED?

The links between the problems identified and the objectives of this initiative are presented in Table 4.1.

[56] see footnote 26.

Table: 4.1 Links between problems and objectives

Problems	Objectives
Problem 1: labels are difficult to read because of the extensive requirements under the FPR	**General objective 1:** achieving a high level of protection of human, animal and plant health, of safety, and of the environment **Specific objective 1:** Improve the readability of the labels of EU fertilising products
Problem 2: labels are difficult to manage because of the extensive requirements under the FPR	**General objective 2:** Ensure the effective functioning of the Internal Market in fertilising products through harmonisation across the EU-27 **Specific objective 2:** Facilitate the managing of labels by economic operators

4.1. 4.1. General objectives

In accordance with Article 114 TFEU, the general objectives of this initiative are same as the FPR objectives.

1. **General objective 1:** achieving a high level of protection of human, animal and plant health, of safety, and of the environment

   A detailed assessment of all labelling requirements in Annex III has been done and all the information linked to the protection of human, animal and plant health, of safety and of the environment has been identified and classified as 'safety' (S). For a comprehensive overview, see the fourth column in Annex 7. Some policy measures **keep on the label all the Safety labelling requirements**, while others keep all those requirements linked to imminent risks. For more details, see Section 5.3 on policy measures.

2. **General objective 2:** Ensure the effective functioning of the Internal Market in fertilising products through harmonisation across the EU-27

   Some fertilising products manufacturers are already using digital labelling on a voluntary basis, in addition to the physical label. By defining the general digital labelling principles (see section 5.3.1.) that have to be followed by all manufacturers who opt for the digital labelling of EU fertilising products, as well as what information can be provided only on the digital label, this initiative would create a level playing field among economic operators and thus facilitate the free movement in the internal market.

4.2. Specific objectives

- **SO1: Improve the readability of the labels of EU fertilising products**

  The readability of labels contributes to a high protection of human, animal and plant health, safety and the environment. It can be improved by putting in place the rules needed for the digital labelling of EU fertilising products.

Yet, any such option to address this problem should also take account of **the digital divide**, which may exist for certain social groups (e.g. elderly segments of society, farmers with small holdings, others who may lack basic digital skills) or difficulty in accessing the internet (e.g. in rural areas).

- **SO2: Facilitate the managing of labels by economic operators**

  Especially in times when fertilising products are more expensive than ever before, it is important to ensure that they can circulate more freely. Extensive labelling requirements, particularly in a specific language, could impede or discourage manufacturers from applying the FPR and sell their products in other Member States and from benefiting from the economies of scale and the lower production costs that result from them.

  In the digital labelling study, during the interviews with industry representatives it was further found that those enterprises currently selling in multiple markets within the EU may face problems related to space on physical labels, as economically seen, it is better to provide one label with more languages.

5. 5. WHAT ARE THE AVAILABLE POLICY OPTIONS?

5.1. 5.1. What is the baseline from which options are assessed?

The baseline includes a brief description of the wider socioeconomic context and the relevant market and legal developments that might impact on the magnitude of the problems

5.3.1. *5.1.1 The socioeconomic context*

The fertilisers industry faces difficult challenges because of the high prices of energy and gas, as well as the availability of certain raw materials following the war of aggression of Russia against Ukraine.

Consequently, in the course of the next decade:

- Further improvements in the efficiency of the production process and the promotion of the products are to be expected;
- Industry will probably also massively invest in the production of fertilising products out of various waste streams or by-products, making good use of the circular economy opportunities in the FPR.

5.3.2. *5.1.2 Agriculture*

The efforts undertaken for the digitalisation of the agriculture will intensify.

As already indicated, commitments have been made at political level to reduce the loss of nutrients and consequently the use of fertilisers by 2030.

In the next decade, it is estimated that:

- a further concentration of the land within larger farms is to be expected, which would imply a more centralised management of fertilising products, with less obvious digital divide;
- Digital tools, including precision fertilisation by using various digital tools will be used more and more, with decisive role in nutrient use efficiency.
- Farmers will keep more and more often various registries in a digital format, including those regarding the use of fertilising products and the information needed to prove compliance with the limit-values in the Nitrates Directive[57].

5.3.3. *5.1.3 Hobby market*

The number of people in the hobby market within the EU is well over 100 million.[58]

Given the general trend to motivate non-professional users to try indoor planting, the aging of the population, the increased life expectancy, the longer growing seasons (global warming), as well as sustainability and ecological trends, it is estimated that the hobby market will continue growing in the next decade.[59]

5.3.4. *5.1.4 Digital divide*

Digital literacy is not uniform across the EU-27. It varies by age group and social group. Younger people are considerably more digitally literate than older people are. Basic computer skills have been consistently growing in most of the EU Member States.

Access to broadband internet has improved significantly in the past decade[60]. This has been driven by different factors, such as major increases in investment in fixed line and mobile broadband access[61] [62]. The increasing ubiquity of smart mobile phones has made broadband access much easier for professional and non-professional users on the move to access information about fertilising products.

Some professional users can be at a disadvantage in the context of the digitalisation of fertilising product labels because many farms are located in rural areas, which have worse internet connectivity, and farmers are often older citizens, potentially having limited digital skills[63].

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[57] The Nitrates Directive aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices.

[58] https://de.statista.com/statistik/daten/studie/171446/umfrage/besitz-eines-gartens/

[59] Gardening in Europe: Emerging Markets and Future Prospects - Euromonitor.com

[60] The Digital Economy and Society Index (DESI) | Shaping Europe's digital future (europa.eu)

[61] The Digital Economy and Society Index DESI reports on broadband internet access at national level.

[62] The most recent 2021 DESI Scoreboard found that the problem of the digital divide in rural areas may not be as pronounced today as it was 5-10 years ago due to rapid rollout of broadband, with mobile broadband making internet access widely accessible except in some rural pockets. The 2021 DESI Scoreboard found that 97% of the EU (including rural areas) provide access to either a fixed or mobile broadband connection, or both.

[63] Digital society statistics at regional level - Statistics Explained (europa.eu)

During the Covid-19 pandemic, digital divides have grown in significance, widening pre-existing inequalities and becoming a key factor of social exclusion.[64]

It is expected that in the next decade the digital divide will attenuate, given the steady progress made both in improving the digital skills and in expanding the internet access[65].

5.3.5. *5.1.5 Share of companies already embracing digitalising product information*

The digital labelling study found that there is a positive trend in digitalisation of fertilising product information generally, and labelling in particular. According to the policy options survey, 43.8% (14 out of 32 respondents) of fertilising product manufacturers already provide some labelling information digitally, primarily through 2Dcodes (QR codes) and websites or a URL link. Moreover, the targeted stakeholder survey launched as part of the digital labelling study (also referred to as the 'stakeholder survey') found that somewhat more, 65.4% of manufacturers provide information in a digital format via the physical label (17 out of 26 respondents, of these, approximately half were SMEs). Furthermore, in the public consultation 26% (47 out of 179) of respondents indicated that they provide the same information via IT or digital tools as they provide on the physical label, and 48% of respondents indicated that they provide additional/ complimentary information to that on the physical label (74% in total). These data are important data for the baseline as they suggest that between almost 50% (1798) and 75% (2696) of the 3595 enterprises in fertilising products industry are already digitalising product information to some degree, which will have an important bearing on future user take-up and the costs under the different policy options. During the data gathering process of the digital labelling study, it was found that none of the Member States have set rules on digitalisation of labels under their national fertilising product rules. This means that the manufacturers providing information digitally do so voluntarily and only on top of the rules set for physical labels (i.e. they provide the same information or additional information digitally).Furthermore, according to the Public Consultation, about half (52.1%, out of 153) of the respondents indicated that they would evaluate a shift to digital labelling of at least some product information positively: moderately positively (16.2%) or very positively (35.9%), if some information was removed from the physical label and could only be obtained via digital labels. The stakeholder survey also showed that 47.7% of manufacturers would be 'very likely' and 15.4% 'likely' to provide some of the information required under FPR in a digital format (total of 41 out of 65 responses).

Within the dynamic baseline, it is also worth noting that the percentage of enterprises operating a website is likely to increase year-on-year. EUROSTAT data shows a figure of 94% of large enterprises and 77% of SMEs (in all non-financial sectors) having a

[64] Study on post Covid measures to close the digital divide (europa.eu)
[65] See Annex 10 for more details on trends in digitalisation.

website.[66] Moreover, there has been a steady increase since 2012 when the comparable figures were 93% of large enterprises and 69% of SMEs with a website. In this context, it is likely that many enterprises will introduce digital labelling as part of a broader strategy to digitalise their operations or at least provide a website.

5.3.6. *5.1.6 Continuation of the existing legal framework*

Details of how the dynamic baseline was developed can be found in the digital labelling study, section 5.1.

The analysis of the dynamic baseline shows that:

- As the manufacturers of EU fertilising products will continue to provide on the physical label all the relevant information in Annex III to the FPR, they will have to pay the costs of frequent changes of the label and of multiple labels to cover all the official languages needed.
- Given the general trend towards encouraging increased uptake of digital labelling by EU regulators, it is estimated that the number of economic operators providing information digitally regarding their products will increase steadily.
- We assume that the European Parliament and the Council will accept digital labelling as part of the revision of the CLP Regulation, and that information requested under CLP Regulation for fertilising products containing hazardous substances will be provided digitally. The precise timing of entry into force and the labelling information considered are unknown. So, take-up of digital labelling by producers of fertilisers may therefore be influenced by the extent to which other EU legislation requires or voluntarily encourages digital labelling.
- Distributors might have to take on board the cost for the translation of the label in the official language of the EU country where they sell the products.
- Given that there are currently no general principles or rules, the users are not offered any guarantees on the quality of the information provided digitally and the digital information that is provided may be incomplete.

As a general conclusion, the negative consequences identified in this section are expected to increase.

5.3.7. *5.1.7 Digital product passport*

The proposal for a Regulation on Ecodesign for Sustainable Products sets out the framework for a Digital Product Passport (DPP). According to this proposal, the DPP will include new mandatory information relevant to product sustainability (such as recyclability or energy efficiency) and regulatory compliance information about the product (technical file, declaration of conformity). In addition, an inventory of all materials and raw materials used in a product, and a full list of chemical contents may be

[66] Data available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Enterprises_having_a_website,_by_functionality_and_size_class,_EU,_2021_(%25_of_enterprises).png

required. This could make it easier to facilitate tracking along the supply chain, for instance, for substances of concern.

The detailed requirements will be determined on a product-by-product basis in a subsequent step. Consequently, product-specific requirements are not yet determined for fertilising products, nor are these products, so far, included on the 'priority' list currently under development by the Joint Research Centre. The methodology of identifying products or product groups for such a list is currently being developed. In the preliminary discussions, EU Fertilising products have not been considered as a priority, mainly as the potential for contribution to achieving Union climate, environmental and energy efficiency objectives, and the potential for improving circularity and sustainability performance of other product groups has been identified with room for great improvement and therefore priority over EU fertilising products. Therefore, the DPP is not considered in the dynamic baseline scenario (10 years).

Nevertheless, the requirements set under the DPP will necessarily influence how far manufacturers in the sector will be required to provide digital information, and will lead to increased digitalisation of product information, also for fertilising products. Therefore, establishing a framework for digital labelling under this initiative, can contribute to futureproofing the Regulation, ensuring consistency with trends of digitalisation. Synergies between the two initiatives have been considered as regards how the information is to be provided (i.e. in a decentralised system) and accessed (e.g. via one QR code placed on a product, which would lead to information under the DPP, labelling information as well as other information). Thus, even though the type of information to be provided is different, it is important to ensure that when information is provided digitally concerning a product, it ends up all in one place. The information that could need to be provided under the DPP has thus far only been set in broad terms in the regulatory proposal for the Eco-design for Sustainable Products Regulation from March 30th 2022. The detailed implementing rules will be determined on a product-by-product basis. However, the information required under the DPP will be additional to the labelling requirements of the FPR, e.g. information relevant to product sustainability, such as information about components and their recyclability, and therefore no overlaps or inconsistencies can be expected in terms of online information as part of applying the two rules.

5.2. Description of the policy options

All FPR labelling requirements are necessary to protect the user and the environment, and they are essential for the correct application of the fertilising product. Therefore, their partial abolition was not envisaged.

Furthermore, it is also important, both for the protection of the user and the environment as for the correct application of the fertilising product, that the information is available in a language easily understood by the user. Correspondingly, any changes in the language regime of the labels was also discarded in the design of the policy options.

Details on the methodology of how the policy measures and options were developed can be found in Annex 4. The selection of the information that could be moved to a digital label under the policy measures take into account which categories of information is essential to which categories of stakeholders, and their attitude toward digital labelling.

The table below gives an overview of the findings from the different data collection activities[67] of the digital labelling study of the views of stakeholders towards certain categories of information required to be labelled on an EU fertilising product (for more information please see the digital labelling study, section 5.2.1):

Table: 5.2 Views of stakeholders towards certain categories of information required to be labelled on an EU fertilising product

Type of user	Category of information on a label			
	Agronomic efficiency	**Safety requirements**	**Information relevant after purchase**	**Information on content**
Professional users	• Generally essential • Nutrient content is most important	• Important, but 75.5% perceived can be digitalised either fully or partially	• Less important • Use instruction are mostly read when the fertilising product is unfamiliar • Storage conditions are not important	• Important • Granulometry was divisive • Form of physical unit may be provided digitally
Non-professional users	• Less important • Nutrient values are read by avid hobbyists • Complex technical information is hard to understand (e.g. neutralizing value, references to chelating and complexing agents)	• Essential	• Essential • Use instructions and target plants are most important	• Less important overall • Granulometry, form of physical unit are less important • Production and expiration date • List of ingredients was divisive
Manufacturers	• Essential	• Essential	• Would prefer digitalisation	• Would prefer digitalisation

Brief explanation of what is included in the different categories of information:

- **Agronomic efficiency (AE):** information directly linked to the function of the EU fertilising product (example: nutrients for fertilisers; neutralising value for liming materials).
- **Safety requirements (S):** those labelling requirements ensuring high protection of human health and the environment (example: risk management measures, nitrogen and phosphorus content relevant for the implementation of the Nitrates Directive, urea effects on air quality).

[67] Findings from the interviews, public consultation, focus groups and survey experiment as part of the CSES and PPMI study mentioned before.

- **Information relevant to after purchase (AP):** this information is predominantly referred to after the product is bought **(**for example, use instructions, storage conditions or disposal measures).
- **Information on content (IC):** other information on what the product contains, not directly linked to its agronomic efficiency (for example: physical unit, quantity, production date).

5.3.1. *5.2.1. Differences between professional and non-professional users*

The design of the policy options took account of stakeholder consultations that confirmed differences in views both between, and within particular stakeholder categories regarding attitudes towards digital labelling and regarding the information on product labels, which could be subject to digitalisation. Some of the main differences were between professional and non-professional users in terms of attitudes towards whether some information could be fully moved digitally or not. Generally speaking, professional users were slightly more in favour of more digital labelling, compared to non-professional users[68]. Further, the type of information a professional user considers essential, differs substantially from what a non-professional user finds essential. For example, professional users might be interested in technical aspects of the product, such as the content of all various forms of nitrogen, inhibitors, chelated and complexing agents, while they are not that interested in use-instructions. This is because they have well defined fertilisation plans and mostly rely on technical advice on how to use products[69]. On the other hand, such technical information is often not understood by non-professional users, who rather use a fertilising product label to obtain use instructions; i.e. on which plants the product can be used, in which quantities and through which application methods.

Further, criteria that help product users purchase products vary considerably. The digital labelling study found that most (47.4%, out of 253) of professional users rely on the advice from colleagues and advisors to help make a purchase decision, while most non-professional users (35.8%, out of 327) research products ahead of buying them. Both professional and non-professional users rarely indicated that they rely on the label to make an on-the-spot decision to purchase a product in a shop (11.9%, out of 253 and 15.9%, out of 327 respectively).

Such differences raised the question if a clear distinction between professional and non-professional users can be made in the labelling requirements of the FPR in determining what information should remain on the label physically and what information can be presented digitally. Such a distinction is therefore made in some of the policy measures presented, and the relevant impacts of such a distinction are assessed. Under those policy measures that do not make a distinction, the information moved online gives precedence to the information used more by professional users and less by non-professional users.

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[68] During the survey experiment, 80,1% of professional users indicated preferences for full or partial digital labelling, while 72.4% of non-professional users indicated preferences for full or partial digital labelling of EU Fertilising products.

[69] CSES and PPMI study mentioned before, Section 2.3.5.

A distinction between products destined for the different user groups is currently not made in the FPR. However, during the ad-hoc meeting of the Commission expert group on fertilising products on 15 March 2022[70] (also referred to as the 'ad-hoc expert group meeting'). organised to discuss the different policy options, it was raised by authorities and industry associations that generally there was no concern regarding the implementation of such a distinction, mainly because products destined for professional use are often supplied in large quantities.

5.3.2. *5.2.2. The stability of the information provided over time*

As explained in section 2, the frequency with which information on the label changes is an important trigger for updating and revising labels, as fast changing information might mean that existing labels already produced become redundant and have to be reprinted, meaning the old ones are discarded and disposed of. Therefore, in the development of policy measures, it was important to identify what information changes frequently and to consider with priority whether that can be removed from the physical label and be digitalised in order to economise on redundant labels and the resultant waste and potential harm to the environment from disposal. To this end, as part of the development of policy measures, the stability of information over time (frequently changing or not) has been assessed for each labelling requirement (see the fifth column in Annex 7).

5.2. Presentation of the policy measures:

The policy options have been constructed by selecting from a comprehensive list of potential policy measures based on the extensive findings of the digital labelling study (see section 5.2 for more details). These measures were screened[71] to identify those policy option bundles that should be retained for further analysis. The screening process resulted in a list of 6 policy measures retained for the impact assessment (see Table 5.3). The measures are packaged into 6 policy options which address the specific objectives.

Table: 5.3 Presentation of the policy measures

Measure	Description	Details
Measure 1	Retaining all information on physical labels and supporting the voluntary use of digital labels by a guidance document	Under this non-legislative measure, all label information is provided on the label/accompanying document/leaflet. The only difference regarding the current practice is that the Commission would develop guidelines (with best practises and examples) for operators who would intend to provide the information digitally, too.
Measure	Certain information may	Amendment to the FPR to allow *some* label information

[70] minutes available here: Circabc (europa.eu))

[71] Screening (see CSES and PPMI study mentioned before, Section 5.4) was developed in accordance with Tool #17 of the Better Regulation Toolbox. The longlist of measures were assessed against eight criteria, namely: legal feasibility, technical feasibility, stakeholder acceptability, effectiveness, efficiency, proportionality, EU value added and coherence.

2	be provided digitally (without distinction between professional/non-professional users)	to be provided only digitally, on a voluntary basis. The information that may be provided only digitally includes; • Information subject to frequent changes, if it is not linked to safety requirements (e.g. frequently changing information from categories: agronomic efficiency, information relevant to after purchase, information on content[72]). • Various technical details not subject to frequent changes, if it is not linked to safety criteria (e.g. non-frequently changing information from categories: agronomic efficiency, information relevant to after purchase).
Measure 3	Certain information may be provided digitally with a distinction professional users (measure 3a)/non-professional users (measure 3b)	As **measure 2**, with the following differences: • The information allowed under the digital label depends on the need of immediate access to the information for a particular user (professional or non-professional). • *Most* of the information relevant to after purchase (e.g. application rates)[73] under **measure 3a** for professional users. • The various technical details under **measure 3b** for non professional users focus in particular on Information on Content and Agronomic Efficiency (e.g. declaration of presence of forms of nitrogen (N)[74]).
Measure 4	Most of the information may be provided digitally (without distinction between professional/non-professional users)	As **measure 2**, with the following differences: Information that may be provided digitally includes *additional* labelling requirements including in particular: • *Most* of the information relevant to after purchase (e.g. application rates)[75]. • *Most* of the information on content (e.g. form of the physical unit)[76]. • *Most* of the information relevant to agronomic

[72] For a full list of what information can be moved to a digital label under measure 2 please see Annex 7, the 8th column.
[73] For example, over 90% of all possible AP label information is allowed to be included under the digital labelled for a PFC 1 (fertiliser) product. For the full list of information which could be moved to a digital label under measure 3a please see Annex 7, the 9th column.
[74] For a full list of what information can be moved to a digital label under measure 3a and 3b please see Annex 7, the 9th and 10th columns.
[75] For example, over 90% of all possible AP label information is allowed to be included under the digital label only for a PFC 1 (fertiliser) product. For the full list of information which could be moved to a digital label under measure 4 please see Annex 7, the 11th column.
[76] For example, over 90% of all possible IC label information is allowed to be included under the digital label only for a PFC 1 (fertiliser) product.

		efficiency (e.g. the content of the declared primary nutrients total nitrogen (N), total phosphorus in the form of phosphorus pentoxide (P2O5) or total potassium in the form of potassium oxide (K2O))[77].
Measure 5	Most of the information may be provided digitally with the distinction between professional users (5a) and non-professional users (5b)	As **measure 3**, with the following differences: Information that may be provided digitally includes *additional* labelling requirements, in particular: For **measure 5a**: • Information subject to frequent changes, if it is not linked to imminent risks to human health and environmental protection (this included parts of Safety information, e.g. declaration of the content of the substance exceeding maximum residues limits[78]) • *Most* of the information on content and agronomic efficiency. For **measure 5b**: - *Most* of the information on content and agronomic efficiency information.
Measure 6	All information is provided digitally for certain categories of products	Amendment to the FPR to allow *all* information in Annex III to be provided only digitally on a voluntary basis for: (1) products sold in bulk[79] (without product packaging) and; (2) products for industrial users (blenders, packagers, re-packagers).

[77] For example, over 88% of all possible AE label information may be included under the digital label only for a PFC 1 (fertiliser) product.
[78] For all safety information moved under option 5a, please refer to Annex 7, the 12th column.
[79] Such products are mostly used by professional users.

5.3.3. *5.3.1. Information which could be moved from the physical label to digital label*

Table 5.3.1: The table below sets out the information that can be digitalised under Measure 2. **Category**	**Information requirement**
IC	• List of all ingredients above 5 %, including the name of the substances • Relevant CMC • Identification number of the substance • Production date (PFC 1, PFC 4, PFC 6) • Declaration of counter-ions of micronutrients in the inorganic micronutrient fertiliser
AE	• Content of organic carbon (PFC 1, 2) • Dry matter • Content of water-soluble calcium oxide (CaO), magnesium oxide (MgO), sodium oxide (Na2O) and sulphur trioxide (SO3) • The ratio of organic carbon in total nitrogen (PFC 1, 3) • Declaration of the water-soluble content of micronutrients in an organo-mineral fertiliser or an inorganic fertiliser • Declaration of the amount of chelated/complexed micronutrients in an organo-mineral fertiliser or an inorganic fertiliser • Where the declared micronutrients are chelated by chelating agent(s), the pH range guaranteeing acceptable stability • % of fertiliser coated by each coating agent • the typology of straight inorganic micronutrient fertiliser • Reactivity and method of determination of reactivity, except for oxide and hydroxide limes (PFC 2) • pH (PFC 3, 4) • the content of inhibiting compound (PFC 1, 5) • Effect claimed for each target plant (PFC 6) • Concentration of micro-organisms (PFC 6)
AP	• Certain use instructions

Table 5.3.2: The table below sets out the information that can be digitalised under Measure 3a.

Category	**Information requirement**
IC	• Same as measure 2
AE	In addition to measure 2 • Content of various forms of nitrogen and phosphorus No longer digitalise certain technical information from measure 2 • Reactivity (PFC 2) • pH (PFC 3, 4)
AP	• all use instructions, except targeted plants • all storage conditions

Table 5.3.3: The table below sets out the information that can be digitalised under Measure 3b.

Category	Information requirement
IC	In addition to measure 2 • granulometry • forms of the physical unit • content of organic nitrogen in PFC 3
AE	In addition to measure 2 • presence and content of various forms of nitrogen and phosphorus • presence of water-soluble forms of nutrients • declaration of chelating, complexing and coating agents • the presence of inhibitors • content of calcium oxide and magnesium oxide in PFC 2 • strains of microorganisms in PFC 6
AP	• certain use instructions

Table 5.3.4: The table below sets out the information that can be digitalised under measure 4 and measure 5b (the information is the same).

Category	Information requirement
IC	In addition to measure 3a • for of the physical unit • presence of organic nitrogen in PFC 3
AE	In addition to measure 3a • Content of nutrients • Declaration of soluble forms of macronutrients • Content of micronutrients in macronutrient fertilisers • Chelating, complexing and coating agents • Reactivity for PFC 2
AP	Same as measure 3a

Measure 5a: The table below sets out the information that can be digitalised under Measure 5a. That which is in addition to Measure 4 is indicated in bold text.

Category	Information requirement
IC	Same as measure 4
AE	In addition to measure 4 • strains of microorganisms PFC 6
AP	• All use instructions • All storage conditions
S	• Warnings regarding maximum residues limits, animal by-products, when using fertilisers with micronutrients • Content of manganese, selenium, chloride • Air quality impact of urea • Content of copper and zinc

5.3.4. *5.3.2. Principles for digital labelling*

All possible measures would be underpinned by some fundamental principles in order to protect end-users and to ensure the accessibility, availability and quality of digital information. To maximise efforts of consistency in terms of 'how' digital labelling could be allowed, these principles are also introduced under the Impact Assessments which include digital labelling for other areas of chemical legislation, i.e. CLP and Detergents. These principles should support creating a level playing field for the chemicals industry. They aim to safeguard the otherwise adverse impacts digital labelling could have on those impacted by the digital divide. Such principles could further assist in enforcing the labelling rules.

Economic operators could only put digital labels on their products under any of the following Policy Options 2-6 when they would apply these mandatory principles.

Principles for digital labelling:

Digital labelling should at least comply with the following general requirements:

1. The obligation for the digital label to include the **full set of labelling information** (i.e. there should not be a split of information between the physical and digital label), to ensure that the information provided is meaningful;
2. The obligation to **provide all digital data in one place**, separately from other commercial information (e.g. the mandatory information shall not be displayed together with other information intended for sales or marketing purposes). Coherence should also be sought with other digital provision of information on products (e.g. under the Digital Products Passport);
3. The **format of the data provided digitally must be appropriate** (e.g. rules on font size, the content of the digital label must be searchable);
4. The **protection of personal data** (e.g. prohibition of collecting and tracking user data or using that information for commercial purposes) in accordance with Regulation (EU) 2016/679;[80]
5. **Accessibility of the data** both in terms of ease of access (e.g. "two-click" maximum rule to access the information), and in terms of accessibility for users (e.g. also for users with disabilities). Access to the digital label must be free and without a need for prior registration or a password, or prior download of applications. Access limitations for certain user groups (e.g. geo-blocking in accordance with Regulation (EU) 2018/302[81]) are not allowed;

[80] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation): https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02016R0679-20160504

[81] Regulation (EU) 2018/302 of the European Parliament and of the Council of 28 February 2018 on addressing unjustified geo-blocking and other forms of discrimination based on customers' nationality, place of residence or place of establishment within the internal market and amending Regulations (EC) No 2006/2004 and (EU) 2017/2394 and Directive 2009/22/EC: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32018R0302

6. Instead of prescribing a particular technology, a set of **minimum technical requirements** are to be defined and complied with, in order **to ensure technological neutrality of the IT solutions used**. The IT solution must be easily readable via widely used digital technologies (e.g. a QR code scanner/ reader). It must be ensured that the data can be accessed, navigated and read on, and is compatible with, all major operating systems and browsers. Information must also be available for old browser version and operating systems;
7. The information must be provided in a **language which is easily understood by end-users,** as determined by the Member State in which the product is marketed[82]. Additional languages are permitted; users must have the possibility to select their language of choice, regardless of their physical location.
8. Economic operators who opt for the digital label shall ensure that appropriate alternative ways of providing information are available to end-users in case of **lack of digital tools or skills, or in the absence of network access**, both before buying the product and after having bought the product;
9. Where an EU fertilising product is supplied in a package, **the IT solution (e.g. QR code) must be printed or placed physically on a label** which is affixed to that package. Where the package is too small to contain IT solutions or the product is sold in bulk, the IT solution shall be provided in a separate leaflet accompanying that package/product.
10. The **data contained under the digital label must remain accessible** for as long as operators are required to keep the technical documentation of product that it refers to, i.e. 5 years after they sold the last EU Fertilising Product. The data present on the digital label must remain available even after an insolvency, a liquidation or a cessation of activity in the Union of the economic operator that created the digital label.

As part of the digital labelling study, economic operators, national authorities, professional and non-professional users as well as other stakeholders such as NGOs were consulted on these principles, and feedback confirmed wide support for all of the principles.[83]

5.3. Presentation of policy options:

The policy options retained for a detailed assessment range from a minimum intervention, without using regulatory means (PO1), to options implying amendments to the FPR (PO2 and PO3).

[83] Majority of stakeholders responding (out of 84) to the 'policy options' survey 'strongly agreed' or 'agreed' with all 10 principles.

As regards PO2, it has been divided into 5 separate options (PO2a- PO2e) where the level of digitalisation varies from the least extensive in PO2a to the most ambitious in PO2e. All the different versions of policy option 2 are packages of 1 or 2 policy measures as presented in the previous Section. PO3 (which consists of measure 6) is the only option effectively addressing drivers 4 and 5, as explained in Section 2.3. The full digitalisation of the labelling requirements for products sold to industrial users is the only way of avoiding the double labelling of products before reaching the end-user. As regards products sold in bulk, the full digitalisation of the leaflet and the requirement to provide the information via alternative means in cases where access to a digital label is not possible, effectively solved the problem identified. The impacts of PO3 (measure 6) differ substantially to the policy options under PO2. Any of the POs (1, 2 and 3) could be combined with any other policy option to create a package of the preferred combination.

The table below presents the overview of the retained policy options. The different policy options may be combined.

Policy Option		Measures included	List of what is allowed under the option
PO0		Baseline (no measures)	- No changes to the status quo
PO1		Measure 1 (only)	All Annex III label information is provided via physical labels Digital labelling is voluntary The Commission develops a guidance document on digital labelling
PO2	PO2a	Measure 2	Certain information can be provided digitally only without a distinction between professional/non-professional users.
	PO2b	Measure 3 (3a and 3b)	Certain information may be provided digitally only, with a distinction between professional/non-professional users.
	PO2c	Measure 4	Most of the information can be provided digitally only without a distinction between professional/non-professional users.
	PO2d	Measure 5 (5a and 5b)	Most of the information may be provided digitally only, with a distinction between professional/non-professional users.
	PO2e	Measure 3a and 5b	Certain information may be provided digitally only, for professional users Most of the information can be provided only digitally for non-professional users
PO3		Measure 6	All information may be provided only digitally for products sold in bulk and products for industrial users.

5.4. Options discarded at an early stage

In this section the discarded options longlisted but not selected for the final shortlist are provided and analysed. In particular, it is set out why specific alternative options were not considered as being feasible or realistic, considering advantages, but also crucial disadvantages of these POs.

5.3.5. *5.5.1. Replacing the physical labels with digital labels for all EU fertilising products*

The use of full digital labelling replacing physical labels for all EU fertilising products was discarded due to concerns about: (1) compromises to the safety and use of products (2) digital literacy of or access by product users.

Firstly, the use of full digital labelling only was seen as potentially compromising product safety. The digital labelling study found a broad consensus among most stakeholders[84] that at the minimum, safety information and instructions for use should remain on the physical label. In the survey experiment[85], feedback was received that the inclusion of safety information on physical labels was "non-negotiable", irrespective of whether such information is produced in parallel through digital labelling. Therefore, only having digital labelling and discontinuing physical labelling for all EU fertilising products was not considered as being feasible as it would compromise product safety.

Without basic safety information on the physical label, there were concerns that even if users are digitally-savvy, they may not always look up the corresponding safety information online via a digital label, for instance, due to inertia or time expediency reasons. Another issue is that there may be practical obstacles because of the (working) conditions in which the products are used. For example accessing information online in a situation or location when it is inconvenient or impractical, for instance out in a field, when weather-related conditions are prohibitive, or due to other external factors, for example, given there may be wet soil and dust present. Therefore, it cannot be assumed that accessing a digital label is realistic in all scenarios.

Secondly, although the digital labelling study found that a high percentage of fertilising product users are digitally-savvy, and would be able to use digital labels, concerns were raised among consumer associations, economic operators, national authorities and some product users that some user categories (particularly small farmers, and older hobby gardeners) may not be able to use digital tools, and that digital labels could leave behind those lacking digital literacy, especially older users (who make up a disproportionate share of hobby gardeners for instance[86]).

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[84] Although 75.5% of Professional users perceived safety information could be digitalised either fully or partially based on the feedback received through the stakeholder survey.

[85] A survey experiment was conducted as part of the CSES and PPMI study (mentioned before), and implemented a three-group, one-way design that explored the effects of labelling changes on key behaviours among professional and non-professional users of fertilising products.

[86] CSES and PPMI study mentioned before, section 5.1.2.

While recognising that according to the DESI Scoreboard 2021 on the Digital Economy[87], 97% of European citizens have access to either a fixed or a mobile broadband internet connection, this masks considerable differences between Member States, especially in rural areas where fertilising products are used more commonly. The digital labelling study found that while most respondents to the stakeholder survey indicated they were able to access the internet, some reported challenges regarding internet speed and stability. However, whilst "on-the-go" a relatively high percentage of both professional and non-professional users indicated they do not have internet access. Most professional users surveyed indicated that they have the internet at home (85.7%) and the office (55.3%). Non-professional users said that they have the internet at home (96.2%) and on-the-go (64%). Therefore, while in theory, most users of EU fertilising products are internet-connected, in practice, this depends on where they are (i.e. at home or on-the-go).

For the above reasons, it was concluded that keeping some essential information, particularly linked to safety, was necessary to remain on the physical label and allowing full digitalisation of labels for all EU fertilising products was not proportionate to the problem at hand.

5.3.6. *5.5.2. Mandatory digital labelling*

This option was dismissed due to the expected significant costs that they would entail for businesses – SMEs in particular[88]. Under this option all manufacturers would have to implement digital labelling, even if none of the problems identified are experienced (for example those with products packaged in large bags without label space limitations). Concerns about the costs for SMEs of making digital labelling mandatory were a key finding in the stakeholder survey results of the digital labelling study. Implementing mandatory digital labelling would incur both one-off costs (e.g. purchasing QR code scanning equipment) and recurring costs (e.g. the necessary software to digitalise user information and compliance information about their product inventory, updating websites with product information), even if economically digital labelling does not make sense.

Interview and case study feedback from the digital labelling study, as well as positions received in response to the Inception Impact Assessment[89] suggests that economic operators prefer to retain control to make their own decisions regarding labelling dependent on their businesses' needs and the scale of their production facilities.

Further, this initiative follows up on the concerns raised during the adoption of the FPR, particularly on the increased labelling requirements, and is proposed as a simplification measure intended to reduce, rather than increase administrative burdens for industry, by allowing digital labelling as an alternative means of providing label information.

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[87] Digital Economy and Society Index (DESI) 2021 | Shaping Europe's digital future (europa.eu)

[88] SME United emphasised that mandatory digitalisation should not be put forward, since all companies do not have "sufficient options and experience in adding or using digital information" and therefore the choice should be available to provide certain information either digitally or on the packaging.

[89] Chemicals – simplification and digitalisation of labelling requirements (europa.eu)

5.3.7. *5.5.3. Centralised database for providing information digitally*

During the consultation activities, public authorities expressed a generalised preference for this solution, albeit not seeing negatively the possibility for manufacturers to provide this information through their own website. Stakeholders from the industry, on the other hand, would rather have an electronic label directly linked to their own website in order to have greater control about the information provided. This measure was, however, discarded given the various disadvantages that it presented. First, in other chemical sectors, such as under the detergents regulation, manufacturers are already required to maintain their own website with product information. Therefore, for detergents, there already exists a suitable platform to host the labelling information to be provided digitally which manufacturers own and manage by themselves. In order to keep consistency with the approach of digital labelling to the extent possible, between different initiatives, this is also relevant to EU Fertilising products, and it was preferred to explore a consistent (decentralised) digital labelling approach. Further, a centralised database would force companies to adopt a certain digital solution, the structure of which would be managed externally. This would not allow the legislation to stay technologically neutral in order to allow innovation and the uptake of future technologies and its establishment would be time consuming and costly. The development of such a database would be very costly. Comparatively, the IA of the batteries proposal found that "the cost of a centralised database could be in the region of EUR 5.6 million plus EUR 1.3 million for maintenance" in the 2021-2030 period[90]. It was, therefore, concluded that the benefits of this measure would likely not outweigh the costs and shortcomings related to its implementation.

5.3.8. *5.5.4. Digitalisation of incremental information requirements.*

This option would involve allowing digital labelling of information requirements under the FPR that are additional to those already required under the EC Fertilisers Regulation.

This option was initially considered on the basis that many stakeholders suggested this as a possibility during the consultations of the digital labelling study. However, in ensuring high levels of safety for fertilising products, this would be an unacceptable approach considering that some of the additionally required information is safety related, and conveys crucial information, for example on maximum residues limits for food and feed, or safety information on the content of products, such as products with ricin, or products containing cocoa shells, which would trigger warnings such as 'toxic to dogs and cats'. Further, the FPR contains new rules not only on fertilisers and liming materials (covered by the EC Fertilisers Regulation) but also for new product categories, including organic fertilisers, soil improvers, growing media, inhibitors, plant biostimulants and fertilising product blends.

[90] Commission Staff Working Document - Impact Assessment Report - Accompanying the document - Proposal for a Regulation of the European Parliament and of the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) 2019/1020, COM(2020)798, SWD(2020)334, Part 3/3, see pg. 290.

6. 6. WHAT ARE THE IMPACTS OF THE POLICY OPTIONS?

The impacts were assessed for each separate policy measure proposed, and a detailed explanation is provided in the digital labelling study, section 5.4. PO2a – PO2e and PO3 introduce digital labelling, and allow varying degrees of information to be moved to a digital label (and in the case of PO3 all information), under the same conditions (i.e. with the application of the digital labelling principles).

The impacts of the policy option PO2a –PO2e are discussed and analysed together, only explaining the differences between them.

The following assessment provides a qualitative analysis of the impacts generated by each policy option, based on the evidence gathered from multiple sources. Whenever possible, it also provides a quantitative analysis of benefits and costs relating to the main economic and social impacts. The cost/benefits analysis, however, is not fully comprehensive due to significant data gaps and limitations. The quantification of costs and benefits is based on a number of assumptions coming from stakeholder feedback and expert knowledge of the contractor of the digital labelling study. The aim of this assessment is to provide ranges of the magnitude of potential impacts generated by each policy option, rather than exact monetisation[91].

6.1. 6.2. Policy Option 1: Development of a Guidance Document only

6.3.1. *6.2.1. Economic impacts*

The baseline costs are estimated to remain the same with the development of a Guidance document. PO1 should have no particular impact on the competitiveness of the industry, considering that it would not entail any regulatory change and the provision of all label information would remain on physical labels. As digital labelling is not harmonised under PO1, a level playing field to this regard is not established for the industry. PO1 would not offer any solution to problem 2 (labels are difficult to manage) and does not contribute to the general objective of ensuring the effective functioning of the Internal Market in fertilising products, nor the specific objective of improving the free movement of fertilising products across the EU-27, as all label information remains on the physical label. Overall, the problems related to increased costs due to lack of space on the label will remain. There could be some costs for the Commission related to the development of a Guidance document but they are considered as business as usual costs.

6.3.2. *6.2.2. Impact on the environment*

Digital labelling (according to current industry practises) may benefit from clear guidelines on how to convey digital information of EU Fertilising products more effectively. If an economic operator chooses to follow the established guidelines under the baseline, this could have limited positive indirect impacts on the environment and on human health, as the information provided online would be more complete and clearer.

[91] More details on data gaps and limitation are presented in Annex 4.

For example, a product user could more easily follow the use-instructions of a product due to increased quality of the layout of the information.

6.3.3. *6.2.3. Social impact and on human health*

All label information will remain on the physical label, and therefore this PO would not impact the digital divide and those with no access to the internet or those without digital skills. Further, health and safety related information will also remain on the physical label, so health risks will be no greater than in the case under the baseline. For those products already providing label information digitally, if the guidelines are followed, product users may benefit from clearer information. This could have positive social impacts, as for example, those users seeking out certain criteria on a EU fertilising products, suiting their personal needs or professional needs, could more easily find information relevant to them, for example, by making the digital information searchable. However, guidelines cannot be enforced and such possible benefits would not be harmonised across digitalisation practises. There will also be no benefits in terms of ease of reading labels and distinguishing between essential and less relevant information, as problem 1 (labels are difficult to read because of the extensive requirements under the FPR) is not addressed, nor is the specific objective of improving the readability of the labels.

6.3.4. *6.2.4. Stakeholders view on PO1*

As many enterprises already provide product information online on their own initiative[92], putting in place a framework to guide digitalisation for those enterprises was generally welcomed[93].

Under this option, the mandatory label information would all be retained on the physical label, which would allay concerns among some stakeholders (e.g. some non-professional users and their representatives, in the form of consumer organisations) about moving any information from a fertilising product label[94]. However, in general, this policy option is not supported by the majority of stakeholders. According to the results of the Public Consultation, 46% of respondents answered they would view it very positively, and 21% moderately positively, when asked how they would evaluate it if some information of a fertilising product label was removed from the physical label and could only be obtained via digital labels[95]. In terms of users, this PO is not optimal in the view of non-professional users, who will continue to receive detailed technical information on product labels which they do not understand.

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[92] 74% of manufacturers responding to the Public Consultation indicated they provide product information online, (out of 139 respondents).
[93] According to the Public Consultation, 56% (74 out of 132 respondents) preferred for digital label information to be presented in a decentralised system following standardised templates or guidelines.
[94] See, for example, BEUC's publication 'Why moving essential product information online is a no-go'
[95] Out of 153 responses for Fertilising Products. Respondents included companies/business organisations (46.8%), EU citizen (22.9%), business associations (17.6%), public authorities (17.6%), other (4.4%), consumer organisation (1.5%), Non-EU citizens (1%), trade union (0.5%) and NGOs (0.5%).

5.5. Policy Option 2: Information may be provided digitally for EU Fertilising Products

As explained above, the impacts of **PO2a- PO2e** are analysed together in this section, as there are limited differences between the impacts of **PO2a-PO2e**, and thus there is limited added value of discussing them separately. Where differences between options **PO2a – PO2e** exist, they are highlighted.

The Public Consultation found that overall the majority of all types of stakeholders are supportive of the introduction of digital labelling[96], even if there may be some opposing views regarding the precise manner of its implementation or the labelling requirements, which could be provided only digitally.

Allowing for some digital labelling would reflect positively the evolving situation internationally, as many countries, together representing over 56% of the world's economy and 46% of the world's population, have already adopted national e-labelling schemes for various products[97]. Development of an online presence as incentivised under PO2, will contribute to technological development and the European Commission's ambitions linked to the digitalisation of the economy.

It should be noted that any option introducing digital labelling as an alternative to mandatory labelling, the application of the digital labelling principles (see section 6.3.1) will be triggered.

6.3.5. *6.3.1. Economic impacts*

Costs:

A first point to note here is that the voluntary nature of the proposals, means that PO2a – PO2e would not impose any additional compliance costs on businesses across the EU, as businesses could avoid incurring additional costs simply by continuing their current method of providing all label information on the physical label only.

A detailed breakdown of costs for businesses can be found in the Annex 4. All costs are considered administrative costs since they relate to information requirements. Based on the figures table below (estimate figures for total costs for SMEs and large enterprises), key assumptions should be noted, and particularly that many businesses will already operate a website; Eurostat data shows a figure of 94% of large enterprises having a website.[98] Large enterprises (and even some SMEs) are also likely to have a website with high functionality. Keeping this in mind and considering the dynamic baseline, it is likely

[96] 67% of respondents indicated they would evaluate it positively if information was removed from the physical label and could be obtained digitally only (out of 153 responses): Chemicals – simplification and digitalisation of labelling requirements (europa.eu)

[97] E-labelling for Europe - key facts & figures - DIGITALEUROPE

[98] Enterprises having a website, by functionality and size class, EU, 2021 (% of enterprises).png - Statistics Explained (europa.eu)

that many enterprises will introduce digital labelling as part of a broader strategy to digitalise their operations or at least provide a website. For the purposes of the cost-benefit analysis that follows, the costs of developing a website and maintaining webpages is therefore treated as a business-as-usual cost.

Compared to large companies, SMEs are currently found less likely to provide information about their products online, but not by significant amounts. Based on the results from the public consultation, 70% of the SMEs[99] compared to 79% of the large companies[100] already provide information about their products digitally. This illustrates that benefits as a result of the introduction of digital labelling would be very likely for SMEs.

Further, evidence from the consultations of economic operators highlighted that the provision of any information in digital format requires a certain level of expenditure (in equipment, staff time, etc.) both on a one-off basis and an ongoing annual basis (e.g. to maintain equipment, retrain staff). However, once that investment is made, the incremental cost of providing more information in digital format is negligible. For example, there is little cost difference in providing certain/most/all information in digital format for any particular product. Similarly, the costs of providing digital labelling do not particularly vary according to the types of fertiliser products. **On that basis, the evidence suggests that an assumption can be made that the costs of providing information in digital format for any specific business would be more or less identical across PO2a-PO2e**.

Estimates for total one-off costs and ongoing annual costs are provided in the table below (for a full break down of the costs please see Annex 4).

Table 6.1 Total enterprise-level costs of optional digitalisation (PO 2a-2e)

Size of enterprise	One-off administrative costs per company	Ongoing (annual) administrative costs per company
Large enterprises)	€14,998 – €29,998	€2,700 - €7,700
SMEs	€1,796 - €6,046	€1,170 - €3,770

The ranges are calculated on the basis of the data collected during the stakeholder survey and the public consultation, which provided different data on the percentage of firms that do not yet provide any information about their products in a digital format:

- According to the stakeholder survey, 56% of enterprises do not as yet provide any information about their products in a digital format). If the entirety of these enterprises chose to provide information in digital format, this would amount to 2,013 enterprises (i.e. 56% x 3,595 enterprises).
- According to the public consultation, only 26% of enterprises do not as yet provide any information about their products in a digital format. If the entirety of

[99] Multiple selection question. 58 out of 83 total selections.
[100] Multiple selection question. 59 out of 75 total selections.

these enterprises chose to provide information in digital format, this would amount to 935 enterprises.

The public consultation and stakeholder survey results differed quite significantly in terms of the proportion of firms that said they already produced information in a digital format. A reason for the big difference may be that in the stakeholder survey, was more technical compared with the public consultation, meaning that stakeholders were specifically responding about digitally providing labelling requirements (whereas in the public consultation they responded more generally). For this reason, the figure from the stakeholder survey will be used in the calculation of overall costs and benefits.

The percentage of enterprises that operate in compliance with the FPR is not known, given that they can choose instead to comply with relevant national legislation. Thus, identifying the percentage that would move from physical labelling in line with the FPR to digital labelling in line with the FPR cannot be determined. To address this, a best estimate is made taking the percentage of SMEs that export to other EU Member States as a proxy for compliance with the FPR rather than with national rules.[101] According to a Flash Eurobarometer survey, 30% of SMEs (in all sectors) had exported to another EU Member State in the previous three years.[102] It is also assumed that all large enterprises comply with the FPR, since they are very likely to export to multiple EU Member States.

Based on this, large enterprises and SMEs are divided into different categories, as shown in the table 4.5 of Annex 4.

- It is assumed that 44% of Large Enterprises already provide some form of digital labelling. It is assumed that they export to other Member States and comply with the FPR. Such enterprises would not incur additional costs (as they already digitalise) but would enjoy savings from any reductions in physical labelling requirements.
- The remaining 56% of Large Enterprises do not yet provide any digital labelling. However, it is assumed that they export to other Member States and would therefore choose to adopt digital labelling in compliance with the FPR. Such enterprises would incur additional costs due to digitalisation but would also enjoy savings from any reductions in physical labelling requirements.
- Of the 44% of SMEs that provide digital labelling, it is assumed that 30% export within the EU (which is equal to 13% of all SMEs). These firms would not incur additional costs but would enjoy savings from any reductions in physical labelling requirements.
- Of the 44% of SMEs that provide digital labelling, it is assumed that 70% do not export within the EU (equal to 31% of all SMEs). These firms would not incur additional costs and would not enjoy savings, as they would continue to comply with any national rules on labelling.
- Of the 56% of SMEs that do not provide digital labelling, it is assumed that 30%

[101] It is possible that some exporting enterprises will comply with national rules rather than the FPR where this is possible via mutual recognition between Member States. However, the research covered no data on the proportion of firms that take this approach.
[102] Flash Eurobarometer 421: Internationalisation of Small and Medium-Sized Enterprises

export within the EU (equal to 17% of all SMEs). These firms are assumed to adopt digital labelling for the first time. They would therefore incur additional costs but would enjoy savings from any reductions in physical labelling requirements.

- Of the 56% of SMEs that do not provide digital labelling, it is assumed that 70% do not export within the EU (equal to 17% of all SMEs). These firms would not incur additional costs and would not enjoy savings, as they would continue to comply with any national rules on labelling.

It should further be noted, that given the limited evidence base for the costs, a full extrapolation of costs to EU level is problematic and risks providing a false picture. In practice, the actual costs would most likely be less than these maximum costs, as a certain proportion of firms would choose not to provide digital labelling. Nonetheless, a broad indication can be offered, for illustrative purposes. Maximum EU-level costs for enterprises under PO2 (but also PO3) based on stakeholder survey data would **be €1.2m (ranging from €0.6m to €3.7m) for one-off costs**, and **€0.7m (ranging from €0.4m to €2.4m)for ongoing** (annual) costs, given the following main assumptions (for a full break down of assumptions please refer to Annex 4).

The fertilising products sector features 3595 enterprises. Given that 99.8% of enterprises are SMEs, this means that approximately 14 are large enterprises, and 3581 are SMEs.

Under PO2, several **types of costs** can be estimated, namely (see details in section 4 and 5 of Annex 4):

1) Ongoing costs[103] related to providing and updating product information specific to PO2 online (e.g. re-training staff, maintenance of software and web pages).
2) One-off costs[104]:
   a. Familiarisation costs
   b. Cost related to providing and updating product information online (e.g. training staff, purchase or development of software and development of web pages, collating/uploading information), and costs of changing physical labels to include QR codes on the product (e.g. purchase of equipment reading QR codes).

It should be noted that some costs may additionally be incurred by the economic operator opting for digital labelling, associated with the application of digital labelling principle 8 (e.g. in terms of printing a leaflet with label information). Although such costs could not be quantified, they are expected to be marginal, given that product information would only be supplied to small portions of the target markets (and otherwise the label information could be provided on the physical label, incurring the baseline costs).

In terms of direct impacts of **PO2** on public authorities, despite positive aspects related to the ease of managing and compiling online data, public authorities could require some investment in equipment and training to facilitate access to digital labels, although it should be noted that 74.2% of Member State Authorities and Conformity Assessment

[103] Please refer to table 4.2 in Annex 4 for more details
[104] Please refer to table 4.1 in Annex 4 for more details

Bodies replying to the stakeholder survey[105] indicated they currently already use digital tools to access label information of products.

Benefits:

Despite such potential costs, the possibility of providing certain information only digitally would lead to cost savings for the industry because:

- The manufacturers, including SMEs, remain free to decide if to use the digital labelling. Consequently, such a decision would be taken by those manufacturers who estimate costs savings at least on medium or long term;
- Digital labels are less expensive to update so in the long term some savings could be expected due to less frequent reprinting of labels;

In the longer term, costs would be offset by savings related to updating physical labels. Feedback from the fertilising products industry associations at the ad-hoc expert group meeting also confirmed that **PO2a – PO2e** will provide some alleviation of costs related to the lack of space on physical labels, in a granular manner (i.e. when some information is allowed to be digitalised some costs are saved, and when most information is allowed to be digitalised, more costs can be saved).

Evidence from the digital labelling study suggests that businesses will be more likely to provide digital labelling to the extent that they can remove information from physical labels, since this will reduce costs. Under the baseline scenario, there are no cost savings to be made from digital labelling, since full physical labelling is still required. In contrast, the **PO 2a-2e** offer the potential for cost savings.

By reducing the frequency of disposing of and redesigning physical labels, there could be some ongoing costs savings for enterprises as digital labels are easier and less costly to update than physical labels. This relates to relabelling due to the (in)stability of product information over time (e.g. for organic fertilisers, the content of the various forms of nutrients may vary from one batch to another, depending on the quality of the input materials used) changes to the product (e.g. different ingredients), changes in distribution of the product (i.e. additional countries) or due to regulatory changes. Evidence from the digital labelling study suggests that the need for redesigns will reduce as the extent of digitalisation increases (i.e. moving through the PO 2a to 2e). The data available is not sufficient to specify the level of cost savings that would be achieved by allowing digital labelling to replace some/most/all information on physical labels. However, an indicative benchmark for the cost of updating a product label is available from a previous study, which found that it costs between €120 and €200 to redesign the physical label for a single detergent product, whereas it take only one hour to revise and upload an online information sheet[106].

[105] Total number of responses = 31.

[106] Support to the evaluation of Regulation (EC) No 648/2004 (Detergents Regulation) - Publications Office of the EU (europa.eu)

Another factor making digital labels less expensive than physical labels is that, enterprises will incur fewer costs in purchasing and maintaining the machinery or equipment required to make physical labels. Evidence from the stakeholder survey suggests that these will reduce as the extent of digitalisation increases. And finally, enterprises will incur fewer costs in printing physical labels and fixing them to products. Again, the evidence from the stakeholder survey suggests that these will reduce as the extent of digitalisation increases.

- The physical labels could include more languages[107], allowing businesses otherwise faced with labelling space constraints to overcome such issues and improve the free movement of EU Fertilising products across the EU;

PO2 would incentivise economic operators to improve the free movement of fertilising products across the EU-27. By reducing the amount of information required on the physical label there should be more space for information in different languages, which according to manufacturers interviewed, will make it easier for them to remain and to grow in the internal market. The consultations with industry[108] indicated that being able to include more languages on the packaging by moving some information under a digital label would mean that it is more cost-effective to distribute products to multiple Member States, which supports increased investment and economies of scale. Such cost savings are seen to be incremental (i.e. with least savings under **PO2a** where the least amount of information is digitised, and most under **PO2d**), as it was found that digital label information is more easily update with less costs.
Around 74% of the economic operators responding to the stakeholder survey indicated they use multi-language labels (out of 70). Most economic operators indicated they provide 3 languages on the label (29%, out of 40), while 24% indicated they provide 6 or more languages on a fertilising product label. Digital labelling and simplifying the physical label could help retailers or wholesalers to overcome the obstacles they sometimes face because of territorial supply constraints[109], and particularly regarding limited space on physical labels to provide multiple languages.
Also, harmonised rules and a level playing field on digital labelling could (indirectly) act as an incentive for those supplying national markets under mutual recognition rules, to CE mark their products, due to the creation of a level playing field.

As there is scope for digitalising *more* information for professional users[110], **PO2b**, **PO2d** and **PO2e** (with **PO2d** allowing overall the highest level of moving information to a digital label) will increasingly support the competitiveness of those enterprises that have challenges regarding space constraints of labels to a greater extent. It is particularly interesting for enterprises who supply professional markets with highly knowledgeable buyers and users (who are therefore less reliant on the information on physical labels). At the same time, by making a distinction between users, for those who supply non-

[107] In the stakeholder survey relevant to industry, 73.86% of industry respondents (manufacturers, blenders and importers, distributors, sales) indicated they provide multi- language labels (with a total of 68 responses).
[108] CSES and PPMI study mentioned before, Section 7.3.1 (specifically referenced above – data on how many languages, etc.)
[109] European Commission (2020). Study on territorial supply constraints in the EU retail sector
[110] See results of the stakeholder survey, Annex 2.

professional markets, under these option manufacturers should continue to provide considerable label information that might be more specifically relevant for non-professional users, as is deemed appropriate (see table 5.2 above), on the physical label.

The table below provides a summary of estimated annual benefits that might accrue to individual enterprises under each of the policy options. The benefits are calculated as follows (for a full break down of assumptions please see section 6 in Annex 4):

- Baseline costs (except cost of redesigning physical labels) are mid-point estimates based on the range of cost estimates provided by enterprises responding to the policy options survey.
- Costs of machinery/equipment to make physical labels varied widely in line with the size of the enterprise, number of product lines, country, etc. For that reason, an intelligent mid-point estimate is taken. For SMEs, this is €5,000 and for large enterprises it is €25,000.
- Cost of redesigning physical labels is based on the mid-point (€160) of the cost range identified for the redesign of a physical label[111]. This unit cost is multiplied by estimates for the number of product lines per company (based on the policy options survey): 6 for SMEs and 300 for large enterprises.
- Percentage annual savings are an average of cost savings anticipated by enterprises responding to the policy options survey for all costs except redesign of physical labels.[112]
- Percentage annual savings of the cost of redesigning physical labels are a best estimate based on stakeholder interviews.

It should be noted that enterprises are unlikely to enjoy significant one-off cost savings as a result of digital labelling under PO2a, where savings will be realised only on an ongoing annual basis.

The differences in estimates of benefits (savings) between the different options under PO2 are provided in the table 6.1 (for a full break down of the benefits please see Annex 4).

Table 6.1 Benefits (savings) accruing per enterprise under policy option 2

	PO2a	PO2b	PO2c	PO2d	PO2e**

[111] An indicative benchmark for the cost of updating a product label is available from a previous study, which found that it costs between €120 and €200 to redesign the physical label for a single detergent product: 2018 Support to the evaluation of Regulation (EC) No 648/2004 (Detergents Regulation) - Publications Office of the EU

[112] The policy options survey collected 93 valid responses, 35.5% (33 out of 93) were economic operators (size of businesses; 33.3% large, 30.3% medium, 24.2% small, 12.1% micro (with only 1-9 employees).

Savings against baseline[113]					
Redesigning physical labels[114]	0%	0%	25%	25%	0%
Machinery/equipment to make physical labels[115]	5%	25%	50%	70%	25%
Printing physical labels (incl. reducing the frequency of disposing)	8%	23%	39%	50%	23%
Fixing labels to packaging	5%	15%	31%	35%	15%
Mid-point cost estimates (€) - SMEs					
Redesigning physical labels	0	0	120	120	0
Machinery/equipment to make physical labels	250	1,250	2,500	3,500	1,250
Printing physical labels (incl. reducing the frequency of disposing)	167	450	775	1,000	460
Fixing labels to packaging	100	283	625	700	300
Total annual savings (€) - SMEs	**517**	**1,983**	**4,020**	**5,320**	**2,010**
Mid-point cost estimates (€) - Large enterprises					
Redesigning physical labels	0	0	6,000	6,000	0
Machinery/equipment to make physical labels	1,250	6,250	12,500	17,500	6,250
Printing physical labels (incl. reducing the frequency of disposing)	2,083	5,625	9,688	12,500	5,625
Fixing labels to packaging	1,250	3,542	7,813	8,750	3,542
Total annual savings (€)- Large enterprises	**4,583**	**15,417**	**36,000**	**44,750**	**15,417**

*Baseline costs are mid-point cost estimates based on the range of cost estimates provided by enterprises responding to the stakeholder survey.

** It should be noted that there was a practical difficulty for the calculations of PO2e in that the policy options survey asked the economic operators to estimate future cost savings by measure but not by policy options (the policy options were not defined when the survey was launched). It's therefore it is not possible to know what % of cost savings would be anticipated once the measures are combined into policy options.

However, an intelligent estimate for PO2e can be calculated. An assumption is made based on the qualitative evidence found during the digital labelling study (e.g.

[113] The percentages of annual savings were sourced from the policy options survey responses. A total of six economic operators provided estimates of the percentage savings for the policy options. These varied, so a mid-point estimate from amongst their estimates was selected. In addition, the responses to the qualitative policy options survey questions and the stakeholder interviews tended to support the finding that increased savings are associated with increased digitalisation.

[114] Percentage annual savings of the cost of redesigning physical labels are a best estimate based on stakeholder interviews.

[115] Estimations based on 13 responses to the policy options survey.

interviews): there was a consensus that the distinction between professional and non-professional users could be problematic; different approaches for different types of users would therefore tend to limit cost savings, as firms might have to assume that any product might end up being used by non-professionals. On that basis, it is assumed that combining measures 3b+5a generates no additional cost savings compared to 3a+3b.

6.3.6. *6.3.2. Impact on the environment*

The digital labelling study found that introducing digital labelling could provide indirect environmental benefits, as it would increase the flexibility of changing label information after a label or product package has been printed (i.e. because the printed QR code or other IT solution would not need to be changed). Industry stakeholders voiced that moving some information could already contribute to environmental benefits of less waste of discarded labels, with such benefits increasing as the amount of label information increases.

On the other hand, it should be noted that **PO2d** and **PO2e** propose to move some safety information[116], for professional users, if it is subject to frequent changes, if it is not linked to imminent risks to human health and environmental protection. Even if such links are not imminent risks to the environment, adverse impacts, for example from incorrect use of a product could still occur (for example in the case of moving the declaration of the content of the substance exceeding maximum residues limits).

6.3.7. *6.3.3. Social impact and on human health*

First of all it is important to note, the Public Consultation revealed that 60.9% of respondents using (both professional and non-professional users) fertilising products currently already access product information via digital means (out of 115 responses), and 61.5% of responses indicated they look for product information online on a daily or weekly basis.

From a social point of view, reduced information on the label has been carefully chosen based on what different users find essential on an EU fertilising product label. **PO2a-**

[116] For safety related label elements that can be moved under M5b include (PFC 1-6): declare the content of the substance exceeding MRL; warning on using the product in such a way to avoid exceeding MRL in the crop; products derived out of animal by-products; declare the content of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials; declare the content of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials; declare the content of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials, declaration of the origin of organic matter (organic nitrogen is declared); air quality impact of urea; caution in using organo-mineral and inorganic macronutrient fertilisers with micronutrients and inorganic micronutrient fertilisers; declaration of the content of micronutrient copper (Cu) or zinc (Zn) in an organo-mineral fertiliser and an inorganic macronutrient fertiliser; content of nitrogen and phosphorus content when they are not declared nutrients; polymer based binding material or mineral growing medium - instructions on safe disposal; declare the content of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials; declare the content of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials.

PO2c do not remove any type of safety information (considered the most important information on a label by all stakeholders), with an aim to foremost protect those users who may not have access to digital information.

Through the interview programme and the focus groups conducted in the framework of the digital labelling study, it was found that most stakeholders (including public authorities, product users and industry representatives), insisted that retaining safety information on the physical label was non-negotiable and particularly for non-professional users. Overall, the findings indicated that professional users were overall (for all categories of information) more open to the digitalisation of at least some product information. For this reason under the **PO2a** and **PO2c**, where no distinction is made between the type of user, the information digitalised is mostly targeted at those pieces of information relevant for professional users.

No safety-related information is removed under **PO2a, PO2b** or **PO2c**, ensuring that effects human health are protected. **PO2d** and **PO2e**, with the inclusion of measure 5b, where most of the label information can be provided digitally for professional users, allows for some safety information (if it is not linked to imminent risks to human health and environmental protection) to be moved under the digital label[117]. Even if such links are not imminent, adverse impacts, for example from incorrect use of a product could still occur.

Secondly, the information which remains on the physical label was found to be the most essential, and by reducing the amount of other label information provided on the physical label, such information could become clearer[118]. In terms of understanding ability of EU fertilising products users, **PO2** makes it easier to distinguish between essential and less relevant information, and identify the information needed at various points in time by different users.[119] Thirdly, it must be noted that the digital labelling principles (see section 6.3.1) were developed to safeguard those not able to access digital information, in case the moved label information is required by those who consult the label.

Concerns of moving under the digital label information relevant to after-purchase criteria (such as use and storage instructions) and safety information (also for professional users and also in terms of seasonal or migrant workers) in situations where a product user may not have internet access or digital literacy were raised[120]. Such information is proposed to be moved to a digital label under **PO2b** for professional users, and under **PO2c – PO2e** for all users. Here it is important to note that such concerns are expected to be mitigated by the application of the digital labelling principles, and particularly principle 8.[121]

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[117] Please, refer to footnote 110 for a full list of safety information removed.

[118] Most respondents (24%, with 199 responses) to the Public Consultation indicated that simplifying the text of labels could improve the communication of information on labels, while 20% indicated that less information on a physical label, and instead providing full details via digital labels could improve the communication of label information.

[119] Evidence from studies by industry and feedback from the Public Consultation suggests that not all users and readers read the information on the label and understand it, in particular non-professional users.

[120] Issues mainly raised during interviews with public authorities.

[121] Digital labelling principle 8: Economic operators who opt for the digital label shall ensure that appropriate alternative ways of providing information must be available in case of lack of digital tools or

Although social impacts or impacts on human health of the digital labelling principles were not analysed under this assessment, the social implications of the digital labelling principles are expected to be high. Particularly as digital labelling would only be allowed on condition of meeting those principles.

Further, if digital labelling is implemented, it may become easier for those looking for specific information to find that relevant information under a digital label,[122] as users would be able to search the label information by key words (and the digital information will be "complete"[123] and "searchable"[124]).

6.3.8. *6.3.4. Stakeholders view on PO2a- PO2e*

Overall **industry stakeholders (manufacturers)** are in favour of PO2 as it provides scope for economic operators to avoid costs related to labelling, while providing the choice for those who do not want to digitalise to provide all information on the physical label. Industry saw **PO2a** as positive and is supportive especially if higher levels of digitalisation are not possible – it is a considered a reasonable step. In terms of the views towards **PO2b** and **PO2d** and **PO2e** one part of industry[125] saw this PO as very positive, allowing the possibility of more cost savings and waste reduction through the ability to split between users. Others[126] doubted that it was possible to split user groups in reality, as this is currently not the case in the FPR. Slight preferences among industry stakeholders was for **PO2a** and **PO2d**[127] (PO2d allows for the highest amount of label information to be moved to a digital label). The difference in preference for these two options may be explained by the different level of digitalisation already exercised by different companies.

General preferences of **public authorities**[128] was for PO2a and PO2b[129], and particularly as a model for transition (i.e. to gradually shift to more digital labelling once confidence

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skills, or in the absence of network access, both before buying the product and after having bought the product.

[122] According to Digital labelling principle 3: The format of the data provided digitally must be appropriate (e.g. rules on font size, the content of the digital label must be searchable); and Digital labelling principle 5: Accessibility of the data both in terms of ease of access (e.g. "two-click" maximum rule to access the information), and in terms of accessibility for users (e.g. also for users with disabilities. Access to the digital label must be free and without a need for prior registration or a password, or prior download of applications. Access limitations for certain user groups (e.g. geo-blocking in accordance with Regulation (EU) 2018/302) are not allowed.

[123] See digital labelling principle 1.

[124] See digital labelling principle 3.

[125] Based on feedback given by industry associations including for growing media, liming materials and plant bio stimulants in the ad-hoc expert group meeting.

[126] Based on feedback from industry associations including for blenders in the ad-hoc expert group meeting.

[127] As found in the policy options survey, please note the low amount of participation to this question, as only 16 responses were counted.

[128] A general low-response rate of public authorities, conformity assessment bodies, market surveillance authorities should be noted. In case of Conformity Assessment Bodies and Market Surveillance Authorities might be explained with the fact that there few bodies that are directly and solely responsible with the assessment and monitoring of fertilising labels, as the regulation applied only from 16 July 2022.

is gained). However, it should be mentioned that it was raised that is was preferred to maintain physical labelling in a transitory period in order to safeguard the information for users with no digital access, and that only after evaluating the transitory period, a decision should be made whether to completely phase out information on the physical label. Further, in terms of **PO2b**, there was some disagreement between national authorities in terms of the feasibility of applying a distinction between professional and non-professional users.

5.6. Policy Option 3: All information is provided digitally for certain categories of products

The impacts of the inclusion of PO3 differ substantially to any other policy options in terms of benefits. However, as the 'digital labelling principles' will apply to all policy options including digital labelling (which means if some label information is to be included on the physical label only, all the label information must be provided under that digital label), the costs under PO2 and PO3 are expected to be the same. As indicated above, the digital labelling principles will apply to all policy options including digital labelling, including PO3.

6.3.9. *6.4.1. Economic impacts*

Feedback from the fertilising product industry in general and some fertilising product sectors in particular (e.g. growing media and blenders) suggest that there could be valuable cost savings generated by this sub-option (50% said this sub-option would offer 'more' or 'much more' economic benefits related to better capture and management of data, or efficient use of products)[130], when compared to the current situation. This would make industrial purchasing operations more efficient and manage better the (actual and amount of) information on such products. For products for industrial use this means access to digital information is more easily compiled and adapted in order to create the new fertilising product blends. For products supplied in bulk, having such information in a digital format could contribute to ease of storing and re-accessing such information, especially when a bulk batch of EU fertilising products is used over a longer period of time.

PO3 significantly contributes to the second identified problem (labels are difficult to manage because of the extensive requirements under the FPR). PO3 further meets general objective 2 and specific objective 2, as the effective functioning of the Internal Market in fertilising products is ensured, by improving the free movement of fertilising products across the EU. In this context, benefits in terms of no constraints of label space to allow for multi-language labels are relevant for products sold to industrial users, but also (to a lesser extent) to products sold in bulk[131].

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[129] Generally found to be preferred by public authorities during the feedback provided in the ad-hoc expert group meeting on 15 March 2022, which was attended by public authorities as well as EU industry associations.

[130] Finding from the policy options survey, number of responses = 42.

[131] As here, currently bulk products are accompanied by a separate leaflet where space limitations are not as crucial as when affixed to the actual packaging.

Table 6.2 Benefits (savings) accruing per enterprise under policy option 3

	PO3
Savings against baseline	
Redesigning physical labels	50%
Machinery/equipment to make physical labels	80%
Printing physical labels (incl. reducing the frequency of disposing)	65%
Fixing labels to packaging	40%
Mid-point cost estimates (€) - SMEs	
Redesigning physical labels	240
Machinery/equipment to make physical labels	4,000
Printing physical labels (incl. reducing the frequency of disposing)	1,300
Fixing labels to packaging	800
Total annual savings (€) - SMEs	6,340
Mid-point cost estimates (€) - Large enterprises	
Redesigning physical labels	12,000
Machinery/equipment to make physical labels	20,000
Printing physical labels (incl. reducing the frequency of disposing)	16,250
Fixing labels to packaging	10,000
Total annual savings (€)- Large enterprises	**58,250**

Overall, the digital labelling study found under PO3, enterprises are unlikely to enjoy significant one-off cost savings as a result of digital labelling. However, a mid-range possible net annual benefits (based on the assumption that all enterprises that export would gain from savings associated with reduced physical labelling requirements because they already provide digital labelling or would newly introduce it; i.e. administrative costs savings) to enterprises would be €1 M across the EU 27..[132] [133] Under PO3 it should be noted that the costs and benefits are based on 14% of total enterprises which are assumed to only provide products in bulk or products which are sold to industrial users (e.g. blenders) and can thus make savings under PO3 (i.e. 2 large enterprises and 150 SMEs).

Cost savings are expected to be the greatest under PO3, compared with other policy options. First, by utmost reducing the frequency of disposing of and redesigning physical labels, as digital labels are easier and less costly to update than physical labels. Evidence

[132] See Annex 7 for a full breakdown of the costs and benefits.
[133] Assumptions remain consistent with those presented under section 6.3, for more details please refer to Annex 4.

from the consultations suggests that the need for redesigns will reduce as the extent of digitalisation increases (i.e. moving through the Policy Options from 2a to 2e, with PO3 offering the highest cost savings).

As under the economic analysis of PO2, it should be noted that some costs may additionally be incurred by the application of 'digital labelling principle' #8 (e.g. printing a leaflet with label information). Although such costs could not be quantified, they are expected to be marginal given that product information would only be supplied to small portions of the target market.

Overall, considering the target users of bulk and industrial use products, PO3 is a low risk – high impact option. Under this option, proportionally, the greatest cost savings arise, i.e. due to the flexibility provided when all information is digital.

6.3.10. *6.4.2. Impact on the environment*

A major driver for the support of **PO3** overall is the positive environmental impact of using and wasting less product packaging and printed labels, particularly in terms of needing to change product labels due to fast changing information, and products which will be repackaged before reaching the end-user (those products for industrial use). Also for bulk products, label information under Annex III of the FPR would no longer be required to be printed and accompanying the bulk product in a leaflet.

However, it must be noted that under **PO3** all label information is provided only digitally, including safety-related information is removed from the physical label under this option, those users of bulk and industrial fertilising products would need to access all information digitally. Again, the digital labelling principles were established in order to protect those without access to the digital information. Although the application of the principles is relevant, it should be noted that the environmental impacts of those principles have not been assessed.

At the same time, even though all information, including use instructions and safety-related information is removed under **PO3**, it does not have the same consequence as for options under **PO2**. This is mainly due to the type of end user using products for industrial use and bulk products (mainly companies and professional users, with vast experience of the products they are using). Also, bulk products currently are supplied without packaging, meaning the information supplied with the product can easily be misplaced and is not attached to the product itself. This could ensure the information under the digital label is easier accessed and stored, allowing for the better use of fertilising products.

It can further be noted that the use of fertilising products may differ depending on local climatic or soil conditions[134], and due to less space limitations of a digital label, product use instructions could be communicated in more detailed and specific ways to accommodate for precision application of a product. This could have indirect downstream environmental impacts, in terms of nutrient losses.

[134] As raised during the interviews with stakeholders.

6.3.11. *6.4.3. Social impact and on human health*

As all information, including safety-related information is moved under this sub-option, (particularly relevant to industrial and professional) product users would have to ensure that they are able to access the information under the digital label. As stated above, this sub-option would trigger the 'principles of digital labelling', the economic operator placing on the market the product would need to ensure appropriate alternative ways of providing information in case of lack of digital tools or skills, or in the absence of network access, both before buying the product and after having bought the product.

Similar to the environmental impacts under **PO3**, even though all information, including safety-related information is removed, it does not have the same consequence as for options under **PO2**. This is mainly due to the type of end user using products for industrial use and bulk products (mainly companies and professional users with vast experience). Also, for those products currently supplied without packaging, this option could ensure the information under the digital label is easier accessed and stored, allowing for the better protection of human health.

6.3.12. *6.4.4. Stakeholders view on policy option 3*

Overall, strong support was received for this policy option through the policy options survey and through the ad-hoc expert group meeting[135]. The industry stakeholders (manufacturers) supporting this option indicated they usually have digital systems (i.e. websites) operating already, but which would alone (without the present physical label) not be allowed under the FPR. Clear benefits would arise from allowing digital labelling only under the FPR.

For professional users, there would be some benefits of being able to access more technical information in digital form. Due to the specific types of products covered by this PO, non-professional users are not affected.

7. 7. HOW DO THE OPTIONS COMPARE?

In the table below options are compared, and subsequently discussed.

[135] See minutes available here Circabc (europa.eu)

Criteria	Option 1	Option 2a (M2)	Option 2b (M3a+M3b)	Option 2c (M4)	Option 2d (M5a+M5b)	Option 2e (M5a+M3b)	Option 3 (M6)
The degree of simplification of the label through digitalisation	(-) Nil	+ A certain level	++ Partly more than PO2 (in the case of M3a)	+++ A high level	+++ A high level	+++ A high level	++++ Highest level of digitalisation of all options
The type of information digitalised	Nil	Frequently changing information if not linked to S; A good deal of AE; AP	Frequently changing information if not linked to S; A good deal of AE; AP	Frequently changing information if not linked to S; Some of AE, AP, IC[139]	Some safety (S) information under M5a; most AE; AP and IC	Frequently changing information if not linked to S for M3b, also some s FOR m5a; Some/most of AE, AP, IC	All information, including S, for M6
Split professional and non-professional users?	No	No	Yes	No	Yes	Yes	n/a[140]
Economic impacts (cost savings, ease of market access	( ) Neutral	+ Positive impacts	+ Positive impacts	++ Strong positive impacts	++ Strong positive impacts	+ Positive impacts	+++ Very strong positive impacts

[136] Safety information.
[137] Information relevant to agronomic efficiency.
[138] Information relevant after purchase.
[139] Information on content (not linked with agronomic efficiency).
[140] This option is concerned only with professional and industrial users. The option targets different products and not users.

Criteria	Option 1	Option 2a (M2)	Option 2b (M3a+M3b)	Option 2c (M4)	Option 2d (M5a+M5b)	Option 2e (M5a+M3b)	Option 3 (M6)
and free market movement across EU-27)							
Costs of implementation	Nil	In terms of individual enterprise costs, the costs of implementing PO2a-PO2e and PO3 options will be the same because if any information is moved to a digital label, the digital label must be complete. Differences between enterprises will only result from the extent to which they are already provide digital product information. As the implementation will be voluntary, cost savings are expected to be greater than any implementation costs. Total enterprise costs of optional digital labelling is expected to be: For large enterprises: between €14,998 – €29,998 for one-off costs and between €2,700 - €7,700 for ongoing (annual) costs. For SMEs: between €1,796 - €6,046 for one-off costs and between €1,170 - €3,770 for ongoing (annual) costs.					
Recurring annual savings (€, all enterprises EU27)	0	308,590	487,500	4,825,500	5,523,000	487,500	1,067,500
Net recurring benefits[141][142] (€, all enterprises	-3,580,288	286,950	465,900	4,099,560	4,797,060	465,900	966,520

[141] Calculated at end of year 1; please, refer to Annex 3 for summary tables of costs and benefits, and Annex 4 for the assumptions used.

[142] This is modelled on the highest cost scenario. Given that the cost of implementation of digital labelling will be marginal, this was not considered for those enterprises already providing some product information online. So the net recurring benefits are mainly relevant for those companies not yet proving product information online, as an initial digitalisation cost will be incurred. Only benefits can be imagined for those companies already providing product information online.

Criteria	Option 1	Option 2a (M2)	Option 2b (M3a+M3b)	Option 2c (M4)	Option 2d (M5a+M5b)	Option 2e (M5a+M3b)	Option 3 (M6)
EU27))							
Net one-off costs (€, all enterprises EU27)	-5,737,446	**119,984**	**119,984**	**1,201,176**	**1,201,176**	**119,984**	180,860
Environmental impacts	( ) None	+ Little detail is available regarding the quantification of environmental consequences of waste reduction. It has been identified as an indirect benefit. In principle, the more information is removed from the physical label, the greater the scope for reducing environmental impacts due to less packaging/label waste. However, if AP information (e.g. use instructions) is not followed due to not being on the label, this can have a counter effect and inadequate of products can have a negative impact on the environment. On the other hand, the digital labelling principles aim to safeguard those without access to the digital information by requesting that alternative means of communication are available.					++ Although the data collected does not allow for quantification, of such an impact, major support was based on the positive environmental impact of using and wasting less product packaging and printed labels.
Stakeholder impacts: - Industry	( ) Neutral as compared to the baseline	+ Cost savings	+ Cost savings	++ Strong cost savings	++ Strong cost savings	+ Cost savings	+++ Most cost savings
- Professional users	( ) Neutral as compared to the	+ Not much affected, with a slight positive	- Information on the physical label becomes clearer. Some professional users may find information elements missing from the		- Some professional users may think too much is removed, given that part of S information is removed.		( ) Neutral, although a slight positive impact may be experienced as those using bulk products may benefit

Criteria	Option 1	Option 2a (M2)	Option 2b (M3a+M3b)	Option 2c (M4)	Option 2d (M5a+M5b)	Option 2e (M5a+M3b)	Option 3 (M6)
	baseline	impact as the information on the physical label becomes clearer.	physical label.				from better access and clearer information. On the other hand a slight negative impact may be experienced as all information, including safety information is only available digitally.
- Non-professional users	( ) Neutral as compared to the baseline	+ The information remaining on the physical label becomes clearer. Otherwise not much affected, as the information moved to a digital label is not so relevant.	+ The information remaining on the physical label becomes clearer. Otherwise not much affected - non-professional users think S and AP information are essential, so under M3a, such information remains on the label.	- May find some information missing on the physical label – as some AP information is removed from the physical label.		+ Same as for Option 2b	( ) Not affected.
Effectiveness SO1- Improved readability of the labels of EU fertilising	+ Potentially a more legible and	++ Increasing space on the label by reducing text requirements could provide the opportunity to make what remains clearer – more effectively communicated. The digital version of the label has the potential to provide more transparency and clarity (e.g. digital label information will be searchable), and act as a link to other useful information for which there is no space on the					n/a No data was collected in terms of the improved readability of labels

Criteria	Option 1	Option 2a (M2)	Option 2b (M3a+M3b)	Option 2c (M4)	Option 2d (M5a+M5b)	Option 2e (M5a+M3b)	Option 3 (M6)
products (SO1)	effective version of the digital label only (if the guidelines are used).	label (e.g. more detailed use instructions due to different locations, soil types and climates).					
Effectiveness SO2 -Facilitate the managing of labels by economic operators (SO2)	( ) Neutral	+ Positively effective impact in terms of managing label information		++ Highly effective impact in terms of managing label information	+++ Very highly effective in terms of managing label information	++ Highly effective impact in terms of managing label information	++++ Most highly effective in terms of managing label information

*The take-up rates for these options would be lower than the estimates used here; only companies that perceive positive net benefits would choose to digitalise (unless, they perceive other benefits). The net benefits for these options would therefore be zero at worst.

8. 8. PREFERRED OPTION

The preferred option is PO2a, meaning the optional digitalisation of certain information of the label of EU fertilising products, without making a distinction between professional/non-professional users combined with PO3, meaning the optional digitalisation of all the information for products sold to industrial users or products sold in bulk.

While PO2a is the most cautious in terms of the scope of the information to be provided only digitally, combining this option with PO3 ensures the objectives are most effectively addressed, keeping a balanced approach to the different views of stakeholders.

Firstly, option 2a implies keeping all the safety related information on the physical label. By reducing the information to be included on the physical label, safety information will become more visible thus contributing to the objective of protecting the health and the environment. As part of the support study, the interviews and focus groups confirmed that both non-professional and professional users found safety related information the most essential information on a fertilising product, so that category of information should stay on the physical label. It was further found that non-professional users relied mostly on the physical labels only (i.e. they did not obtain product information from other sources then directly from the product label). Professional users, on the other hand, often had past experience with products or training, or relied on technical advisors in determining the best product for their needs. On the other hand, some of the agronomic efficiency criteria was found to be too technical for non-professional users. Consequently, this category of information is proposed to be moved to the digital label with priority (along with information on content). This option takes most into account the digital divide. Removing all label information, including safety information, under option 3 is justified due to the particular users concerned with the products in question.

Secondly, this combined option will reduce labelling costs and will create a level playing field between economic operators. The labelling costs will be reduced both by including more languages on the label and by avoiding frequent changes.

Lastly, this combined option is easier to apply and enforce, as no distinction is made between professional and non-professional users. Such a distinction does not exist in the FPR itself. Such a split would have implied both that the manufacturers will have to target their products to one or the other of the two categories and that the enforcement authorities would have had to check that the products for professional users are not sold to non-professional users.

This option complies with the proportionality principle. It does not exceed what it is needed to achieve the objectives followed. The digitalisation of the labels will remain optional. Whenever it is used, it will be accompanied by the general principles of the digitalisation, to ensure the quality and the accessibility of the information provided digitally. In coherence with the approach that will be taken on digital labelling for CLP

and detergents, as experience and confidence is gained in digital labelling, it could be possible to increase the amount of information available digitally in the future, which may further increase the simplification potential for industry.

The preferred option implies applying the same conditions both for products produced in the EU and those originating from third countries. Given its optional nature and that it basically implies more choices for the labelling of EU fertilising products, this option is not trade-restrictive.

8.1. REFIT (simplification and improved efficiency)

To make sure that the FPR remains fit for purpose, the Commission's rolling regulatory fitness and performance programme (REFIT)[143] identifies opportunities to simplify laws, streamline procedures and eliminate unnecessary burdens without undermining the objectives and benefits of the Regulation in question, e.g. by means of looking for digital solutions. This impact assessment accompanying the proposal for a legislative revision of the FPR has thus aimed to analyse the potential for simplification and burden reduction.

This initiative directly contributes to the REFIT scoreboard (Areas 13. Chemicals legislation (other than REACH)), in the area identified where communication of hazard and safety information to consumers can be improved and simplified, including by using digital tools. Reaping the benefits of the digital age will result in potential burden reduction for SMEs, improved enforcement and compliance, reinforcing cooperation between competent authorities, including customs and market surveillance authorities[144].

8.2.Application of the 'one in, one out' approach

First of all, this initiative was driven by the request of industry as a simplification measure in response to the adoption of the FPR, and is in line with the trends of digitalisation.

Given the voluntary nature of the preferred option, no costs would be imposed on businesses. It is expected that businesses would only incur direct adjustment costs related to digital labelling (see Annex 4 for a full breakdown of costs) if they perceived the potential to enjoy reduced costs (or if they perceived sufficient other business benefits to justify any cost increase).

On the other hand, given the optional nature of PO2a, the benefits would also not materialise if no enterprises opt for digital labelling, as it is not economically viable. In order to make PO2a as economically attractive as possible, frequently changing information on product labels have been moved to the digital label with priority. The data collected as part of the study did not go into the level of detail on particular cost savings per labelling requirement. However it must be noted that benefits are particularly associated with moving such fast changing information to a digital label, meaning that in the longer term it can be expected that labels would need to be (re)printed less frequently.

Therefor there are no specific costs (only cost savings) related to the 'one in, one out' approach since physical labelling rules would remain, but would only be revised to allow

[143] REFIT – making EU law simpler, less costly and future proof | European Commission (europa.eu)
[144] Internal market, industry, entrepreneurship, SMEs and statistics (europa.eu)

some of the labelling requirements to be provided digitally only. Any additional costs of digital labelling compared with the baseline should in principle be offset by the cost savings associated with better and more flexibly managing information of labels, by moving information to a digital label.

The estimates for preferred policy option 2a suggest that a mid-range possible one-off net benefits would be negative accruing to all enterprises in EU27 (i.e. --119,984€, based on the assumption that all enterprises that export would gain from savings associated with reduced physical labelling requirements). Annual maximum recurring benefits for PO2a would be 856,317€ accruing to all enterprises (EU27). Under option 3, maximum possible one-off net benefits would also be negative (i.e. --519,674-€, based on the same assumptions as for PO2a).[145] However, annual maximum recurring net benefits for PO3 would be €2,961,370 accruing to all enterprises[146] (EU27).

This means that overall, the preferred policy package has a maximum possible recurring net benefit of €3,827,687. Net recurring benefits minus one-off costs would equal to €3,188,029 net befits at the end of year one.

Further, as experience and confidence in digital labelling is gained, increasing the amount of information allowed to be moved digitally may further increase, therefore increasing the simplification potential for industry in the future.

9. 9. HOW WILL ACTUAL IMPACTS BE MONITORED AND EVALUATED?

As with any new regulatory initiative, if the preferred option is implemented, there will be periodic evaluation and monitoring. In particular, monitoring could be undertaken by the Commission in conjunction with EU and national industry associations, and consumer associations to get feedback from their members regarding how well (or otherwise) the digital labelling rules are working, and on whether the remaining information on physical labels is being communicated in a more effective manner or not, and if expected cost savings from the introduced flexibility are experienced.

The importance of regular feedback loops between the Commission and key stakeholders in the industry and consumer associations and associations representing the interests of both professional and non-professional users can be highlighted. This would provide an opportunity to learn any initial lessons from digital labelling, including its advantages, drawbacks and any practical challenges in its implementation.

An evaluation of the FPR will be carried out by 16 July 2026[147], and such an evaluation will gather evidence to assess how this specific intervention has performed (or is working), taking account of the expectations in the context of this impact assessment and ensuing from the adopted legislation and whether there were unintended or unexpected effects that were not anticipated and taken into account in the impact assessment. The evaluation will draw conclusions as to whether the EU intervention remains fit for its

[145] One-off costs are expected to remain the same under PO2 and PO3. Please refer to Annex 4 for a full breakdown of cost and benefit calculations.
[146] Relevant to PO3 14% of all enterprises are assumed to only provide products in bulk or products which are sold to industrial users (e.g. blenders).
[147] Article 49 FPR, Report.

purpose, should be adjusted for greater effectiveness, relevance and coherence, and/or to eliminate unnecessary burdens or inconsistencies, or should simply be repealed.

The following indicators could be used to evaluate the digital labelling aspects:

Objectives	**Indicators**	**Sources of information**
Improved readability of the labels of EU fertilising products	Uptake of digital technologies within the sector Perceived satisfaction of users (professional and non-professional) with the digital labelling	Evaluation/ consultation of stakeholders /users
Facilitate the managing of labels by economic operators	Costs savings realised due to digitalisation of labels	Evaluation/ desk research / consultation of enterprises

ANNEX 1: PROCEDURAL INFORMATION

1. LEAD DG, DECIDE PLANNING/CWP REFERENCES

The lead DG for this initiative is the DG for Single market, Industry, Entrepreneurship and SMEs (DG GROW). The Directorate in charge is Directorate F – 'Ecosystems I: Chemicals, food, retail'.

The initiative is encoded in Decide Planning with the reference PLAN/2021/10559.

ORGANISATION AND TIMING

The inception impact assessment consultation period ran from 14 July 2021- 20 September 2021.

The public consultation period ran from 24 November 2021 – 17 February 2022. A factual summary of the findings has been published[148].

An inter-service steering group was convened on 10 May 2021 and chaired by DG GROW F2. The last meeting of the ISSG on the final draft impact assessment report was held on 17 June 2022.

The following Directorates-General participated to the inter-service steering group: SG, LS, AGRI, JUST, TRADE, CNECT, GROW, JRC, SANTE, ENV, and the European Chemical Agency (ECHA).

2. CONSULTATION OF THE RSB

The RSB was consulted in an upstream meeting on 12 January 2022. This impact assessment was submitted to the RSB on 22 June 2022.

The RSB issued its opinion through written procedure on 22 July 2022 following which this Impact Assessment was revised as follows:

RSB Recommendations	Revisions introduced
What to improve	
The report should set out clearly the coherence of the initiative with other initiatives aimed at the digitalisation of the labels or documents accompanying products for construction products and medical devices as well as for the initiatives under	In point 1.1 in the SWD, it is explained what steps have already been taken to ensure coherence among the various initiatives on digital labelling of chemicals and how coherence will be ensured in future. The Commission ensured coherence

[148] 'Have your say', Chemicals – simplification and digitalisation of labelling requirements; https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12992-Chemicals-simplification-and-digitalisation-of-labelling-requirements_en

preparation concerning batteries, detergents, cosmetics and hazardous chemicals. It should provide the dynamic baseline taking into account likely future developments. It should explain better what prevents Member States from voluntarily adopting the best practices in the near future under a dynamic baseline scenario and explain how the baseline will evolve and what the uncertainties are.	in developing all the proposals and will put forward similar digital labelling general rules. The Commission will ensure further ensure coherence in supplementing these general principles in a subsequent step, once digital labelling is introduced in the basic Regulation. More details on the dynamic baseline have been introduced in sections 5.1.5 and 5.1.6 as regards the tendency of companies to take up digital labelling and the impact of DPP. It is also clearly stated that none of the Member States adopted rules on the digital labelling of fertilising products and that their competence in this field is limited given the existence of harmonisation rules.
The report should better explain the risk that the estimated benefits of the preferred option on digital labelling of certain information will not fully, or not at all, materialise given that the analysis shows that the benefits for this option will not outweigh the costs resulting in overall negative net benefits. It should reiterate more clearly the benefits associated with moving certain information to a digital label and highlight the fact that economic operators will opt for digital labelling only if is economically viable. In this respect, also accounting for the dynamic baseline, the report should provide a range (rather than a single point) for the estimate of the number of businesses that are assumed to choose to provide digital labelling as a result of this initiative. It should also present the level of stakeholder support	On the estimation of the number of companies expected to opt for digital labelling, more information has been included in the section dedicated to costs in 6.3 of the SWD. The estimation is made depending on the size of the enterprise and statistical data available as regards % of enterprises involved in trade in two or more Member States. In section 8.2 of the SWD it is explained that the benefits will occur if the economic operators will opt for digital labelling as they find it economically viable.
The report should elaborate on the indirect and possible unintended consequences associated with providing certain information digitally instead of providing it on the physical label. It should clarify users' attitude to access effectively and to use digital labelling.	In section 8 in the SWD, it is explained that as all safety information is maintained on the physical labels for packaged products sold to end-users, then there are no risks created associated to the introduction of the digital labelling. As regards products for which full digitalisation will be allowed, the situation is not drastically different to providing the information on a document not linked in any way to the products itself

	(as it is sold in bulk).
The report should clarify what success would look like and explain to what extent the success criteria of the policy initiative are measurable.	This information is provided in section 9 in the SWD.

3. EVIDENCE SOURCES AND QUALITY

This Impact Assessment was supported by an outsourced study[149] (hereafter the 'digital labelling study') carried out by an external contractor. The study had a scope extending to all aspects related to digital labelling under Annex III of the Fertilising Product regulation (FPR)[150].

As part of the study, the consultants carried out a large number of consultation activities including 72 semi-structured interviews with Public authorities, Conformity assessment bodies and market surveillance authorities, Industry stakeholders, Professional users and Non-professional users of fertilising product, Academia and Non-Governmental Organisations.

Further, the consultants carried out online surveys (a targeted 'stakeholder survey' and an specific survey on possible policy options (also referred to as the 'policy options survey')), a survey experiment (which explored the effects of labelling changes on key behaviours among professional and non-professional users of fertilising products), focus groups (with product users) and usability testing exercise (which tested the popularity and potential use of various digital technologies that could be implemented on the fertilising product labels).

The findings at various stages of the study (including the inception, interim and draft final reports) were discussed with an Inter Service Steering Group, and were presented in the Commission expert group on EU Fertilising Products.

Evidence was also gathered during these consultations of the Commission expert group on EU Fertilising Products. Further, a workshop on digital labelling was held on 26 November 2021, which was open to all interested stakeholders. Another targeted workshop with the members and observers of the Commission expert group on EU Fertilising Products was held on 15 March 2022 (also referred to as the ad-hoc expert group meeting).

[149] CSES (2022) Impact Assessment Support study on the use of digital labelling for EU Fertilising Products,, not yer published

[150] Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32019R1009

The impact assessment provides qualitative and where possible quantitative information regarding the positive and negative impacts generated by each Policy Option (PO), reporting the main information on the sectors and economic operators mostly affected by the proposed changes. This analysis is based on the evidence gathered through all consultation activities.

Sources have been chosen as reliable as possible. Whenever possible, economic, social and environmental impacts were assessed quantitatively, and is otherwise substantiated by triangulated qualitative findings. Similar data were cross-checked whenever possible, in particular with findings from another parallel digital labelling study on CLP and Detergents. It is acknowledged that some data are estimates; in order to compensate for possible inaccuracies, throughout this document benefits have been estimated in a conservative manner.

It has been consistently attempted to quantify impacts, but sometimes limitations of data have made possible only a qualitative analysis:

Data needed for the analysis has been obtained from multiple sources, chosen as reliable as possible[151]. Relevant limitations of data generated important challenges in the quantification of costs and benefits. Challenges encountered:

As it remains the free choice of manufacturers to apply the FPR or to rely on national rules. Therefore, it is difficult to estimate the number of economic operators who would make this choice as of 16 July 2022 or in the following years.

The following assumptions are worked with:

1. Given that compliance with the FPR is more difficult to achieve and prove, there is no guarantee that all the manufacturers which rely now on EC Fertilisers Regulation will continue to reply on the FPR as of 16 July 2022.
2. As for the products which are not covered by EC Fertilisers Regulation, but could be covered by the FPR as of 16 July 2022, making an estimation on how many will opt for the FPR is even more difficult.

Therefore, insufficient information and data are currently available on likely future trends for all product groups to translate these into a full quantitative analysis. Furthermore, data on the number of affected economic operators in the value chain is difficult to generate. More generally, there is a general lack of granular information on the economic and social impacts of the policy options, as it currently stands. Thus, the quantification of costs and benefits is as comprehensible as possible for both the baseline scenario and different policy options, but the limitations should be considered.

[151] See Annex 4

ANNEX 2: STAKEHOLDER CONSULTATION (SYNOPSIS REPORT)

1. THE CONSULTATION ACTIVITIES

The following consultation activities have been carried out:

- Interviews
- An Open Public Consultation
- A targeted survey of stakeholders
- Focus groups
- A survey experiment
- Usability testing
- An Expert Group workshop on options for digitalisation of labels
- A survey on costs and benefits related to various digitalisation options

These will now be dealt with in turn.

1.1 Interviews

The purpose of interviews was to gather in-depth information from different stakeholder groups, to obtain otherwise unobtainable observations, such as the nuanced perception of users and important details that are hard to register during quantitative exercises.

In-depth interviewing comprised a scoping phase, which enabled the researcher to:

- Become more familiar with the topic at hand, gather the relevant background data and start identifying important stakeholders in the field
- Provide data for refining the interview questionnaire and the structure of further data collection exercises.

The second stage of the interview programme gathered information with the use of an interview questionnaire, focusing on tasks as outlined in the table above. In detail, the interview programme aimed to collect information about:

- Perceptions and understanding of fertilising product labels among various types of users
- Identification of essential labelling information
- Use patterns
- Benefits and disadvantages of digital labelling
- Analysis of potential IT solutions, IT literacy and readiness to shift to digital labelling
- Industry labelling practices, potential of digital labelling, cost categories associated to digitalisation

- Exploration of previously unidentified aspects

Overall **72 semi-structured interviews** were conducted. The table below summarises the completed interviews in terms of the different target groups.

Table 9.1: Completed interviews by stakeholder groups

Type of stakeholder	Interviews completed
Public administration, national and European authorities	3
Conformity assessment bodies and market surveillance authorities	7
Industry stakeholders including manufacturers, importers, distribution intermediaries and suppliers	40
Professional users of fertilising products (including associations representing professional consumers)	12
Non-professional users of fertilising product (including gardening lecturers, consultants)	7
Academia; Non-Governmental Organisations, civil society and citizens	3

During this phase, more than 500 potential interviewees were contacted. With regards to stakeholder group responses to the survey, although responses from **public administration, national and European authorities, and conformity assessment bodies and market surveillance authorities** were disappointing, this was compensated for by their participation in the Expert Group and in particular with the written inputs to the Expert Group Workshop (see below). Representatives of the **academia and NGOs** were also sought in large numbers. They were however largely unresponsive, although some NGOs that declined interviews did submit inputs to the consultation and Expert Group Workshop. The large number of interviews with **industry stakeholder and fertilising product users** revealed that input from these groups was often divergent, varying, for example, according to the Product Function Categories (i.e. PFCs) and the types of users in question. The large number of interviews with industry stakeholders has been taken into account when evaluating qualitative results and the possible imbalance in the representation of interests.

Interviews were carried out **online or via phone**, some participants also provided written answers to our interview questionnaire. Recordings were transcribed and, if needed, translated to English. The analysis of qualitative data from interviews was conducted with the use of coding sheets.

- The interviews provided wide ranging and very valuable inputs that were incorporated into the report findings. Interview responses reflected the diversity of the stakeholders involved, as well as varying views within stakeholder groups, the different types of farmers, farming practices, hobby gardeners, manufacturers, exporters, public authorities, etc.

1.1. 1.2 Open public consultation

An open public consultation (OPC) was held to obtain feedback for the "Inception Impact Assessment" (on the 'have your say' webpage on the 'Proposal for a Regulation of the European Parliament and of the Council laying down rules on the simplification and possible voluntary digitalisation of labels on chemicals and amending Regulations (EC) No 1272/2008, (EU) 2019/1009 and (EC) No 648/2004. Short title: Simplification and digitalisation of labels on chemicals (CLP, Detergents, Fertilising Products).'

The OPC was conducted by the European Commission with the aim to gather opinions on the possible digitalization of labelling of various chemical products, among them, fertilisers. The consultation was available in all 24 official EU-languages. Altogether, 205 stakeholders participated in the open public consultation. 117 respondents indicated to use fertilising products at work or at home.

The aim of the OPC was to provide data on the knowledge, preferences and opinions of various stakeholders regarding the digital labelling of fertilising products (as well and detergents and other chemicals).

205 responses were collected, most of which come from the industry i.e. companies and business associations. Nearly half (48.7%) of the responses were from large organisations (>250employes).

Type of respondent	Frequency	Percentage
Business association	36	18%
Company/business organisation	96	47%
Consumer organisation	3	1%
EU citizen	47	23%
Non-EU citizen	2	1%
Non-governmental organisation (NGO)	1	0%
Public authority	10	5%
Trade union	1	0%
Other	9	4%
Total	**205**	**100%**

25.9% were from Germany, 10.2% from France, 9.8% from Belgium and 6.8 % from Spain.

- **Key findings**
- For the purposes of this study, it was possible to extract the answers specifically relevant to fertilising products. The consultation provided useful information on topics including the following. However, it should be kept in mind throughout that a sizeable proportion of the answers are form industry representatives. Also FPR labels are not in use at time of writing so it can be questioned if respondents have actual experience of such labels).
- 54.5% of respondents (N=200) could usually understand the information printed

on the label of a fertilising product, 12% to some extent and 5% some of it.

- Most respondents can access products information via IT solution or digital tools (60.9%) and look at information online at least weekly (61.5%).
- Reading labels before purchase was the most frequently chosen option among respondents, followed by reading before using the product. Thus, respondents use labels much less after usage, e.g. for storage, disposal or in case of accidents
- Respondents think that label text simplification, presenting less information and using more pictograms and graphic symbols are the most effective way of improving communication.
- Over half of respondents (52.1%, N=198) would respond positively or moderately positively if some information was removed from the label and could only be obtained digitally (22.7% did not know/ could not answer – so among those that answered the percentage is higher -66.9%).
- Respondents (N=201) would prefer to access labels through smartphones (30%), laptops (21%), tablets (20%) or desktop computers (17%)
- The main benefits of presenting some label information via IT solutions (N=195) include: the possibility to provide more detailed information (14%), being able to provide all the relevant information where the package is too small (14%), ease of access of information (13%), access to updated information (13%) and information in additional languages (13%); more relevant/targeted information, environmental benefits (19%) cost savings (8%).
- The main challenges of presenting some label information via digital labels (N=200) include: difficulty to access information (24%), differences between on-pack and digital information (22%), inequalities for different population groups (22%), and increased costs for industry.
- The OPC also provided feedback on the possibility of removing specific items of information. This is highly detailed and readers are requested to refer to the OPC or the main report to access this information.
- When non-professional users were asked about fertilisers in general, the largest share of them said that 'Safety requirements' is at least very important to them, while 21.9% of the respondents also see 'Agronomic efficiency' as of average importance. Non-professional seem to be mostly in an agreement regarding 'Agronomic efficiency', as 73.9% of respondents would remove the information from the physical label to digital format at least partially. At the other end of preferences, we find that 36.3% of respondents would keep all the information on 'Safety requirements' on the physical label, closely followed by information relevant after purchase (35.9%).
- Some 26% of respondents (N=136) indicated that they provide the information on the on-pack label online; and 48 % that they provide additional information to that on the on-pack label online (74%).
- The main reasons for providing information online (multiple choice possible) (N=130) were given as: improved customer service (25%), problems with fitting information on the physical label (21%) and the possibility to update

information more easily (20%) were the first three most popular answers.

- Better management of frequently changing label information is the most beneficial aspect of digitalisation according to respondents, closely followed by the increased easiness to comply with new labelling requirements, and then better targeted communication and cost savings.
- With regards to potential challenges of labelling digitalisation (N=143), managing different data formats has been selected as extremely challenging in the largest percentage (17%). However, implementing IT solutions seems to be the most challenging aspect, if 'moderately' and 'extremely challenging' answers are grouped together (53%).
- Most respondents (N=93, 72%) would implement digital labelling if it was possible.
- Most respondents (N=132, 56%) thought any label information presented via IT solutions be organised through a decentralised database operated by individual manufacturers following standard templates or guidelines.

1.2. 1.3 A targeted stakeholder survey

The survey targeted users of fertilising products (professional, non-professional), the industry (manufacturers, blenders, importers, distribution intermediaries and suppliers, retailer, stockists) as well as conformity assessment bodies and market surveillance authorities.

The survey questionnaire contained questions targeted at each of the groups related to essential information on fertilising product labels and preferences about information removal from the physical label, the usage of labels, usage and accessibility of digital tools, preferred IT solutions, preferences about digital labelling (e.g. layout), industry labelling practices and about costs and implementation of digital labelling. The questionnaire was translated into the languages of selected countries. In this study all EU countries are included, but the survey was translated and focused on eight selected countries: France, Germany, Italy, Lithuania, Poland, Romania, Denmark, and Spain.

The stakeholder survey was open between the 23th of August and the 11th of October, 2021. Multiple dissemination channels were used to obtain as many responses as possible. CINT, an online insights exchange platform was utilised, which allows for the targeted recruitment of participants. Moreover, potential respondents were also targeted through an email campaign, with specific regard to industry representatives and state authorities.

755 responses were received, of which 752 indicated their country of residence. Most respondents are from Germany (141 or 18.8% of responses), followed by France (136 or 18.1%), Spain (107 or 14.2%), Romania (89 or 11.8%), Lithuania (70 or 9.3%), Poland (68 or 9%) and Italy (55 or 7.3%). 82 responses were received from other countries. The values are summarised in the table below.

Non-professional users constituted the largest response group (43.6% of responses), followed by professional users (33.5%). Representatives of industry (manufacturers, blenders, importers, distributors, suppliers, retailers and stockists) amounted to 18.7% of the responses, while conformity assessment bodies and market surveillance authorities made up 4.2% of the survey responses.

Most of the survey respondents (28%) were between 35-44 years old. The age group is followed by respondents between 45-54 years old (24.3%), respondents of 25-34 years (23.2%) and 55-64 years old (14.3%). 5.7% of the respondents were under 24 years old, most of whom were between 18-24. At the opposite end of the spectrum, 3.1% of the respondents were aged over 64 years.

Analysing age by respondent groups reveals that respondents from conformity assessment bodies and market surveillance authorities, non-professional and professional users were the youngest. 42.5% of the respondents work in agriculture (farming), 20% are employed in manufacturing, 13.7% in a gardening business, 7.7% are distributors, importers or retailers, and 6.3% are blenders. To a lesser extent, respondents came from other private companies (2.2%), market surveillance authorities (1.4%), conformity assessment bodies (1.2%) and other government or public institutions (1.2%). 3.8% of respondents indicated that they are from other types of organisations.

- **Key findings**
- When asked to rate the importance of four categories of information that appear on the labels: information on content (IC), relevance after purchase (AP), safety requirements (S) and agronomic efficiency (AE) in terms of level of importance, there was not a great deal of difference between the categories in the case of professional users and the case of non-professionals.
- When compared to professional users, the listed information categories are all in all more important to non-professional users. More respondents considered information about safety requirements as absolutely essential than any other categories (47.3%).
- Manufacturers indicated that information on content is the least important information category, while 46.2% of the manufacturers, a percentage larger than in case of other information categories, thought that agronomic efficiency is absolutely essential.
- Blenders think that agronomic efficiency is the most important category (38.7% said that it is absolutely essential, N=31), after safety requirements (31.3%), information on content (29%) and information relevant after purchase (9.7%).
- When asked to what extent information from each of the four categories might be removed from the physical label and transferred to a digital format (fully, partially, none), there was not a great deal of difference between the categories either. A larger percentage of the professional users think that information could be removed from the labels (fully or partially) than compared to the opinions of non-professional users.
- In case of non-professional users, safety requirements proved to be the least moveable, followed by information after purchase and information on content. About a third selected that none of the information should be removed from the physical label. Agronomic efficiency came across as most moveable.
- Manufacturers would prefer to remove information relevant after purchase, as would blenders. In contrast to manufacturers and professional users, conformity assessment bodies and market surveillance authorities are more against removing information. Overall, non-professional users are more wary of

digitalisation than professional users.

- The overwhelming majority of professional users read or use labels of fertilising products quite frequently, and more than non-professional users. Professional users mostly (72%, N=231) read labels before purchase, followed by after purchase but before use (32%), and then while using the product (25.5%). Professional users said that they read labels in the physical place of manufacture or sale. A sizeable group also read labels online (39.8%). (N=297) 86.9% of the non-professionals read the label before purchase - mostly at the place of purchase
- The overwhelming majority of non-professional users purchase fertilising products in retail shops (89.5%, N=323), while some also buy products online (28.2%), through dealerships and purchasing co-operatives (both 9.9%) as well as from catalogues (5.6%). Non-professional users (N=297) use labels to find out about the purpose for the product (76.4%), ingredients (62.3%), storage conditions (60.3%), product safety (53.5%), quality and efficiency (51.5%) and disposal of the package and leftovers (27.6%).
- The various stakeholders have sufficient digital skills to use the internet and digital technologies, but there are also some exceptions. Most professional users said that they regularly connect to the internet (95.6%, N=227). Similarly, almost all non-professional users said that they regularly connect to the internet (97.6%, N=296), just as CAS and MSA stakeholders do (100%, N=32). It is, however, important to note that the survey was conducted online, possibly increasing the number of those who connect to the internet regularly if compared with the general population.
- Most stakeholders use at least some digital devices and similar popularity of various devices was noted across different stakeholder groups. Smartphones (77%) are used most often by professional users to connect to the internet, followed by laptop (67.3%) and desktop (52.5%) computers and tablets (39.4%). The majority of professional users (N=288, 75.8%) also use digital technologies to access label information on the products they use. Non-professional users even more often than professionals selected smartphones (90.7%) as devices they use to connect to the internet, followed by laptop computers (77.9%), desktop computers (54%), and tablets (46.4%).
- When asked which format they prefer to access label information, most of the professional and non-professional users selected physical labels.
- Websites and 2D codes are the most popular digital technologies among various stakeholder groups. Professional users were asked to select from a list of digital technologies on which they would choose to access information about fertilising products. Websites at 42.9% and 2D codes (e.g. QR codes, Datamatrix codes) at 40.7% were most often selected. Non-professional users also most often selected websites and 2D codes. However, the difference between the two options was more evident for the non-professional group, where 64.6% selected websites and 37.7% selected 2D codes, 33.7% mobile applications (see figure below, on the right).
- When asked where the digitalised information should be presented, most of the

stakeholders preferred manufacturers' platforms. All user groups were agreed overall that that there should be a standardised template for all manufacturers

- With regards to labelling practices, manufacturers indicated that it is somewhat harder to manage the frequently changing information categories on fertilising labels than the amount of labelling information in itself. 39.4% of the manufacturers provide information about its products in a digital format, instead of or in addition to the physical label (N=69). Multi-language labels are used by 73% or 19 of the respondents (N=26).
- Manufacturers are divided on whether digitalisation in general would save them money. 48.4% think that it would provide financial savings (N=49). When asked about the costs involved, manufacturers indicated that websites and QR codes would be the least expensive solutions to implement (17 and 22% responded that it would be expensive). Thus, the cheapest options also coincide with the preferences of all kinds of stakeholders. Other industry stakeholders rank IT solutions similarly.

1.3. 1.4 The survey experiment

The survey experiment implemented a three-group, one-way design that explored the effects of labelling changes on key behaviours among professional and non-professional users of fertilising products.

The exercise sought to understand the behaviours users actually exhibit when shown digitalised labels, instead of asking participants what they think about digitalisation. Furthermore, it also aimed to test how understanding of the labels is affected by digitalisation. According to the design of the survey experiment, respondents were shown labels of fertilising products with varying degrees of information. Both professional and non-professional users received three different kinds of fertilising labels, one with all the information to be displayed on physical labels, a moderately simplified label and another, with radically simplified information. Labels were designed in consultation with DG GROW.

The survey was conducted on Alchemer and online panels via CINT were used to contact respondents. The survey experiment targeted four countries (France, Poland, Romania and Spain) and gathered 1200 responses (800 professional and 400 non-professional equally distributed among the four countries). The questionnaires were translated into four languages.

- **Key findings**
- The survey experiment shows that professional users are mostly unaffected by changes in the amount of information on the physical label when it comes to product application and storage. Non-professional users are more sensitive to label simplification than their professional counterparts.
- With regards to factors influencing understanding of labels, the ease of interpreting labels (self-reported) is significantly positively related to the age of professional and non-professional users, as well as to experience of using the shown fertilising product.
- Less information on labels did not lead to a significant change in how easily information was interpreted on the label in question by either of the two user groups (see tables below).

- Statistical testing indicates that age has a significant impact on answering product application and storage questions correctly in case of both professional and non-professional users.

1.4. 1.5 Focus groups

The objective of the focus groups was to collect more in-depth ideas on how fertilising product users think about labelling, information on labels, product use and digitalisation. It followed a semi-structured choreography with main question points to touch on. During the focus group, slides with fertilising product label information categories and subcategories were shown, to ensure a constant point of reference for participants. Similarly, the potential IT solutions were also displayed.

Eight focus groups were organised with professional and non-professional users, four with each stakeholder group, from France, Poland, Romania and Spain In most cases discussions were conducted in respondents' native languages and were carried out online. On average, discussion lasted 45 minutes. Recordings were typed up, translated into English and coded on a predetermined sheet.

Participants of professional focus groups were usually farmers, who work on small farms, growing vegetables both indoor and outdoor. A smaller group of participants worked as agronomic engineers at larger companies, working sizable lands or at companies developing hybrid plants. Professional users indicated that they use a wide variety of fertilising products, both in liquid, solid and powder form. Most often mentioned PFCs were mineral and organic fertilising products.

Non-professional users were typically growing vegetables, fruits and herbs in their own garden or were owners of indoor plants and flowers. Some users also apply fertilising products to evergreen plants and trees. Generally, they reported using organic fertilising products or liquid, inorganic fertilising products. Often, non-professionals reported using one fertilising product for all their plants.

- **Key findings**
- Most focus group participants were knowledgeable only about the most important pieces of information such as nutrient values, or easy to grasp information such as storage conditions or target plants. They did not have strong views or opinions about information categories or subcategories.
- Agro-economic efficiency-related information was considered more important than other types of informant by manufacturers and professional users – especially nutrient content. The view tended to be that after purchase information was not that important – everybody knew what to do. Non-professionals found AE information too technical (except in the case of avid hobbyists).
- Most users thought that safety requirements had to be retained on the physical label, although professional users thought this less than non-professionals. Some professional users asked if it was really necessary - most of it was common sense. Manufacturers thought it important to keep the information on the label – in case something happened to the user one could also go to the QR code to find out more details on what might be wrong and what to do.
- Non-professional users thought after purchase information was more important

than professional users did, although professional users are quite divided on the matter. Professionals tend to know how to use the products, or have advisors to help them. Non-professionals came across as thinking this is more important than it appears from the quantitative data collection exercise.

- Professionals were more interested in information on content than non-professionals, although less so than in agro-economic efficiency. They found the list of ingredients, production and expiry date to be useful. It is also important for organic farmers to be able to check it. Non-professionals find this less important.
- Non-professionals tend to use labels before purchase and before use, but might find the information on the label hard to interpret. Professionals also look at labels but from a different perspective – they have done research beforehand and might just want to confirm that the information is correct.
- Generally participants welcome the transition to digitalisation. It is seen as beneficial and a natural transition, although concerns were mentioned about the digitally derived.

1.5. 1.6 Usability testing

The unmoderated usability testing exercise tested the popularity and potential use of various digital technologies that could be implemented on the fertilising product labels. Participants were shown various labels with different IT solutions and asked about the IT solutions used to access the digital label (recognition of IT solutions, usage, preferences). The usability testing also gathered qualitative data on respondents' attitudes on the shortlisted IT solutions.

47 tests with professional and non-professional users of fertilising products were carried out (29 were professional and 18 non-professional) with the help of Loop11 usability testing platform and a TestingTime panel. Participants were mostly from Germany (25) and from other European countries. Moreover, participants were mostly from large cities or nearby suburbs.

Table 9.2: Participants by settlement type

Country	Respondents
Large city	28
Suburb near a large city	9
Small city or town	10
Rural area	1

- **Key findings:**
- Usability testing was conducted on QR Codes, Datamatrix Codes, 1D barcodes as well as URLs. Respondents were shown five images of fertilising product

labels, coupled with the five analysed IT solutions. Before that, participants were introduced to the different digital technologies shown on the labels and how to use them.

- Of the 48 tested individuals, 33 scanned a QR and 26 accessed a URL, making these the most used options. When asked to rank IT solutions, the first two options were also QR codes and URL links.
- Thus, the most easily usable and preferred technologies are QR codes and URL links, which also have the advantage of being complementary to each other, that is, when QR codes are not readable or the user cannot scan it, URL link provide a good second method.
- It was explained that accessing information is the easiest with QR codes, especially because most smartphones already have built-in tools for this purpose, thus, it does not require downloading any other software. Furthermore, respondents frequently mentioned that they are already familiar with the technology and they frequently use it. According to respondents' accounts, URLs have a complementary advantage of being able to search for them online in case someone cannot access QR codes. On the other hand, users also voiced that typing in URLs takes too much time and effort.
- Most users used smartphones to access digital information via the label (42.7%). Laptops and desktop PCs were also popular. Ideal preferences reflect devices used to read digital labels: smartphones (87.2%), laptops (53.2%) were the most preferred options.

1.6. 1.7 Ad-hoc expert group meeting on options for digitalisation of labels

An on-line meeting (workshop) of the Commission Expert Group on Fertilising Products took place on the 15th of March 2022. At the workshop, the following specific questions were addressed:

- Feedback on the proposed 'principles of digitalisation'
- Categorisation of labelling requirements (and reallocation of information between categories)
- Identification of frequently changing labelling information
- The distinction between non-professional and professional users
- Technical aspects of the policy options proposed
- Feedback on proposed options – and the preferred option

Very useful comments were made by range of stakeholders during the workshop regarding the topics discussed and several organisations provided additional valuable written feedback subsequently that was used to help frame the options and questions for the survey (2.8) and also provided guidance on how to assess the options.

1.7. 1.8 Survey: focus on costs and benefits related to various digitalisation options

Following the ad-hoc Expert Group meeting, an online survey to collect data on costs and benefits related to various options for digitalisation was conducted. The survey aimed to consider costs and benefits of various alternative options for digital labelling as compared to the labelling under the FPR as it currently stands.

The target audience of this survey included economic operators (manufacturers, authorised representatives, importers, distributors), users (professional and non-professional) and readers of labels of fertilising products (e.g. conformity assessment or market surveillance bodies), as well as other interested parties such as NGOs.

The survey was open from the 11th to the 22nd of April 2022 and had 93 valid responses distributed among stakeholder groups as set out in the chart below.

Figure 9.1: What type of organisation do you represent?

- **Key findings**
- The results in terms of obtaining data on costs incurred by stakeholders with digitalisation were disappointed and could not be used without strong caveats.
- Some 56.3% of respondents (manufacturers, N=32) indicated that they already provide some labelling information digitally. Overall there was strong support for the proposed 10 principles of good practice in digitalisation of labels (N=84).
- Feedback regarding the value of current FPR labelling (physical) did not suggest that there was a high contribution from the information on the labels to economic, social or environmental impacts. Some 56% found it readable or highly readable, 58% understandable or highly understandable; and 49% that it communicated information well or very well to target customers.
- When comparing the effects of labels under the different options on economic, environmental and social impacts, the general response was that the higher the level of digitalisation (higher options), the greater the positive impacts.
- There was no clear result in terms of ranking the options by PFC for all stakeholders combined, but manufacturers showed a stronger preference for higher levels of digitalisation – Option 6 was preferred. 95.7% of manufacturers indicated that that they were either likely or very likely to implement digital labelling if it was allowed.

ANNEX 3: WHO IS AFFECTED AND HOW?

1. PRACTICAL IMPLICATIONS OF THE INITIATIVE

How are stakeholders affected by the preferred policy option (PO2a + PO3):

Stakeholders	
Economic operators (manufacturers, importers, distributors)	The preferred policy package provides scope for economic operators to avoid costs related to labelling, while providing the choice for those who do not want to digitalise to provide all information on the physical label. By reducing the frequency of disposing of and redesigning physical labels, there could be some ongoing costs savings for enterprises as digital labels are easier and less costly to update than physical labels. This relates to relabelling due to the (in)stability of product information over time (e.g. for organic fertilisers, the content of the various forms of nutrients may vary from one batch to another, depending on the quality of the input materials used) changes to the product (e.g. different ingredients), changes in distribution of the product (i.e. additional countries) or due to regulatory changes. Enterprises could also incur fewer costs in purchasing and maintaining the machinery or equipment required to make physical labels. PO2a further incentivises economic operators to improve the free movement of fertilising products across the EU-27. By reducing the amount of information required on the physical label there should be more space for information in different languages, which will make it easier for them to remain and to grow in the internal market. Such improved free movement is envisaged to a greater extent under PO3, where all label information can be provided digitally for certain types of products. Setting a legal framework (also in terms of the 'principles for digital labelling') for digital labelling will help in setting a level playing field and create certainty for economic operators, while at the same time avoiding divergent non-harmonised digital labelling schemes (e.g. at Member State level or at the initiative of industry).
Users: **Professional**	For professional users, the principles guiding the design of PO2a was that the information that could be digitalised often reached professional users through different means (for example, not necessarily through the physical label, but rather via technical advisory services) and so it could be readily be moved from the physical label to the digital label. Under PO2a, safety related information is retained on the physical label. Therefore there should not be a negative impact on non-professional users in terms of impacts linked to health and safety. Industrial users of EU fertilising products (i.e. blenders) could further be impacted positively (particularly by PO3), as digital product information will be easier to collate and manage. It should be noted that all physical label information may be moved online under PO3, including safety information. Particularly relevant for professional

	users, are those products sold in bulk, without packages. However, if digitalisation of label information is implemented, it will require compliance with the 'principles for digital labelling', which set out to protect end-users and to ensure the accessibility, availability and quality of digital information. Further, setting up a legal framework for digital labelling (in terms of the 'digital labelling principles') would benefit all users, as the information online will be easy to navigate and searchable (i.e. useful for users looking for specific information).
Users: Non-professional	Under PO2a the information moved to a digital label is less relevant for non-professional users. This includes highly technical information, which is often not understood by non-professional users. Under PO2a, safety related information is retained on the physical label. Therefore, there should not be a negative impact on non-professional users. For those without access to digital information of EU fertilising products, the 'principles for digital labelling' would mean that alternative ways of providing information would be necessary. Impacts of PO3 will not have any effects on non-professional users. Further, setting up a legal framework for digital labelling (in terms of the 'digital labelling principles') would benefit all users, as the information online will be easy to navigate and searchable (i.e. useful for users looking for specific information).
Public authorities (Member State Authorities, Conformity Assessment bodies, and Market Surveillance Authorities)	In terms of direct impacts of **PO2a and PO3** on public authorities, despite positive aspects related to the ease of managing and compiling online data, public authorities could require some investment in equipment and training to facilitate access to digital labels, although it should be noted that 74.2% of Member State Authorities and Conformity Assessment Bodies replying to the stakeholder survey[152] indicated they currently already use digital tools to access label information of products. Also relevant for public authorities is that setting up a legal framework for digital labelling (in terms of the 'digital labelling principles') would be beneficial, as the information online will be easy to navigate and searchable (i.e. useful for those looking for specific information).

[152] Total number of responses = 31.

2. SUMMARY OF COSTS AND BENEFITS

I. Overview of Benefits (total for all provisions) – Preferred Option		
Description	***Amount***	***Comments***
Direct benefits		
Reduced administrative costs for businesses (producers, distributors, etc.)	***Maximum estimated annual costs savings under PO2a for SMEs is €517, and €4,583 for large enterprises.*** ***Maximum estimated annual costs savings under PO3 for SMEs is € and*** ***€ for large enterprises.***	***Given the voluntary nature of the preferred option, no costs would be imposed on businesses. Businesses would only provide digital labelling if they perceived the potential to enjoy reduced costs (or if they perceived sufficient other business benefits to justify any cost increase). The figures provided show the maximum potential benefits.*** ***The figures are based on the baseline costs (except cost of redesigning physical labels, which are based on best estimate based on stakeholder interviews) are mid-point estimates based on the range of cost estimates provided by enterprises responding to the stakeholder survey (total number for respondents 93).*** ***Cost savings would arise through reducing the frequency of disposing of and redesigning physical labels. There would also be economies of scale in that more languages could fit on physical labels.*** ***All types of firms (SMEs and large enterprises) would be able to benefit from digitalisation. However, large firms may derive more benefits in terms of economies of scale as they can more easily make the necessary one-off, upfront investments in digitalisation.***
Users enjoying greater ease of use and increased awareness of key information (e.g. ingredients, safety information).	***Non-monetary benefit***	***Previous research has found that digitalisation of labels can improve hazard communication for consumers (e.g. chemicals used in inorganic fertilisers, storage instructions if any dangers) and workers by solving the problem of consumers being faced with overloaded and unattractive labels and text being too small to read. Non-professional users can also be empowered through better access to more relevant and comprehensible information, enabling more informed decision-making on the purchase and use of fertiliser products.*** ***Professional users may also benefit as they would get access to a wider range of technical information digitally than it would be possible to fit onto a physical label under the FPR's labelling requirements.***
Indirect benefits		
Sectoral	***Not possible to***	***Digital labelling and simplification of physical labels could help enterprises by allowing more***

I. Overview of Benefits (total for all provisions) – Preferred Option		
Description	**Amount**	**Comments**
competitiveness	*quantify given the available data.*	*space for essential information to be given more prominence on the label and for multiple languages on physical labels. This would allow more cost-effective labelling within the Single Market given the increased costs of producing multiple labels for different export markets.* *May also facilitate product distribution across the EU and beyond by allowing multilingual labels to be moved digitally.*
Reduced risks to health and safety of users	*Not possible to quantify given the available data.*	*Evidence from the consultations highlights that increased awareness about product information on labels and more informed decision-making is likely to reduce risks to health and safety. The number of survey respondents anticipating such benefits increased in line with increased digital labelling: from 19.5% in relation to the policy option 2a to 38.3% in relation to policy option 3.*
Administrative cost savings related to the 'one in, one out' approach[153]		
Reduced annual administrative costs for businesses (producers, distributors, etc.)	*Mid-range net recurring benefits accruing to all EU27 enterprise is estimated at:* *-€308,550 under PO2a and; € 1,069,500 under PO3.* *(For both options one off costs are estimated at €300,844 and annual*	*The benefits would stem from the digitalisation of some information compared with the current physical-only labelling requirements.* *Given the voluntary nature of the preferred option, no costs would be imposed on businesses. Businesses would only provide digital labelling if they perceived the potential to enjoy reduced costs (or if they perceived sufficient other business benefits to justify any cost increase).* *The figures provided show the maximum potential benefits, assuming that all companies will implement the voluntary digital labels of a total of 3595 enterprises , assuming the following:* *It is assumed that 44% of Large Enterprises already provide some form of digital labelling, all of which export. It is assumed that they export to other Member states and comply with the FPR. Such enterprises would not incur additional costs (as they already digitalise) but would enjoy savings from any reductions in physical labelling requirements.* *The remaining 56% of Large Enterprises do not yet provide any digital labelling. However, it is*

[153] see Tool #59 cost estimates and the one-in, one-out approach.

I. Overview of Benefits (total for all provisions) – Preferred Option		
Description	***Amount***	***Comments***
	ongoing costs are estimated at €125,280).	*assumed that they export to other Member States and would therefore choose to adopt digital labelling in compliance with the FPR. Such enterprises would incur additional costs due to digitalisation but would also enjoy savings from any reductions in physical labelling requirements.* *Of the 44% of SMEs that provide digital labelling, it is assumed that 30% export within the EU (equal to 13% of all SMEs). These firms would not incur additional costs but would enjoy savings from any reductions in physical labelling requirements.* *Of the 44% of SMEs that provide digital labelling, it is assumed that 70% do not export within the EU (equal to 31% of all SMEs). These firms would not incur additional costs and would not enjoy savings, as they would continue to comply with any national rules on labelling.* *Of the 56% of SMEs that do not provide digital labelling, it is assumed that 30% export within the EU (equal to 17% of all SMEs). These firms are assumed to adopt digital labelling for the first time. They would therefore incur additional costs but would enjoy savings from any reductions in physical labelling requirements.* *Of the 56% of SMEs that do not provide digital labelling, it is assumed that 70% export within the EU (equal to 17% of all SMEs). These firms would not incur additional costs and would not enjoy savings, as they would continue to comply with any national rules on labelling.* *Cost savings would arise through reducing the frequency of disposing of and redesigning physical labels. There would also be economies of scale in that more languages could fit on physical labels.* *All types of firms (SMEs and large enterprises) would be able to benefit from digitalisation. However, large firms may derive more benefits in terms of economies of scale as they can more easily make the necessary one-off, upfront investments in digitalisation.* *Both SMEs and large firms would benefit. Arguably, medium and large firms proportionately would benefit more from digital labelling as they are more likely to distribute to 5-10 Member States or more so would have cost savings relating to transferring multilingual information to a*

I. Overview of Benefits (total for all provisions) – Preferred Option		
Description	***Amount***	***Comments***
		digital format.

II. Overview of costs – Preferred option							
		Citizens/Consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
Action (a)	Direct adjustment costs	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant
	Direct administrative costs	Not relevant	Not relevant	*0	*-€0	Not relevant	Not relevant
	Direct regulatory fees and charges	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant
	Direct enforcement costs	Not relevant	Not relevant	Not relevant	Not relevant	Possibly purchase of equipment-not quantifiable	Not relevant
	Indirect costs	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant
Costs related to the 'one in, one out' approach							
Total	Direct adjustment costs	Not relevant	Not relevant	Not relevant	Not relevant		
	Indirect adjustment costs	Not relevant	Not relevant	Not relevant	Not relevant		
	Administrative costs (for offsetting)	Not relevant	Note relevant	€5.74M	€3.58M[154]		

*NB: Given the limited evidence base for the costs, a full extrapolation of costs to EU level is problematic and risks providing a false picture. Nonetheless, a broad indication can be offered.
Further, given the voluntary nature of the preferred option, no costs would be imposed on businesses. Businesses would only incur direct adjustment costs related to digital labelling if they perceived the potential to enjoy reduced costs (or if they perceived sufficient other business benefits to justify any cost increase).

The estimates for direct administrative costs show the maximum potential costs for enterprises assuming that maximum number of exporting companies that might provide digital labelling for the first time is equal to 610. Based on the following assumptions[155]:

- That the fertilising products sector features 3595 enterprises.

[154] There are no administrative costs for offsetting as the costs will be offset by benefits. Although the one-off cost is €5.74M, the net recurring annual savings is €9.36M.
[155] For a full breakdown of assumptions, also on exporting enterprises please refer to section 5.3.1.4 of the Digital labelling study

- This mid-range figure provides an estimate of net benefits based on the assumption

  that all enterprises that export would gain from savings associated with reduced physical labelling requirements (because they already provide digital labelling or would newly introduce it).

In practice, the actual costs would most likely be less than these maximum costs, as a certain proportion of firms would choose not to provide digital labelling. Indeed, given its voluntary nature, enterprises would provide digital labelling if they anticipated that the costs of such provision would be exceeded by the benefits.

3. RELEVANT SUSTAINABLE DEVELOPMENT GOALS

III. Overview of relevant Sustainable Development Goals – Preferred Option(s)		
Relevant SDG	**Expected progress towards the Goal**	**Comments**
SDG #3 Good health and well-being	Digital labelling could improve the communication of fertilising product information (including use instructions), by providing the information in a clearer manner.	Specific Target 3.9 'By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination'
SDG #6 Clean water and sanitation	Digital labelling could improve the communication of fertilising product information (including use instructions), by providing the information in a clearer manner. Over use of fertilisers could result in eutrophication of water bodies.	Specific Target 6.3 'By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally'
SDG #9 Industry, innovation and infrastructure	Setting up a framework for digital labelling and improving the management of otherwise overloaded labels will allow the EU fertilising products industry to transition to increased digital practises and future proof the Fertilising products regulation.	Specific Target 9.4 'By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities'
SDG #12 Ensure sustainable consumption and production patterns	Information on EU fertilising products will be improved (through clearer communication) so users of fertilising products can not only protect themselves by accurate use of a product, but also make informed choices.	Specific Target 12.4 'By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment'

ANNEX 4: ANALYTICAL METHODS

This Annex provides a description of the approach to the prospective analysis whose results are described in the main body of the Impact Assessment Staff Working Document and the digital labelling study. The aim of the prospective analysis was to (1) assess the problems identified and its drivers, provide the reasons for the EU action, set general and specific objectives of the new initiative, develop policy options tackling these objectives, assess the developed policy options in terms of their economic, social, and environmental impacts and, finally, compare the policy options under effectiveness, efficiency, and coherence criteria.

1. OVERVIEW

The prospective analysis was carried out between January 2021 and May 2022. The work was structured around seven main tasks, each of them containing various activities. This part summarises the work under the key evidence-gathering and analysis activities.

Problem Tree Definition

The definition of the problem and its problem tree were identified and refined based on information collected at the Inception Phase of the study and discussions with the Commission. The final version of the problem tree containing the key drivers behind the problems identified and the consequences of these problems to the environment, consumers, and the industry is presented in Chapter 2.

Subsidiarity analysis

The problems identified as part of the problem tree definition were carefully assessed with respect to subsidiarity, more specifically, the necessity and added value of EU action.

Policy Objectives Identification

Following the definition of the problems, and the necessity and added value of EU action, the objectives of the policy action were defined, including the general objectives covered in this study, namely: the aim of Regulation 2019/1009 on fertilising products (the Fertilising Products Regulation – FPR) is to:

1. Create a level playing field for all fertilising products at EU level, thereby increasing the industry's opportunities to have access to the Internal Market while maintaining the national regulations in place for products limited to national markets, hence avoiding any market disruption.
2. Increase the level of protection of health and environmental protection by limiting the presence of contaminants in fertilising materials and additives throughout the EU.

The specific objectives of this study were defined as:

- SO1: to provide for cost savings for industry through voluntary digitalisation of labels.
- SO2: to communicate more efficiently the information relevant to a label reader or user by use of digital labels for fertilising products.
- SO3: to set up a future proof regulatory framework allowing the use of digital tools to communicate product information

Definition of the policy options

The definition of the policy options started with defining the baseline policy option based on a projection of the status quo. The definition of the baseline scenario involved understanding, qualifying, quantifying, and monetising (to the extent possible) the key elements of the current situation concerning the critical developments in the EU population that uses fertilising products (professional and non-professional), technological uptake of enterprises and the size of the fertilising products industry in the EU. Subsequently, the data collected combined with the results of the problem definition and the opinions provided by stakeholders in the course of targeted stakeholder consultations contributed to defining and refining the six policy options developed to tackle these objectives. Essentially the options envisaged increasing levels of digitalisation of labels, involving different mixes of categories of information as defined in the study.

Assessment of the policy options

In line with the Better Regulation Toolbox, the first step in the assessment of impacts was the identification of all relevant impacts under the different policy options. The identification of the impacts was based on data and information collected during the previous tasks (i.e. interviews, behavioural experiment, surveys, analysis of OPC responses, workshops and focus groups). The research collected qualitative information and quantitative data on social, economic and environmental impacts related to the identified policy options.

Socio-economic and environmental impacts identified were categorized according to the following categories in the BRG:

	Impacts
Economic (the conduct of business)	Sectoral competitiveness (#21)
	Research and Innovation (#22)
	SMEs (#23)
	Competition (#24)
	Internal market (#25)
	Trade and investment flows (#27)
	Technological development & digital economy (#28)
Social	Employment, working conditions, income distribution, social protection and inclusion (#30)
	Health (#32)
	Consumers and households (#33)
Environment	Environmental (#36) – includes: climate change; land use; quality of natural resources; efficient use of resources; animal welfare; reduced environmental risks; sustainable production and consumption; and waste production, generation and recycling

The impacts that were taken into account for this analysis were considered to be the most relevant and the ones for which desk research, consulted stakeholders, the surveys and workshops were able to provide insights. A dedicated survey targeting public authorities, users and user organisations, consumer organisations and industry representatives (associations and businesses) presented the individual policy options and asked participants to provide direct feedback. The opinions of stakeholders were triangulated with other data sources used in the study. The quantitative feedback was disappointing making it difficult to

model impacts in quantitative/ monetary terms. Quantitative data were not sufficient to provide meaningful modelling of differences between options.

Comparison of the policy options

After assessing the identified socio-economic and environmental impacts of each policy option, policy options were compared under a range of criteria and then assessed in terms of effectiveness and efficiency, and coherence criteria.

In terms of efficiency, the analysis consisted of comparing the costs involved in digitalising labels with the potential benefits of digitalising as identified in this study.

In terms of effectiveness, the extent to which the options would meet stakeholder needs and could actually be implemented and the risks involved in implementation were assessed.

With regards to coherence, options were considered in terms of the extent to which they promoted digitalisation in the context of ongoing digitalisation initiatives.

Following the comparison of the options, the preferred policy option was selected, namely – Policy Option 2 - Measure 2: Certain information may be provided digitally (without distinction between professional and non-professional users) plus Measure 6: all information is provided digitally for certain categories of products.

2. LIMITATIONS ENCOUNTERED AND MITIGATION MEASURES

Limited availability of updated, EU-level, comparable quantitative data

The 'fertilising products 'industry' as identified in the FPR does not exist statistically nor organisationally. No industry level data are collected that correspond to the scope of the FPR, nor are there indications as to which shares of production fall under EU or national regulations, how much is exported, employment, etc.

In addition, whilst during the targeted stakeholder consultation, businesses identified a range of specific benefits of transferring information from physical to digital labels, these potential benefits could not be estimated quantitatively due to the wide range of variables affecting labels (e.g. size of the label, type and size of packaging or bags or bottles, number of ingredients, number of changes in ingredients constituting thousands of recipes, ways in which products are bagged and labelled by different enterprises, number of languages on packaging and space required for the languages/ the labels, warehouse storage space required for packaging with labels, etc.). The consulted industry stakeholders mentioned that they do not have this information available and even if it was decided to set a work group up to collect it, the timeline to collect it at company level was too short.

Similarly, although consulted public authority stakeholders provided input concerning the cost-benefit ratio for national authorities for each policy option, during the course of the study, no concrete quantifiable data was found concerning, for example, additional FTEs needed from public authorities under each policy option to perform enforcement and monitoring activities. It is difficult to estimate the costs each policy option would include to

public authorities, especially considering the current lack of clarity on the digital infrastructure that would be used to store the information on digital labels[156].

The analysis of impacts on users focused mainly on assessing the impact on safety (i.e. safe use of products), label readability and relevance of information on the label to different stakeholders. Some attention was paid to issues surrounding digital skills and access to the internet. The study gathered valuable qualitative input from the targeted stakeholder consultation. However, the perception on these issues from stakeholders representing non-professional users (consumers) (i.e. consumer organisations) is not complete due to the lack of responses from such stakeholders to surveys and requests for interviews.

Likewise, the assessment of the environmental impacts also was essentially qualitative and focused on the impact of disposal of wasted label sand packaging on the environment. There was very little appreciation among stakeholders of the links between labelling information and wider environmental concerns and policies.

In conclusion, the limitations on quantitative data constrained the strength of the argument on the scale of some identified problems and implications of future policy options. In some cases, estimations were corroborated by existing evidence underpinning the key assumptions through alternative data (i.e. quantitative findings from the Evaluation of the Detergents Regulation regarding the operational costs related to the providing product information online). In addition, since the quantification of benefits was not feasible, a qualitative approach was chosen instead when assessing the benefits under each Policy Option.

Reservations regarding the level of knowledge regarding FPR labels among interviewees and survey respondents

In the course of the research we had occasion at several instances to doubt whether the interviewees or survey respondents (e.g. at consumer associations or environmental NGOs, or survey respondents more widely) who were providing us with inputs really knew what was involved in a FPR label as it was unlikely that they had ever seen or used them as the labels have not come into use yet. As a result we tended to give more weight to inputs from those who really were knowledgeable. These tended to come from industry (both individual enterprises and associations).

The result may have been less robust and knowledgeable input than is desired on the one hand and an unconscious bias in our views on the other.

3. BASELINE COSTS:

Having considered the labelling costs associated with digital labelling, it is worth briefly comparing and contrasting this with the current costs of printing physical labels.

Consultation feedback was that there are certain costs associated with physical labelling and that in comparison with the predecessor Regulation 2003/2003, as more detailed information requirements have been included in the FPR, there are likely to be increased costs. It is important to provide examples of feedback in this regard as this helps to provide context in terms of the costs of digitalisation.

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[156] Possible options would include EU centralised database of e-labels held by EU wide public authority/provider; EU centralised database of e-labels held by third-party provider; Independent providers of e-label services (EU or national); Manufacturers' websites with e-labels of own products.

For example, both the capital costs and human resource costs of producing physical labels were viewed as being quite high by several fertiliser producers interviewed. Moreover, the new labelling requirements were seen as potentially a lot more costly than the predecessor Regulation 2003/2003. However, this is based on producers' expectations before the new labelling requirements come into force (July 2022) given that the research was undertaken between early 2021 and April 2022. Specific examples of expected business-as-usual costs under the new FPR are now provided:

- **One-off costs** – purchase of a machine printing labels was estimated to cost circa EUR 20,000/ factory by a medium-sized company in Ireland. Such capital investment was seen as necessary due to the increased labelling requirements in the FPR. However, there can be the possibility for businesses to outsource the printing of labels to specialist printing firms that provide labelling services for other products. In those cases, such one-off costs would not be incurred.
- **Recurring costs** – examples are: printing the labels; with higher costs for fertilising product producers where there is a problem of label information having to change frequently, the plastic foil for labels with significant quantities of foil being needed which is both costly and environmentally damaging as requires large amounts of plastic.

As set out in the problem definition, individual producers and industry associations expressed concerns that they would not be able to put the more detailed information required by the FPR onto a single physical label, therefore they would incur the extra costs of putting a leaflet into every bag. Also, there might not be space for all the languages of target countries products are being sold to, so there would have to be separate bags produced for different markets. These numbers need to be estimated up front when ordering bags, often with long lead times. However, it is not always possible to predict accurately quantities to be sold in different markets. As a result, there may be too few for some, too many for others. The inclination would be to order too many, 'just in case', which could result in wasted bags and labels having to be disposed of. In addition, there may be requirements for separate storage facilities for different languages which complicate logistics. All these factors have cost implications for enterprises and may produce environmental damage when disposing of redundant bags and labels.

The cost of a physical label and leaflet combined for a 50 kg bag was seen as being potentially excessive if the labelling requirements are not digitalised, but no precise quantification could be provided. The study team has estimated the costs of putting a leaflet in each bag as being 0.25 – 0.35 EUR on average.

Consultation feedback on the costs of physical labelling was received from a major European fertilising industry association. The FPR states that the information shall appear on a label which is affixed to that package. The industry association noted that:

"Where the package is too small to contain all the information, the information that cannot be provided on the label shall be provided in a separate leaflet accompanying that package. This means that due to the size of big bags, it will be mandatory to label big bags without the option of an accompanying leaflet, while for smaller packages (25kg, 40kg, 50kg) an additional leaflet might be the only choice to provide all information. Without a proper digital solution, industry needs the option to provide excess information in a separate leaflet for both, big bags and small packages. In addition, the machinery used in packaging operations goes from bag filling, soldering to stacking on pallets and wrapping. Technical solutions to attach

leaflets on each bag do not exist, yet, and a manual job would neither be sustainable for safety reasons, nor for manning cost reasons".

This example is provided as it highlights the fact that there are certain costs associated with physical labelling that might be reduced or eliminated under some of the measures relating to digital labelling.

4. ASSUMPTIONS: COSTS AT THE LEVEL OF EU BUSINESSES:

Evidence from the consultations of economic operators highlighted that the provision of any information in digital format requires a certain level of expenditure (in equipment, staff time, etc.) both on a one-off basis and an ongoing annual basis (e.g. to maintain equipment, retrain staff). However, once that investment is made, the incremental cost of providing more information in digital format is negligible. For example, there is little cost difference in providing some/most/all information in digital format for any particular product. Similarly, the costs of providing digital labelling do not particularly vary according to the types of fertiliser products. **On that basis, the evidence suggests that the costs of providing information in digital format for any specific business would be more or less identical across all policy measures**.

Evidence from the consultations of businesses (producers, distributors, importers, etc.) and industry associations highlights that costs can vary in line with the number of product lines a particular producer manufactures, or distributor distributes. Such incremental costs relate, for example, to the staff time required to transfer information into digital format, create additional web pages, etc. The frequency of changes to product information is another variable that influences the costs of labelling, as some fertilisers use extensive ingredients and the labels may need to change very frequently, which some fertiliser producers interviewed noted is very costly.

The evidence collected is not sufficiently granular to identify costs per product line. However, the consultations highlighted that large enterprises tend to have a higher number of product lines compared to SMEs. There may be exceptions to this rule (e.g. SMEs with a high number of product lines or large enterprises with a low number of product lines). However, these appear to be sufficiently few to allow a general distinction to be made between the costs incurred by SMEs and the costs incurred by large enterprises.

On that basis, the table 'Enterprise-level one-off costs of digitalisation (policy measures 2-6)' in Annex 3, presents estimates for the costs of providing information in digital format at the level of an individual enterprise (with a distinction between large enterprises and SMEs). As just noted, the costs of digital labelling would be more or less identical across all policy measures. These costs also apply to the baseline scenario, since enterprises can already choose to provide information in digital format, if they wish on a voluntary basis but without this counting towards regulatory compliance of the FPR's labelling requirements. However, total costs across all enterprises will need to take account of those enterprises already providing digital labelling and may vary if take-up varies by policy measure. This is considered in the next sub-section below.

Table 4.1 Enterprise-level one-off costs of digitalisation (policy options 2 and 3)

Required action	Description	One-off cost estimates
Familiarisation costs		

Required action	Description	One-off cost estimates
Familiarisation with the information obligation	No requirement for familiarisation with information obligations regarding content, but some familiarisation will be required around the means/method of providing such information in digital format. Familiarisation would be required across all policy measures Policy Measures 2 to 6. Previous research has estimated that up to 4 person-hours are required per enterprise for familiarisation with information obligations.[157] Eurostat data states average hourly earnings for a technician or associate professional at €29.60 in 2021.[158]	Large enterprises: €118 SMEs: €118
Costs related to providing and updating product information online		
Training staff	Enterprises of different sizes provided flat-rate estimates of the staff training that would be required for them to digitalise labelling information for the first time. (Based on these anecdotal figures, mid-range estimates are provided here.)	Large enterprises: €1,000 SMEs: €1,000
Adjusting existing data or producing new data, filling forms and tables, holding meetings	None of the enterprises expected to incur any such costs (other than those already to be incurred under the FPR).	n/a
Purchase of equipment	Enterprises providing data reported that they already had the necessary equipment (i.e. computers, laptops) to operate a website and could therefore already put product information onto websites for digital labelling purposes. They do not need to purchase additional equipment.	n/a
Purchase or development of software and	Enterprises reported the need to incur costs on software and the development of web pages. These varied in line with	*Large Enterprises: €15,000 *SMEs: €4,250

[157] Impact assessment study on the making available and placing on the market of detergents.
[158] Eurostat: Structure of earnings survey and Labour Force Survey data for Non-Wage Labour Costs; last update: 05/01/2021

Required action	Description	One-off cost estimates
development of web pages	the size of enterprise and number of product lines. One large firm with nearly 300 product lines quoted a figure of €15,000. SMEs with more limited product lines quoted figures between €500–€7,000. However, large enterprises (and some SMEs) are likely to already have sufficient website capability even in the absence of digital labelling. (Eurostat data shows that 94% of large enterprises have a website, compared with 77% of SMEs.[159]) These should therefore be considered as business-as-usual costs, except for any businesses that lack the website capability.	(*only those lacking the required website capability)
Providing product information online (collating/uploading information, etc.)	Enterprises did not provide data. However, previous research has identified that it takes one hour for a technician to produce and upload an ingredient datasheet to a website.[160] This would therefore equate to 6 hours for an SME with 6 product lines or 300 hours for a large enterprise with 300 product lines. (Eurostat data states average hourly earnings for a technician or associate professional at €29.60 in 2021.[161] [162]	Large: €8,880 SMEs: €178 *Note – costs linked to the number of product lines rather than to the size of enterprise.*
Cost of changing physical labels to include QR codes on the product		
Purchase of equipment (reading and generating QR codes)	Enterprises reported that they would incur equipment costs in providing digital information via QR codes. One small enterprise with only 6 product lines quoted €500. One large enterprise	Large: €5,000 SMEs: €500 *Note – costs linked to the number of product*

[159] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Enterprises_having_a_website,_by_functionality_and_size_class,_EU,_2021_(%25_of_enterprises).png

[160] RPA (2018), Support to the Evaluation of Regulation (EC) No 648/2004 (Detergents Regulation)

[161] Eurostat: Structure of earnings survey and Labour Force Survey data for Non-Wage Labour Costs; last update: 05/01/2021

[162] The 2019 Evaluation of the Detergent Regulation estimated that the one-off costs of collating and uploading information online varied from €222-371 per company. However, the study did not specify the number of products.

Required action	Description	One-off cost estimates
	with more than 4,000 product lines quoted a figure of up to €100,000. However, this may be an outlier, and a figure of €5,000 is more realistic for a large enterprise with 50-300 product lines (i.e. about ten times the number of product lines that an SME might have). To check that the product information being provided about their products via QR code is correct, they would need the necessary equipment and software (including QR code scanners and generators). Some specialist QR code technologies may be purchased either as a one-off or on a subscription basis. However, a very basic QR code scanner and generator could even be downloaded as an app for free.	*lines rather than to the size of enterprise.*
Redesigning labels	Enterprises would have to redesign labels to incorporate QR codes (or other means to access digital information). Previous research has identified the cost of redesigning a physical label is between €120 and €200.[163] This would therefore equate to €1,080 for an SME with 6 product lines or €54,000 for a large enterprise with 300 product lines. However, these should be considered as a business-as-usual cost, as businesses report that labels typically require redesign every few years; given the voluntary nature of digital labelling, firms typically wait until labels require updating before incurring costs in redesigning them to incorporate QR codes.	n/a
Copying (producing labels)	No additional costs would be incurred, as printed labels with QR codes will merely replace existing labels that would have been printed anyway.	n/a

[163] RPA (2018), Support to the Evaluation of Regulation (EC) No 648/2004 (Detergents Regulation)

Table 4.2 Enterprise-level annual costs of digitalisation (policy options 2 and 3)

Required action	Description	Ongoing annual cost estimates
Familiarisation costs		
Familiarisation with the information obligation	Familiarisation would be a one-off cost not an ongoing cost.	n/a
Costs related to providing and updating product information online		
(Re-)training staff	Enterprises of different sizes reported that ongoing staff training would be required, e.g. in response to staff turnover or updates to the software or equipment used for digital labelling. These were estimated at €1,000 per annum regardless of enterprise size.	Large enterprises: €1,000 SMEs: €1,000
Equipment depreciation	Enterprises providing data reported that they already had the necessary equipment to operate a website and would therefore not need to purchase additional equipment to enable digital labelling via a website.	n/a
Maintenance of software and web pages	Enterprises offered estimates that varied from €200-€5,000 for SMEs and were €5,000 for a large enterprise. However, Eurostat data that 94% of large enterprises and 77% of SMEs (in all non-financial sectors) already operate a website. For these enterprises, the maintenance and of software and web pages would therefore constitute a business-as-usual cost.	*LEs: €5,000 *SMEs: €2,600 (*that would not otherwise maintain the required website capability)
Cost of changing physical labels to include QR codes on the product		
Purchase of equipment (reading QR codes)	Enterprises did not specify depreciation costs separately from the purchase of equipment. However, enterprises in general typically work on the basis of a lifetime of 3 years for equipment of this type. Estimated annual costs are therefore one third of one-off costs. Such costs can be written off against tax.	Large: €1,700 SMEs: €170
Redesigning labels	Redesigning labels to incorporate QR codes would be a one-off cost. As and when new labels require to be designed (e.g. due to changing ingredients or regulatory requirements), these will	n/a

Required action	Description	Ongoing annual cost estimates
	include QR codes as a matter of course.	
Copying (producing labels)	No additional ongoing costs would be incurred. As and when new labels require to be printed (e.g. due to changing ingredients), these will include QR codes as a matter of course.	n/a

Based on the figures in the tables on enterprise-level costs, it is possible to estimate a figure for total costs for SMEs and large enterprises. These are presented as ranges. At the lower end of the range are enterprises that already have sufficient website capability to host digital labelling information. At the upper end are enterprises that lack such capability.

It is likely that the majority of SMEs and large enterprises will be at the lower end of the cost estimates:

First, most enterprises already operate a website providing a description of goods or services. Eurostat data shows a figure of 94% of large enterprises (in all non-financial sectors) having a website compared with 77% of SMEs.[164] Large enterprises (and even some SMEs) are also likely to have a website with high functionality. It may therefore be unnecessary for most large enterprises to incur significant additional costs beyond the business-as-usual scenario in relation to the purchase or development of software and development of web pages.

Second, the percentage of enterprises with a website is likely to increase year-on-year even under the baseline scenario. For example, there has been a steady increase since 2012 when the comparable figures were 93% of large enterprises and 69% of SMEs with a website. In this context, it is perhaps likely that many enterprises will introduce digital labelling as part of a broader strategy to digitalise their operations or at least provide a website. To the extent that this occurs, the costs of developing a website and maintaining webpages will represent business-as-usual costs.

Estimates for total one-off costs and ongoing annual costs are provided in the table below.

Table 4.3 Total enterprise-level costs of optional digitalisation (policy option 2 and 3)

Size of enterprise	One-off	Ongoing (annual)
Large enterprises)	€14,998 – €29,998	€2,700 - €7,700
SMEs	€1,796 - €6,046	€1,170 - €3,770

Regarding SMEs with sufficient website capability already, it can be noted that there are examples of fertiliser producers that already make product information available about their fertilising products in the form of a website or catalogue and for such firms, there would be very high business as usual costs.

[164] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Enterprises_having_a_website,_by_functionality_and_size_class,_EU,_2021_(%25_of_enterprises).png

PO2e: There is a practical difficulty for PO2e in that the survey asked the economic operators to estimate future cost savings by measure but not by policy options (the policy options were not defined when the survey was launched). It's therefore impossible to know what % of cost savings they would anticipate once the measures are combined into policy options.

However, an intelligent estimate for PO2e can be calculated if we make one assumption based on the qualitative evidence (e.g. interviews): there was a consensus that the distinction between professional and non-professional users could be problematic; different approaches for different types of users would therefore tend to limit cost savings, as firms might have to assume that any product might end up being used by non-professionals. On that basis, we assume that combining measures 3a+5b (or 3b+5a) generates no additional cost savings compared to 3a+3b.

5. ASSUMPTIONS: ENTERPRISE COSTS AT EU LEVEL

Given the limited evidence base for the costs, a full extrapolation of costs to EU level is problematic and risks providing a false picture. Nonetheless, a broad indication can be offered, to the extent that the total costs in the tables above represent a "normal efficient entity" involved in the manufacture, import or distribution of relevant fertilising products.

The fertilising products sector features 3595 enterprises. Given that 99.8% of enterprises are SMEs, this means that approximately 14 are large enterprises, whilst 3581 are SMEs.

The survey and the public consultation (OPC) provided different data on the percentage of firms that do not as yet provide any information about their products in a digital format:

- According to the stakeholder survey, 56% of enterprises do not as yet provide any information about their products in a digital format (44% are digitalised in some form already). If the entirety of these enterprises chose to provide information in digital format, this would amount to 1,392 enterprises.
- According to the OPC, only 26% of enterprises do not as yet provide any information about their products in a digital format (74% are digitalised in some form already). If the entirety of these enterprises chose to provide information in digital format, this would amount to 935 enterprises.

The OPC and stakeholder survey results differed quite significantly in terms of the proportion of firms that said they already produced information in a digital format. A reason for the big difference may be that in the stakeholder survey, which was more technical compared with the OPC, that stakeholders were specifically responding about digital labelling whereas in the OPC they interpreted the question as being about digitalisation more broadly. For this reason, the figure from the stakeholder survey will be used in the calculation of costs and benefits (56% of enterprises not yet providing digital labelling).

The percentage of enterprises that operate in compliance with the FPR is not known, given that they can choose instead to comply with relevant national legislation and rules. Thus, identifying the percentage that would move from physical labelling in line with the FPR to digital labelling in line with the FPR cannot be determined. To address this, a best estimate is made taking the percentage of SMEs that export to other EU Member States as a proxy for

compliance with the FPR rather than with national rules.[165] According to a Flash Eurobarometer survey, 30% of SMEs (in all sectors) had exported to another EU Member State in the previous three years.[166] It is also assumed that all large enterprises comply with the FPR, since they are very likely to export to multiple EU Member States.

Based on this, large enterprises and SMEs are divided into different categories, as shown in the table below.

- It is assumed that 44% of LEs already provide some form of digital labelling, all of which export. It is assumed that they export to other Member states and comply with the FPR. Such enterprises would not incur additional costs (as they already digitalise) but would enjoy savings from any reductions in physical labelling requirements.
- The remaining 56% of LEs do not yet provide any digital labelling. However, it is assumed that they export to other Member States and would therefore choose to adopt digital labelling in compliance with the FPR. Such enterprises would incur additional costs due to digitalisation but would also enjoy savings from any reductions in physical labelling requirements.
- Of the 44% of SMEs that provide digital labelling, it is assumed that 30% export within the EU (= 13% of all SMEs). These firms would not incur additional costs but would enjoy savings from any reductions in physical labelling requirements.
- Of the 44% of SMEs that provide digital labelling, it is assumed that 70% do not export within the EU (= 31% of all SMEs). These firms would not incur additional costs and would not enjoy savings, as they would continue to comply with any national rules on labelling.
- Of the 56% of SMEs that do not provide digital labelling, it is assumed that 30% export within the EU (= 17% of all SMEs). These firms are assumed to adopt digital labelling for the first time. They would therefore incur additional costs but would enjoy savings from any reductions in physical labelling requirements.
- Of the 56% of SMEs that do not provide digital labelling, it is assumed that 70% export within the EU (= 17% of all SMEs). These firms would not incur additional costs and would not enjoy savings, as they would continue to comply with any national rules on labelling.

Table 4.5 Categorisation of firms for the analysis of costs data

[165] It is possible that some exporting enterprises will comply with national rules rather than the FPR where this is possible via mutual recognition between Member States. However, the research covered no data on the proportion of firms that take this approach.
[166] Flash Eurobarometer 421: Internationalisation of Small and Medium-Sized Enterprises

Size	Already provides some digital labelling	Exports (in compliance with FPR)	% of enterprises of size group	Number	Would incur costs for newly-digitalising	Would enjoy savings from reduced physical labelling	Notes
Large	Yes	Yes	44%	6	No	Yes	44% of LEs provide digital labelling, all of which are assumed to export.
Large	N	Yes	56%	8	Yes	Yes	56% of LEs do not provide digital labelling, all of which are assumed to export.
SME	Yes	Yes	13%	473	No	Yes	44% of SMEs provide digital labelling, of which 30% also export.
SME	Yes	N	31%	1,103	No	No	44% of SMEs provide digital labelling, of which 70% do not export.
SME	N	Yes	17%	602	Yes	Yes	56% of SMEs do not provide digital labelling, of which 30% export.
SME	N	N	39%	1,404	No	No	56% of SMEs do not provide digital labelling, of which 70% do not export..
TOTAL				**3,595**			Total number of enterprises in the sector (see above).

The table below presents a summary of costs that might be incurred at EU level, i.e. all exporting firms not yet providing digital labelling would choose to introduce it (56% of large enterprises and 17% of SMEs, in line with the previous table).

In practice, the actual costs would most likely be less than these costs, as a certain proportion of exporting firms would choose not to provide digital labelling. Indeed, given its voluntary nature, enterprises would only provide digital labelling if they anticipated that the costs of such provision would be exceeded by the benefits.

As noted earlier, these cost estimates would apply across all policy measures, since evidence from the consultations highlighted that there is little cost difference in providing some/most/all information in digital format for any particular product. Similarly, the costs of providing digital labelling do not particularly vary according to the types of products.

Table 4.6 EU-level costs for enterprises (all policy measures): based on survey data

Size	Exporting firms that might provide digital labelling for the first time	One-off costs per enterprise	One-off costs all enterprises	Ongoing (annual) costs per enterprise	Ongoing (annual) costs all enterprises
Large (56% of LEs)	8	€ 14,998	€ 119,984	€ 2,700	€ 21,600
SMEs (17% of SMEs)	602	€ 1,796	€ 1,081,192	€ 1,170	€ 704,340
Totals	**610**		**€ 1,201,176**		**€ 725,940**

Given that the available data is not sufficient to determine the percentage of firms that would introduce digital labelling for the first time, the two tables below provide the results of a sensitivity analysis:

- Lower range costs: the first table assumes that only half of exporting firms that do not yet offer digital labelling would choose to introduce it for the first time.
- Upper range costs: the second table assumes that all firms that do not yet offer digital labelling (exporters and non-exporters) would choose to introduce it for the first time.

Table 4.7 Lowest EU-level costs for enterprises (all policy measures)

Size	Exporting firms that might provide digital labelling for the first time	One-off costs per enterprise	One-off costs all enterprises	Ongoing (annual) costs per enterprise	Ongoing (annual) costs all enterprises
Large (28% of LEs)	4	€ 14,998	€ 59,992	€ 2,700	€ 10,800
SMEs (8.4% of SMEs)	301	€ 1,796	€ 540,596	€ 1,170	€ 352,170
Totals	**305**		**€ 600,588**		**€ 362,970**

Table 4.8 Highest EU-level costs for enterprises (all policy measures)

Size	Exporting firms that might provide digital labelling for the first time	One-off costs per enterprise	One-off costs all enterprises	Ongoing (annual) costs per enterprise	Ongoing (annual) costs all enterprises
Large (56% of LEs)	8	€ 14,998	€ 119,984	€ 2,700	€ 21,600
SMEs (56% of SMEs)	2,005	€ 1,796	€ 3,600,980	€ 1,170	€ 2,345,850
Totals	2,013		€ 3,720,964		€ 2,367,450

Bringing together the data from the preceding tables, as shown in the table below, the estimates of costs to enterprises across the EU are:

- One-off costs of €1.2m (ranging from €0.6m to €3.7m);
- Ongoing annual costs of €0.7m (ranging from €0.4m to €2.4m).

Table 4.9 EU-level costs for enterprises (all policy measures)

	One-off			Ongoing (annual)		
Size	Low	Mid	Upper	Low	Mid	Upper
Large	€ 59,992	€ 119,984	€ 119,984	€ 10,800	€ 21,600	€ 21,600
SME	€ 540,596	€ 1,081,192	€ 3,600,980	€ 352,170	€ 704,340	€ 2,345,850
Totals	€ 600,588	€ 1,201,176	€ 3,720,964	€ 362,970	€ 725,940	€ 2,367,450

6. ASSUMPTIONS: BENEFITS FOR ENTERPRISES (PRODUCERS, SUPPLIERS, ETC.)

Evidence gathered during the study suggests a number of benefits for enterprises.

Reduced costs: evidence from the consultations suggests that businesses will be more likely to provide digital labelling to the extent that they can remove information from physical labels, since this will reduce costs. Under the baseline scenario, there are no cost savings to be made from digital labelling, since full physical labelling is still required. In contrast, the policy measures offer the potential for cost savings. When asked whether digitalisation in general would save them money (N=64), 48.4% responded that they think that it would provide financial savings, while 51.6% had the opposite view. However, the responses vary by fertilising product as illustrated in the chart below.

Figure 4.1: (Manufacturers) Would your organisation save money if some of the information in the physical label were to move to a digital format? Breakdown of responses (yes/ no) by FPC (N=64)

Furthermore, the responses to this question reflect the numbers of respondents, not the size of the responding enterprises. When one considers that, for example, in the case of inorganic fertilisers, 39% of respondents that said that they expect savings were large enterprises, given that the industry is dominated by a handful of large enterprises, and that the inorganic sector makes up some 80% of the total EU fertilisers product market, one is potentially talking about a large share of the industry. Similarly, in the case of inhibitors, of the 60% who said that they expected savings, all were large enterprises, while those who did not were all small enterprises (see chart below).

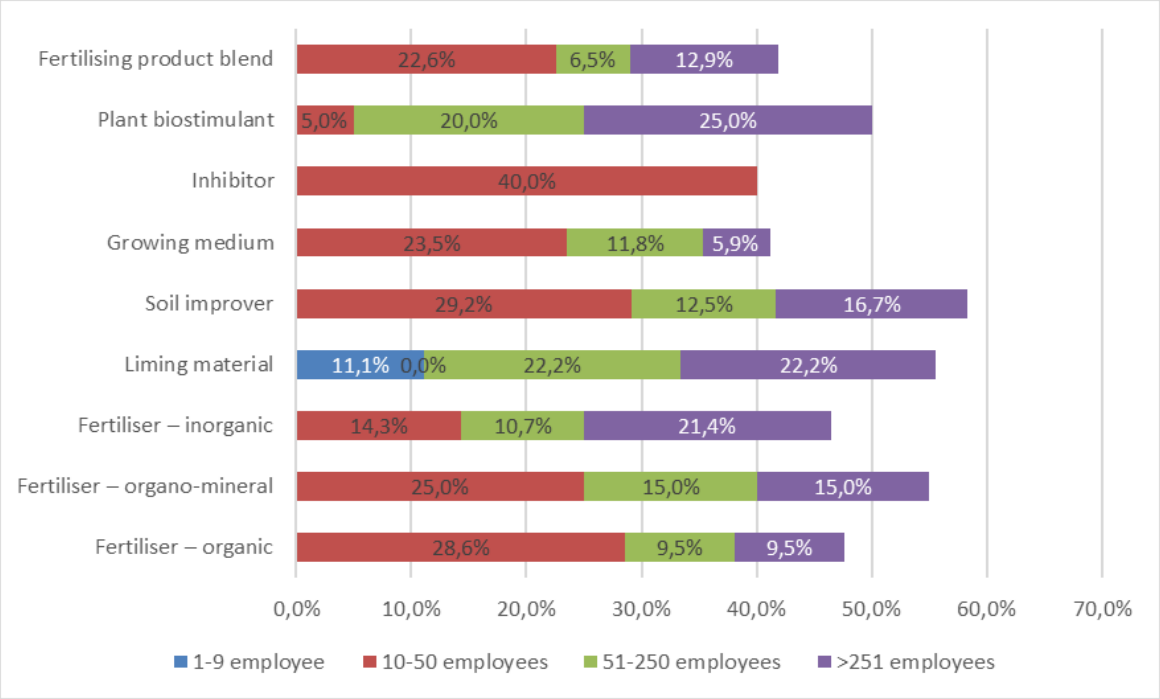
SMEs and cost savings: The data underlying these responses suggest that economic cost savings from digitalisation might be more likely to be realised by the larger enterprises that constitute the bulk of the industry. This does not mean that SMEs would not digitalise in the normal course of affairs ('business as usual') because they might still consider it useful to do so due to competitive pressures (following the market leaders) or responding to wider social trends where customers increasingly expect digital information on products. And as indicated in stakeholder survey and the OPC, a good share (44% and 74% of respondents respectively) already provide product information digitally.

The two following charts suggest that while some fertilising products are more predisposed than others to associating digitalisation to cost advantages, SMEs are more likely to think that there will not be any savings if information were moved from the physical to the digital format. It is also worth pointing out that generally SMEs tend to be more cautious regarding digitalisation initiatives.[167]

Figure 4.2: (Manufacturers) Would your organisation save money if some of the information in the physical label were to move to a digital format? Breakdown of the of *respondents who said they would save money* - by PFC (N=64) and size of enterprise

[167] See Smit, S.J. SME focus – Long- term strategy for the European industrial future, European Parliament, ITRE , section 4.2.3; and, De Lemos, B. (2019) ; The Dark Side of Digital Transformation: 8 Emerging Digital Risks, RSA

Figure 4.3: (Manufacturers) Would your organisation save money if some of the information in the physical label were to move to a digital format? Breakdown of the of respondents who said *they would not save money* - by FPC and size of enterprise (N=64)



Cost savings and digitalisation: Moreover, the survey evidence show that the cost savings are of increasing magnitude in line with increased digitalisation:

- Limited savings arise when information has to be physical and digital in parallel (i.e. Policy Measure 1 as this is a non-regulatory measure and a firm could not use the digital label as a replacement for the physical information labelling requirements in the FPR);
- Cost savings arise where some information remains physical and other information is digital (i.e. Policy Measures 2, 3, 4 and 5);
- The greatest cost savings arise when all information is digital (i.e. Policy Measure 6).

Cost savings can be expected in various ways.

First, by reducing the frequency of disposing of and redesigning physical labels, as digital labels are easier and less costly to update than physical labels. This relates to relabelling due to changes to the product (e.g. different ingredients), changes in distribution of the product (i.e. additional countries) or due to regulatory changes. Evidence from the consultations suggests that the need for redesigns will reduce as the extent of digitalisation increases (i.e. moving through the Policy Measures from 2 to 6). The data available is not sufficient to specify the level of cost savings that would be achieved by allowing digital labelling to replace some/most/all information on physical labels. However, an indicative benchmark for the cost of updating a product label is available from a previous study, which found that it costs between €120 and €200 to redesign the physical label for a single

detergent product, whereas it take only one hour to revise and upload an online information sheet.[168]

Second, enterprises will incur fewer costs in purchasing and maintaining the machinery or equipment required to make physical labels. Evidence from the stakeholder survey suggests that these will reduce as the extent of digitalisation increases.

Third, enterprises will incur fewer costs in printing physical labels and fixing them to products. Again, the evidence from the stakeholder survey suggests that these will reduce as the extent of digitalisation increases.

The table below provides a summary of estimated annual benefits that might accrue to individual enterprises under each of the options. The benefits are calculated as follows:

- Baseline costs (except cost of redesigning physical labels) are mid-point estimates based on the range of cost estimates provided by enterprises responding to the survey on costs and benefits related to various digitalisation options.
- Costs of machinery/equipment to make physical labels varied widely in line with the size of the enterprise, number of product lines, country, etc. For that reason, an intelligent mid-point estimate is taken. For SMEs, this is €5,000 and for large enterprises it is €25,000.
- Cost of redesigning physical labels is based on the mid-point (€160) of the cost range identified for the redesign of a physical label for a single detergent product (as identified by the previous study, see above).This unit cost is multiplied by estimates for the number of product lines per company (based on the stakeholder survey): 6 for SMEs and 300 for large enterprises. Based on information provided by the stakeholder interviews, it is assumed that each label requires to be redesigned on average every two years. This timescale represents a cautious estimate in order to avoid overstating savings, but in practice, many enterprises are likely to redesign labels more often. Thus the costs are as follows:
  - SMEs annual cost = €160 x 6 x 0.5 = €480
  - Large enterprises annual cost = €160 x 300 x 0.5 = €24,000
- Costs of Fixing labels to packaging also varied widely in line with the size of the enterprise, number of product lines, country, etc. Again, an intelligent mid-point estimate is taken. For SMEs, this is €2,000 and for large enterprises it is €25,000.

It should be noted that enterprises are unlikely to enjoy significant one-off cost savings as a result of digital labelling. Enterprises currently incur all necessary costs associated with physical labelling (including, from July 2022, all costs arising from the new FPR). There may be some limited scope to recover "sunk" costs, for example, by selling equipment that is no longer needed. Aside from this, savings will be realised only on an ongoing annual basis.

[168] RPA (2018), Support to the Evaluation of Regulation (EC) No 648/2004 (Detergents Regulation)

6.1 Enterprise benefits at EU level (policy options)

Based on the data above, it is possible to estimate the savings to enterprises at EU level for the different policy options described in section 6. The previous sub-section has presented the estimated benefits for each measure under the assumption that each measure would be implemented in isolation. However, the policy options in Section 6 combine different measures. Given that there is some overlap between the measures, it is not possible simply to aggregate the costs and benefits for the measures within each policy option. Instead, some assumptions have to be made about the proportion of firms that would benefit from each measure within any particular policy option.

The following assumptions are made:

- PO2 to PO6 combine M6 with different measures. Again, it is assumed that 14% of enterprises that reduce physical labelling would benefit from the higher savings associated with M6 (i.e. those enterprises that only provide products in bulk or products which are sold to industrial users (e.g. blenders), whilst the remaining 86% benefit from the lower savings associated with other measures.
- Within PO6, it is assumed that 14% of enterprises that reduce physical labelling would benefit from M6, whilst the remaining 86% only gain the savings associated with M3b. This is on the basis that most firms would struggle to differentiate between professional and non-professional users and would therefore gain only the lower benefits associated with M3 rather than M5.

On this basis, the enterprises covered by each policy option are as follows.

Table 4.10 Enterprises covered by each policy option (mid-range estimate of benefits)

Policy option	Includes	Enterprises included in policy option	Enterprises covered by each policy measure
PO1	M1	All exporting enterprises	• M1: 100% of exporting enterprises
PO2	M2 + M6	All exporting enterprises	• M2: 86% of exporting enterprises • M6: 14% of exporting enterprises
PO3	M3 + M6	All exporting enterprises	• M3: 86% of exporting enterprises • M6: 14% of exporting enterprises
PO4	M4 + M6	All exporting enterprises	• M2: 86% of exporting enterprises • M6: 14% exporting enterprises
PO5	M5 + M6	All exporting enterprises	• M2: 86% of exporting enterprises • M6: 14% of exporting enterprises
PO6	M3b + M5a + M6	All exporting enterprises	• M3b: 86% of exporting enterprises • M6: 14% of exporting enterprises

Table 4.11 Enterprises covered by each policy option (lower range estimate of benefits

Policy option	Includes	Enterprises included in policy option	Percentage of enterprises covered by each policy measure
PO1	M1	• Exporting enterprises already providing	• M1: 100% of all enterprises

		digital labelling • 50% of exporting enterprises not yet providing digital labelling	
PO2	M2 + M6	• Exporting enterprises already providing digital labelling • 50% of exporting enterprises not yet providing digital labelling	• M2: 86% of all enterprises • M6: 14% of all enterprises
PO3	M3 + M6	• Exporting enterprises already providing digital labelling • 50% of exporting enterprises not yet providing digital labelling	• M3: 86% of all enterprises • M6: 14% of all enterprises
PO4	M4 + M6	• Exporting enterprises already providing digital labelling • 50% of exporting enterprises not yet providing digital labelling	• M2: 86% of all enterprises • M6: 14% all enterprises
PO5	M5 + M6	• Exporting enterprises already providing digital labelling • 50% of exporting enterprises not yet providing digital labelling	• M2: 86% of all enterprises • M6: 14% of all enterprises
PO6	M3b + M5a+ M6	• Exporting enterprises already providing digital labelling • 50% of exporting enterprises not yet providing digital labelling	• M3b: 86% of all enterprises • M6: 14% of all enterprises

Table 4.12 Enterprises covered by each policy option (upper range estimate of benefits

Policy option	Includes	Enterprises included in policy option	Percentage of enterprises covered by each policy measure
PO1	M1	All enterprises	• M1: 100% of all enterprises

PO2	M2 + M6	All enterprises	• M2: 86% of all enterprises • M6: 14% of all enterprises
PO3	M3 + M6	All enterprises	• M3: 86% of all enterprises • M6: 14% of all enterprises
PO4	M4 + M6	All enterprises	• M2: 86% of all enterprises • M6: 14% all enterprises
PO5	M5 + M6	All enterprises	• M2: 86% of all enterprises • M6: 14% of all enterprises
PO6	M3b + M5a+ M6	All enterprises	• M3b: 86% of all enterprises • M6: 14% of all enterprises

The tables provide the estimated savings under each policy option:

- Mid-range: the first table provides an estimate of benefits based on the assumption that all enterprises that export would make savings associated with reduced physical labelling requirements (because they already provide digital labelling or would newly introduce it).
- Lower range: the second table provides estimated benefits for a scenario in which only half of exporting enterprises that do not yet provide digital labelling choose to do so (and therefore make savings associated with reduced physical labelling requirements, alongside those that already provide digital labelling).
- Upper range: the third table provides estimated benefits for a scenario in which all enterprises provide digital labelling and therefore make savings associated with reduced physical labelling requirements.

Table 4.13 Benefits (savings) accruing to enterprises (EU27) under each policy option

	Base line	PO1	PO2a	POb	PO2c	PO2d	PO2e	PO3
		M1	M2	M3	M4	M56	M3b+M5a+ M6	M6
Total annual savings all SMEs (€)	0	0	244,383	394,167	4,321,500	4,966,500	394,167	951,000
Total annual savings all large enterprises (€)	0	0	64,167	93,333	504,000	556,500	93,333	116,500
Total annual savings all enterprises (€)	0	0	308,550	487,500	4,825,500	5,523,000	487,500	1,067,500

Table 4.14 Lower range benefits (savings) accruing to enterprises (EU27) under each policy option

	Baseline	PO1	PO2a	POb	PO2c	PO2d	PO2e	PO2a
		M1	M2	M3	M4	M5	M3b+M5a+M6	M2
Total annual savings all SMEs (€)	0	0	244,383	394,167	3,111,480	3,575,880	394,167	684,720
Total annual savings all large enterprises (€)	0	0	45,833	66,667	360,000	397,500	66,667	58,250
Total annual savings all enterprises (€)	0	0	290,217	460,833	3,471,480	3,973,380	460,833	742,970

Table 4.15 Upper range benefits (savings) accruing to enterprises (EU27) under each policy option

	Base line	PO1	PO2a	POb	PO2c	PO2d	PO2e	PO2a
		M1	M2	M3	M4	M5	M3b+M5a +M6	M2
Total annual savings all SMEs (€)	0	0	813,750	1,312,500	14,395,620	16,544,220	1,312,500	3,176,340
Total annual savings all large enterprises (€)	0	0	64,167	93,333	504,000	556,500	93,333	116,500
Total annual savings all enterprises (€)	0	0	877,917	1,405,833	14,899,620	17,100,720	1,405,833	3,292,840

7. ASSUMPTIONS: COMPARISON OF COSTS AND BENEFITS AT EU LEVEL

Bringing together the cost and benefit data presented above, it is possible to offer an estimate of net benefits to enterprises at EU level. Three scenarios are presented in the tables below.

- Mid-range: the first table provides an estimate of net benefits based on the assumption that all enterprises that export would gain from savings associated with reduced physical labelling requirements (because they already provide digital labelling or would newly introduce it).
- Lower range: the second table provides an estimate of net benefits for a scenario in which only half of exporting enterprises that do not yet provide digital labelling choose to do so. Savings associated with reduced physical labelling requirements would accrue to those enterprises, as well as exporting enterprises that already provide digital labelling in compliance with the FPR.
- Upper range: the third table provides estimated benefits for a scenario in which all enterprises provide digital labelling and therefore gain from savings associated with reduced physical labelling requirements.

Under all scenarios:

- Net one-off benefits are negative for all policy options, since there are no one-off savings to be made (only the one-off costs of digitalisation).
- Net recurring benefits are positive for all policy options, since recurring savings from

reduced physical labelling exceed recurring costs of digitalisation.

- Net recurring benefits for enterprises are lower under PO2 than under PO3 to PO6. However, this does not take into account the costs and benefits for users (which are discussed in the next sub-section).
- Net benefits in the first year (i.e. one-off plus recurring) would be positive for all policy options under all scenarios, except for PO2 within the mid-range and upper range estimates. However, they would be positive by the end of the second year.

Table 9.3 Mid-range net benefits accruing to all enterprises (EU27)

	Base line	PO1	PO2a	POb	PO2c	PO2d	PO2e	PO2a
All enterprises (EU27)		**M1**	**M2**	**M3**	**M4**	**M5**	**M3b+ M5a+ M6**	**M2**
One-off costs and benefits (€)								
One-off benefits	0	0	0	0	0	0	0	0
One-off costs	0	0	119,984	119,984	1,201,176	1,201,176	119,984	165,862
Net one-off benefits	**0**	**0**	**-119,984**	**-119,984**	**-1,201,176**	**-1,201,176**	**-119,984**	**-165,862**
Recurring annual costs and benefits (€)								
Recurring annual benefits (savings)	0	0	308,550	487,500	4,825,500	5,523,000	487,500	1,067,500
Recurring annual costs	0	0	21,600	21,600	725,940	725,940	21,600	100,980
Net recurring benefits	**0**	**0**	**286,950**	**465,900**	**4,099,560**	**4,797,060**	**465,900**	**966,520**

Table 9.4 Lower range net benefits accruing to all enterprises (EU27)

	Baseline	PO 1	PO 2a	PO b	PO2 c	PO2 d	PO2e	PO 2a
All enterprises (EU27)		M 1	M2	M3	M4	M5	M3b+M5a +M6	M2
One-off costs and benefits (€)	0	0	0	0	0	0	0	0
One-off benefits	0	0	59,992	59,992	600,588	600,588	59,992	75,432
One-off costs	**0**	**0**	**-59,992**	**-59,992**	**-600,588**	**-600,588**	**-59,992**	**-75,432**
Net one-off benefits								
Recurring annual costs and benefits (€)								
Recurring annual benefits (savings)	0	0	290,217	460,833	3,471,480	3,973,380	460,833	742,970
Recurring annual costs	0	0	10,800	10,800	362,970	362,970	10,800	49,140
Net recurring benefits	**0**	**0**	**279,417**	**450,033**	**3,108,510**	**3,610,410**	**450,033**	**693,830**

ANNEX 5: THE FPR AND ITS LABELLING PROVISIONS

1. INTRODUCTION OF THE FERTILISING PRODUCT REGULATION:

Why was there a need new rules on fertilising products?

The reuse of raw materials that are disposed as waste was one of the key principles of the Circular Economy Package adopted in December 2015. At that time more and more manufacturers in the EU were developing innovative fertilising products including nutrients or organic matter recycled from bio-waste. However, diverging national rules and standards made it difficult for producers of organic fertilisers to sell and use them across the EU single market. The 2003 Fertilisers Regulation ensured free movement for traditional fertilisers typically made of mined or synthetic raw materials but it did not include a clearing procedure for organic fertilisers. As a result, around half of all fertilisers produced were marketed in the country where they were produced. That was the case for virtually all fertilisers produced from organic materials, such as derived products from animal by-products or other agricultural residual products, or recycled bio-waste. Traditional fertilisers had a competitive advantage, which hampered innovation and investment in the circular economy. Considering that processes for producing traditional fertilisers are often both energy consuming and CO2-intensive, easier market access for organic fertilisers could additionally bring environmental benefits.

What are the main elements of the FPR?

The FPR will be fully applicable as of 16 July 2022. It contains several elements that help create a level playing field for all fertilising products, while at the same time ensure high safety and environmental protection standards. The FPR:

- provides rules for free movement of all EU fertilising products (CE-marked) across the EU; It allows all EU fertilising products, from chemically synthesised substances or from recycled bio-waste and recovered nutrients, to benefit of CE-marking that ensures free movement in the single market.
- maintains optional harmonisation – a manufacturer who does not wish to CE-mark the product and have unrestricted access to the entire EU single market can opt for compliance with national rules instead and rely on mutual recognition for selling in other EU countries.
- introduces new harmonised requirements for all EU fertilising products regarding
- quality – such as minimum nutrient content, organic matter content, neutralizing values that are specific to each category of fertilising products;
- safety – such as maximum limits for heavy metals, including cadmium, for organic contaminants, for microbial contaminants and for impurities specific to each category of fertilising products or component materials;
- labelling – such as the actual nutrients content and their forms which will allow the farmers to modulate the use of the fertilisers depending on the plant needs and the characteristics of their soil;

- modernises the declaration of conformity and conformity assessment procedures; manufacturers of fertilising products have to comply with if they want to trade their products in the EU single market;
- delineates the borderlines between fertilising products and Plant Protection Products, to avoid overlap between plant bio-stimulants and plant growth regulators;
- enables derived animal-by-products to move freely on the single market as fertilising products after the end point in the manufacturing chain would be laid down in the Animal by-products Regulation ;
- includes harmonised recovery rules for waste transformed into composts, digestates, struvite, biochar, ashes or high purity materials. If these materials are incorporated in EU fertilising products, they are no longer considered to be waste within the meaning of the Wastes Framework Directive . This allows waste-derived products to circulate freely in the EU.

What fertilising products are covered by the FPR?

The FPR applies to the entire catalogue of fertilising products: organic, organo-mineral and inorganic fertilisers, liming materials, soil improvers, growing media, inhibitors, plant biostimulants and fertilising product blends. The FPR does not apply to raw waste products, to unprocessed animal by-products (such as raw manure) nor to plant protection products.

Will producers be forced to CE-mark their products? Can the producers continue to sell fertilisers according to national rules?

As some fertilising products are not produced or traded in large quantities across the EU, the FPR allows for optional harmonisation. A dual approach prevents market disruption and at the same time creates new opportunities for producers EU fertilising products – both organic and inorganic. In practice, manufacturers will have two options.

1. They can comply with the new harmonised safety, quality and labelling requirements, then affix the CE mark to their EU fertilising product and benefit from free access to the EU internal market.

2. Equally, they could decide to trade their product on the national market according to the national rules. In case they want to sell their products in other EU countries but do not want to CE mark their products, they may be able to do so, however depending on mutual recognition between the Member States.

How will the FRP rules improve the protection of health and the environment?

The Fertilisers Regulation 2003 does not address possible contamination of soil, inland waters, sea waters, and ultimately food, by EC marked fertilisers. Some fertilisers may contain substances that are considered dangerous to human health and environment. In particular, phosphate fertilisers can contain heavy metals, such as cadmium. To avoid contamination of the food chain and limit environmental damage, the FPR sets out harmonised limits for heavy metals (cadmium, chromium, mercury, nickel, lead, arsenic) in EU fertilising products. Given that fertilising products derived from treated bio-waste and

biomass are in general less contaminated with heavy metals, but may contain other types of pollutants, the FPR sets out limits for several organic pollutants, such as polycyclic aromatic hydrocarbons (PAHs).

How will resource efficiency be improved?

The production of inorganic nitrogen fertilisers is very energy intensive. About 2% of the world's energy is used to produce synthetic nitrogen fertilisers. The EU is also highly dependent on imports of phosphates. Around 90% of the phosphate rock used to produce fertilisers is imported, making the EU vulnerable to high prices of raw materials. Considering the expected global population growth and the related increase of food demand, we can expect that the demand for nitrogen and phosphate fertilisers – and consequently for resources – will increase in coming years. Disrupted nutrient recycling is also a problem worldwide. Phosphorus and nitrogen cycles are subject to losses in the environment, and phosphorus is a limited resource. The leaching of nutrients into the environment has led to deterioration of surface water through eutrophication. Other valuable nutrients are wasted and end up in landfills instead of being recycled for plant nutrition.

The FPR lays down rules for alternative resources such as recycled nutrients. In a more circular economy, the value of raw materials and energy used in products could be maintained in recycled products and contribute to a more resource efficient Europe. The FPR also encompasses products to enhance plant nutrition efficiency. As a result, there is lower and more efficient use of fertilisers.

ANNEX 6 – GUIDANCE DOCUMENT ON THE LABELLING OF EU FERTILISING PRODUCTS

EUROPEAN
COMMISSION

Brussels, 18.2.2021
C(2021) 726 final

COMMUNICATION FROM THE COMMISSION

concerning the visual appearance of the label on EU fertilising products referred to in Annex III to Regulation (EU) 2019/1009 of the European Parliament and of the Council

COMMUNICATION FROM THE COMMISSION

concerning the visual appearance of the label on EU fertilising products referred to in Annex III to Regulation (EU) 2019/1009 of the European Parliament and of the Council

• INTRODUCTION

Pursuant to Article 4(3) of Regulation (EU) No 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003[169] (the 'Fertilising Products Regulation' or the 'FPR'), the Commission shall publish a guidance document for manufacturers and market surveillance authorities with clear information and examples concerning the visual appearance of labels referred to in Annex III to that Regulation.

A task force of representatives of EU Member States and industry stakeholders, representing all the Product Function Categories (PFCs) falling under the scope of the FPR, was created by the Commission in July 2019 in order to support its services (DG GROW/D2) in fulfilling this task. The mandate of this task force was to write a first draft of this document.

This document was shared and discussed with members and observers of the Commission Expert Group on Fertilising Products in 2019 and 2020.

This document is not legally binding and seeks only to provide useful guidance to stakeholders including manufacturers and market surveillance authorities. Only the Court of Justice of the European Union is competent to authoritatively interpret Union law.

This guidance document provides explanations on the practical implementation of the labelling requirements set in Annex III to the FPR. It includes examples of labels for the different PFCs of EU fertilising products. These examples are purely indicative. The position of each part, as well as the colours used in this guidance document are not mandatory. It is up to the manufacturer to decide where to place and how to format the information on the label, while respecting the requirements in the FPR.

Unless otherwise provided in this guidance document or no colours are used at all, the following colour codes are used in the label examples:

- In blue: general requirements;
- In orange: specific requirements for each PFC;
- In black: other information that has to be provided on the label;
- In green: indicated nutrients.

[169] OJ L 170, 25.6.2019, p. 1–114.

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1. OVERALL RULES ON LABELLING IN THE CORE TEXT OF THE FPR

- **What does mandatory labelling information cover?**

<table>
<tr><th colspan="2">Labelling requirements</th></tr>
<tr><td>Articles 6 and 8: name, registered trade name or registered trademark and the postal address of manufacturer/ importer, as well as a type number, batch number or other element allowing the identification of the EU fertilising product</td><td rowspan="2">Annex III
General and specific labelling requirements</td></tr>
<tr><td>Article 11: "repackaged by"/"packaged by" + name, registered trade name or registered trademark and the postal address

Articles 17 and 18: CE marking and identification number of the notified body (if applicable)</td></tr>
</table>

- These are mandatory requirements.
- For manufacturers, the words '*produced by*' can be applied on a voluntary basis before the requirement of Article 6(6).
- For packers, it is possible to add the "*id code*" provided by the national authority in addition to the requirements of Article 11. The number of the notified body has to be put on the labels only for EU fertilising products having had their conformity assessed through Module A1 and Module D1 as provided in Annex IV to the FPR.

- **Is it possible to provide voluntary information on the label? Where could this voluntary information appear?**

Yes, it is possible to provide voluntary information other than that defined in the Regulation (for example, the FPR lays down rules to label "poor in chloride" as a voluntary information). In accordance with point 8 in Part I of Annex III to the FPR, voluntary information shall, among other things, not mislead the end user and shall relate to verifiable factors.

- **Is it possible to put information on the packaging, outside the label (i.e. batch n°, CE mark, notified body's number, quantity)?**

The label should not be interpreted as a strict physical unit. What needs to be covered by a label is all the mandatory information that has to be affixed on or to accompany the EU fertilising product.

- In case of a product with packaging, the labelling information can appear on the package itself and/or a document affixed to the package.
- For a bulk product, the labelling information is included in an accompanying document or a leaflet.

Therefore, if the practice of the economic operators is to affix the batch number, the quantity, the CE mark or any other mandatory information on the package, it fulfils the requirements of the FPR.

- **Is there a minimal/maximal size for the label/the font? Is there a proportional size to respect?**

The regulation does not establish any rules related to the size for the label/the font. It is up to the manufacturer to decide which size of the label to use, and ensure that information is clear, understandable, legible and intelligible.

- **In what language(s) should a label be written?**

Each Member State decides what language has to be applied for its national market.

Some Member States accept a written and signed agreement from a customer dealing with products for professional use which would accept to receive a product labelled in another language than the official one(s) for that Member State (for example, in English). The economic operator is advised to verify with the Member State in which a product is placed on the market whether such an agreement is acceptable. The national authorities competent for fertilising products are listed at:

https://ec.europa.eu/docsroom/documents/35205

2. GENERAL LABELLING REQUIREMENTS IN ANNEX III OF THE FPR

- **How to write the designation of the claimed function?**

The designation of the claimed function has to be written with the objective of supplying end users and market surveillance authorities with a sufficient level of information, without misleading them. A manufacturer can reduce the length of the designation of a product to the minimum necessary of the respective sub-category as long as the above is fulfilled. If this approach is applied, the PFC index corresponding to the respective sub-category as listed in Part I of Annex I to the FPR must be indicated.

Therefore, taking into consideration the above, the following examples could be used:

First option: it is possible to use the full name designation related to the product function as written in Part I of Annex I for PFCs 1 to 6.

For example:

- Compound inorganic micronutrient fertiliser
- Compound solid inorganic macronutrient ammonium nitrate fertiliser of high nitrogen content
- Liquid organo-mineral fertiliser

Second option: it is possible to use the PFC index (with the letters in upper or lower case as applicable) + a shortened designation.

The following table shows some examples:

Full name designation	PFC index + shortened designation	Condition
Compound Inorganic micronutrient fertiliser	PFC 1(C)(II)(b) – Mineral micronutrient fertiliser	Shortened designation is only applicable if the conditions in point 4 in PFC 1 in Part II of Annex III are fulfilled
Compound solid inorganic macronutrient ammonium nitrate fertiliser of high nitrogen content	PFC 1(C)(I)(a)(ii)(A) – Mineral fertiliser with ammonium nitrate of high nitrogen content	Shortened designation is only applicable if the conditions in point 4 in PFC 1 in Part II of Annex III are fulfilled
Liquid organo-mineral fertiliser	PFC 1(B)(II) – Organo-mineral fertiliser	N.a.

Any function of a fertilising product can be claimed only when a successful conformity assessment has proven such function, including for products for which more than one function is claimed (see point 2 in Part I of Annex III). More details are given under sub-section 2.8.

- **How to express the quantity of the EU fertilising product?**

Except for growing medium, the regulation does not lay down specific rules on the expression of the quantity. Thus, the quantity can be expressed in mass (t, kg or g) or volume (m^3, L or mL). It is recommended to only use units from the 'International System of Units'.

It is recommended to express the quantity by net mass for a solid fertilising product, and by net mass and/or volume for a liquid fertilising product.

For growing medium, special requirements are set in PFC 4 in Part II of Annex III. On voluntary basis the quantity can be indicated by additional measurements to those required.

- **How to provide information on the general application rates?**

As fertilisation recommendations may be crop, site, soil or climate specific, it may be justified for manufacturers and other economic operators to use a relatively general recommendation for the application rate, including maximum levels of application.

A manufacturer can choose to adapt the information regarding the application rate depending on the end user. A distinction could be made between the following categories:

- Consumer use (i.e. private households, week-end gardeners),
- Professional use (i.e. public domain, farmers),

- Industrial use (i.e. use of substances as such or in preparation at industrial site, Business-to-Business).

Following the above-mentioned distinction, it is recommended for economic operators wanting to follow this approach to adapt the information regarding application rates as follows:

- Consumer use market: detailed information concerning the application rates per crop should be shown.
- Professional use market: the label should show general application rates and a reference sentence such as '*Contact Company X or company's X distributor for more specific recommendations*'.
- Industrial market: the label should state a reference sentence (for example): '*This product is not intended for direct application/use without further processing*.'

In addition, it is suggested to add a sentence inviting farmers to follow good fertilisation practices:

'*These product application rates are recommendations. We recommend to the farmers to seek counsel from their adviser to adjust the recommendations to their particular situation and to avoid over-fertilisation*.'

Or

'*Farmers are encouraged to avoid nutrient losses and to take official recommendations into account while drawing fertilisation plans*.'

Note: it is possible to provide voluntary information in addition to the mandatory requirements. For example, it is possible for an economic operator to sell a product to an industrial customer with the label prepared for a professional customer.

- **How to provide information on storage conditions?**

It is under the responsibility of the manufacturers to define the storage conditions according to their knowledge of the product and based on good practices. The key objective should be to store the product without losing the quality and guaranteed content of the product under safe conditions. Pictograms reflecting good practices can be used as long as they are clear and not misleading.

Information about storage conditions may cover among others the following aspects:

- Storage period
- Storage environment (open/roof/closed; covered; dry etc.)
- Storage temperature/moisture
- Stacking
- Incompatibility with other materials
- "*Please also refer to information provided in Material Safety Data Sheet (MSDS)*" (if it is provided).

- **What does the functionality period of products containing a polymer belonging to CMC 9 mean?**

The functionality period of a polymer belonging to 'Component Material Category (CMC) 9: Polymers other than nutrient polymers' may be decided by the manufacturer. It defines both how rapidly the polymer must degrade and how frequent applications the use instructions may provide for. If the claimed functionality period is short, the use instructions may provide for frequent application, but then the actual biodegradation should also be fast. By contrast, if the claimed functionality period is longer, the biodegradation may be slower, but then the application frequency in the use instructions must also be longer, since point 1(f) of Part I of Annex III stipulates that the period between two applications must be at least as long as the claimed functionality period i.e. re-application during the functionality period is not allowed.

A general sentence can be added on the label. If considered useful, a pictogram identifying the maximum duration of the functionality period can be added, as suggested below. The pictogram should be completed by a text such as the below recommendations. In the second example, where the functionality period is expressed as a range, it is important that the user instructions preventing re-application refers to the longest possible period covered by the range.



"Re-application during the functionality period is not allowed. Contact company or company's distributor for more specific recommendations.

www.website.com ."



"Re-application after less than 8 weeks is not allowed. Contact company or company's distributor for more specific recommendations.

www.website.com ."

In addition, if the product contains a polymer with the purpose of binding material, a sentence informing the user that the product cannot be in contact with the soil is required.

- **How to provide the information on risk management?**

In case of products classified under Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC

and 1999/45/EC, and amending Regulation (EC) No 1907/2006[170] (the "CLP Regulation"), additional labelling requirements must be respected. For more information, refer to subsection 2.10.

In other cases, it is the responsibility of the manufacturer to supply pertinent information enabling to manage risks. Pictograms (except CLP hazard pictograms if the product is not classified) can be used as long as they are clear and not misleading.

A generic sentence such as '*To avoid risks to human health and the environment, please comply with the recommended use instructions of this fertilising product*' can be used.

According to points 4, 5 and 6 in Part I of Annex III to FPR, in the following specific cases, add the sentences mentioned below:

- Where the EU fertilising product contains derived products in the meaning of the animal by-products regulation, except manure,
  '*Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days*'.
- Where the EU fertilising product contains ricin,
  '*Hazardous to animals in case of ingestion*'.
- Where the EU fertilising product contains unprocessed or processed cocoa shells,
  '*Toxic to dogs and cats*'.

- **What does 'ingredients' mean and how to label them?**

Ingredients should be considered as any kind of material(s) (such as raw materials, substances, mixtures, bulky volume-building components, etc.) intentionally used for/added to the fertilising product during manufacturing, or substances intentionally obtained by chemical reaction within the production process of the product. In some cases, ingredients may contain impurities, which should be excluded from the list of ingredients.

For materials obtained by chemical reaction, only the reaction product must be declared (for example, ammonium nitrate, urea) and not the precursors.

In accordance with the FPR, all ingredients above 5 % by product weight shall be provided in descending order by the percentage of the dry weight.

Further to the obligation of declaring all ingredients above 5 % by product weight, economic operators may decide to label ingredients that are below 5 % by product weight. When doing so, and in order to avoid confusing mandatory and voluntary labelling, these ingredients should be listed as additional information and not in the section of "ingredients", where only ingredients above 5 % by product weight are expected to be referenced.

According to the FPR, there is no labelling obligation to declare the actual percentage of each ingredient in the final formulation of the fertilising product.

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[170] OJ L 353, 31.12.2008, p. 1–1355.

For substances and mixtures covered by the CLP Regulation, the identification has to comply with all the requirements of this Regulation. Hence, for a mixture, its trade name and the identity of the substances contributing to the classification according to Article 18(3) of the CLP Regulation have to be given in the list of ingredients.

For natural materials, it is possible to use mineral names (for example, Sylvinite, Langbeinite) in addition to the names used in accordance with Article 18 of the CLP Regulation, and the corresponding identification number of the material (CAS number or EC number) if available.

To avoid very long lists on the label itself, it is recommended to describe the CMCs of the ingredients by using a footnote or a shortened CMC reference.

→ Example for an organo-mineral fertiliser:

- CMC by footnote

Cocoa shell[1], Feather meal[2], Superphosphate concd.[3] CAS n° 65996-95-4, Potassium chloride[3] CAS n°7447-40-7, Magnesium oxide[3] CAS n°1309-48-4, Castor cake[1], Bone meal[2], Urea[3] CAS n° 57-13-6

With: [1] Plants, plant parts or plant extracts; [2] Derived products within the meaning of Regulation (EC) No 1069/2009; [3] Virgin material substances and mixtures.

- Shorten CMC reference

Cocoa shell (CMC 2: Plants, plant parts or plant extracts), Feather meal (CMC 10: Derived products within the meaning of Regulation (EC) No 1069/2009), Superphosphate concd. CAS n° 65996-95-4 (CMC1: Virgin material substances and mixtures), Potassium chloride CAS n°7447-40-7 (CMC 1), Magnesium oxide CAS n°1309-48-4 (CMC 1), Castor cake (CMC 2), Bone meal (CMC 10), Urea CAS n° 57-13-6 (CMC 1)

In the specific case of fertilising products containing composts and/or digestate, it is recommended to complete the list of ingredients with the raw materials used.

→ Example:

- Compost CMC 3 (Green-Compost)
- Digestate CMC 5 (Dried digestate from manure, energy crops and bio-waste) or Digestate CMC 5 (Solid fraction digestate from energy crops and bio-waste from plant origin)

- **How to label the function of products with two or more functions?**

The label must bear the designations as indicated in Annex I to the FPR corresponding to the product's claimed functions. Only the designations of PFC for which there is a successful conformity assessment shall be claimed. In that case, the manufacturer is free to choose the order of appearance of the different (2 or more) designations on the label. These functions can be separated by a dash or a word such as "*and*" or "*with*".

→ Examples:

- Straight solid inorganic macronutrient fertiliser – Liming material
- Straight solid inorganic macronutrient fertiliser with Liming material
- Straight solid inorganic macronutrient fertiliser and Liming material

If the product is a PFC 7, and a combination of a PFC 6(A) and PFC 6(B), the general recommendations described above apply.

The mentioning of PFCs index numbers is not mandatory, see for more details sub-section 2.1.

- **Is it possible to use different wording for the requirements in points 4, 5, 6 and 9 in Part I of Annex III?**

Rewording the requirements in points 4, 5 and 6 in Part I of Annex III is not allowed by the FPR.

For point 9 in Part I of Annex III, a similar wording to '*low in chloride*' may be used. .

- **Is it possible to use pictograms based on good practices? How to manage the interaction with the CLP Regulation?**

It is possible, on a voluntary basis, to inform the user **on storage conditions or management of effects on health and environment** with pictograms based on good practices, even if the product is not under the scope of the CLP Regulation.

If the CLP Regulation applies, the label of the product must bear all the labelling requirements set by it (hazard pictograms, signal words, hazard and precautionary statements, Unique Formula Identifier when applicable, additional requirements for consumer use and so on), including storage conditions and managements of risks. Additional information (ex.: pictograms on good practices) could be labelled in accordance with Article 25 of the CLP Regulation. They must not replace, deflect or contradict the mandatory labelling elements requested by the CLP Regulation.

In case of use of pictograms, it is important to avoid double labelling in accordance with Article 25 of the CLP Regulation.

→ Example:



- **In which cases can the manufacturer express the nutrient content in elemental form?**

The manufacturer can express the nutrient content requested by the FPR in elemental form instead or in addition to the oxidised form in accordance with the conversion factors defined in point 10 in Part I of Annex III. For more information, see section 3 of this guidance document.

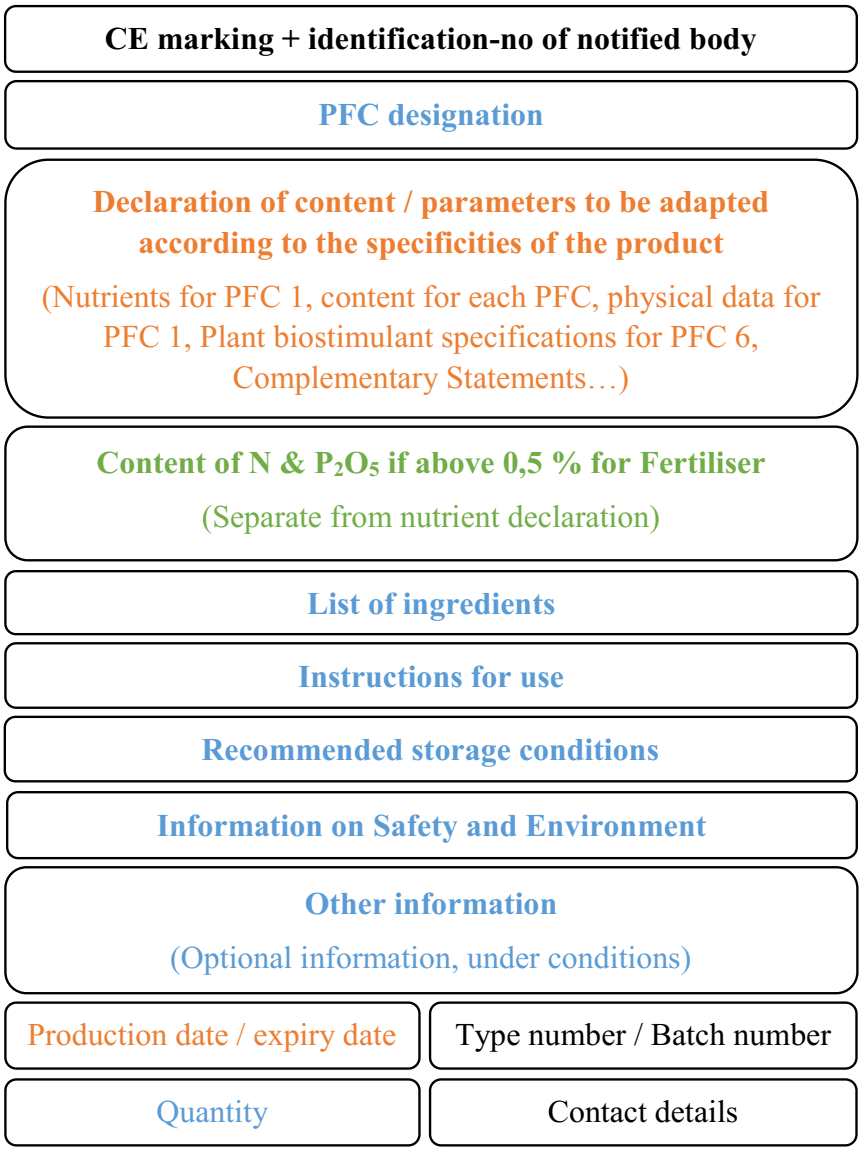
- **How to refer to the organic matter instead of organic carbon?**

The information requested by the FPR may refer to organic matter instead of, or in addition to organic carbon (C_{org}), in accordance with the following conversion factor:

organic carbon (C_{org}) = organic matter × 0, 56

If both are used, the organic matter can be put beside to organic carbon (C_{org}) into brackets, or in the voluntary information section.

- **Example for general labelling requirements and visual appearance**



A detailed label frame including all PFCs and references to the FPR labelling requirements is provided in the Annex to this guidance document.

3. SPECIFIC LABELLING REQUIREMENTS FOR PFC 1 FERTILISER

- **Is it necessary to label the content of all nutrients present in a fertiliser?**

In accordance with point 1 in PFC 1: Fertiliser in Part II of Annex III, the nutrients declaration is a voluntary declaration and the manufacturers decide which nutrients they want to declare – as long as the requirements in relation to the minimum quantity specified in Annex I are met, except for:

- Nitrogen (N) or phosphorus pentoxide (P_2O_5) which have to be indicated as soon as they are above 0,5% by mass (for more details see sub-section 3.3),

- Micronutrients present in the minimum content specified in Annex I, which shall be declared if they are intentionally added to an inorganic or an organo-mineral fertiliser.

If a nutrient is declared, all the FPR requirements in relation to the nutrient declaration have to be met.

- **When the regulation does not define minimum content for secondary nutrients (PFC 1 (A) and PFC 1 (B)), how to label the content of these nutrients?**

It is under the responsibility of the manufacturer to declare content of secondary nutrients, taking into account the tolerances which must be applied to them.

- **When the content of nitrogen (N) or phosphorus pentoxide (P_2O_5) has to be indicated as it is above 0,5 % by mass, how should this information be provided?**

The indication of the content of nitrogen (N) or phosphorus pentoxide (P_2O_5) can be a range of values and is shown as part of the label just below the nutrient declaration, and *clearly separated* by a line or by another labelling information. See the label frame provided as an example sub-section 2.13 of this guidance document. A generic sentence such as *"the product contains…"* can be used to provide this indication.

- **Can the term 'mineral' be used instead of or in addition to the term 'inorganic' in the designation of the product? Where should the term 'mineral' be labelled?**

Yes, it is possible to replace the term '*inorganic*' with '*mineral*' for the fertiliser that belongs to PFC 1(C) as long as the conditions stated in point 4 in PFC 1: Fertiliser in Part II of Annex III to the FPR are fulfilled. If so, in order to comply with point 1(a) of Part I in Annex III, the manufacturer has to add the PFC index of the respective sub-category to which the product belongs (i.e. PFC 1 (C) (I) (a) (ii)).

→ Example:

- Mineral Macronutrient Fertiliser (PFC 1 (C)(I)(a)(i))
- Mineral Macronutrient Fertiliser - PFC 1 (C)(I)(a)(i)
- PFC 1 (C)(I)(a)(i): Mineral Macronutrient Fertiliser

- **Does ammoniacal nitrogen (NH_3) refer to ammonium nitrogen (NH_4^+) for PFC 1?**

Yes.

4. SPECIFIC LABELLING REQUIREMENTS FOR PFC 1(A) ORGANIC FERTILISER

- **Example of a label**

NAME OF THE PRODUCT
SOLID ORGANIC FERTILISER NPK Ca-Mg 4,5-5-1,5 (1.5-2)
Declared nutrient contents by mass: 4,5 % Total Nitrogen (N) 4,0 % Organic nitrogen (N_{org}) from animal and vegetal origin, of which 2 % from manure0,5 % Ammoniacal nitrogen 5,0 % Total phosphorus pentoxide (P_2O_5) 1,5 % Total potassium oxide (K_2O) 1,5 % Water soluble calcium oxide (CaO) 2,0 % Water soluble magnesium oxide (MgO) 29 % Organic carbon (C_{org}) 75 % Dry matter 6,4 C_{org}/N_{tot}
Ingredients: feather meal (CMC 10: Derived products within the meaning of Regulation (EC) No 1069/2009), castor cake (CMC 2: Plant, plant parts and plant extracts), bone meal (CMC 10), cocoa shells (CMC 2)
Instruction of use Target plant 1: Rate – application time – frequency Target plant 2: Rate – application time – frequency Target plant 3: Rate – application time – frequency … Contact company or company's distributor for more specific recommendations. www.website.com
Recommended storage conditions: Store in a dry and aired place.
Information on safety and environment: Wash the hands after use. Do not breathe dusts. Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days Hazardous to animals in case of ingestion - Toxic to dogs and cats
Additional information: Can be used in organic farming according to the current European legislation. Poor in chloride Organic matter: 51,7 %

Net weight: 25 kg.	PELLETS	Production date: 12/03/2019
CE **Notified body n°: XX XX XX XX**		
ENTREPRISE S.A.S – Address. Tel: XX XX XX XX XX – Fax: XX XX XX XX XX Email – website.		
Type number, batch number or other element allowing product identification		

- **How to declare organic nitrogen and the origin of organic matter?**

It is under the responsibility of the manufacturer to provide pertinent information on the origin of the organic matter in an organic fertiliser. He or she is also responsible for providing any relevant information necessary to manage risks to the environment. For the sake of the user's compliance with the Nitrates Directive, the declaration of organic nitrogen should therefore at least mention:

- '*X % organic nitrogen from animal origin, of which Y % from manure*' if the product contains only animal raw material providing organic nitrogen;
- '*X % organic nitrogen from vegetal origin*' if the product contains only vegetal raw material providing organic nitrogen;
- '*X % organic nitrogen from animal and vegetal origin, of which Y % from manure*' if the product is a mix of animal and vegetal raw material providing organic nitrogen.

- **At which precision level should mandatory information for PFC 1(A) be declared?**

This sub-section is particularly relevant for information elements such as the organic carbon and the dry matter content.
The manufacturer is free to define the precision level for the above-mentioned information which is most pertinent for the user. For organic carbon content and dry matter content, it is recommended not to go beyond one decimal, as going beyond would not be in accordance with the precision of current analytical methods.

- **Should ammoniacal nitrogen be declared even if it is not present in the product?**

Ammoniacal nitrogen has to be declared only if it is present in the final product.

- **Is it possible to declare organic matter instead of organic carbon?**

In accordance with point 11 in Part I of Annex III, it is possible to refer to the organic matter instead of or in addition to the organic carbon (C_{org}). It is important to respect the following conversion factor:

Corg = organic matter × 0,56

If both are used, the organic matter can be put next to organic carbon (C_{org}) into brackets, or in the voluntary information section.

- **Where to include the information related to the date of production?**

The production date is the date on which the product manufacturing process is completed. It is up to the manufacturer to determine the date on which the manufacturing of the product is completed. In case, because of the manufacturing or storage system, the exact production date is not known to the manufacturer, the date of production can be understood as the date when the product is packed. The exact location of the production date on the label/packaging can vary depending on what suits best the product concerned, as long as all the information appears on the label. Thus, it is possible to use so called tracing, *i.e.* a reference to one single place on the label where the date is indicated. It is up to the economic operator to use the format of his/her choice to indicate the date (letters or numbers) as long as it is a full date (day/month/year). This information has been put in black colour on the label example.

5. SPECIFIC LABELLING REQUIREMENTS FOR PFC 1(B) ORGANO-MINERAL FERTILISER

- **Example of a label**

NAME OF THE PRODUCT
SOLID ORGANO-MINERAL FERTILISER NPK Ca-Mg 6-5-6 (1.5-2)
Declared nutrient contents by mass: 6,0 % Total Nitrogen (N) 2,0% Organic nitrogen (N_{org}) of animal and vegetal origin, of which 2 % from manure 3,0% Ammoniacal nitrogen 1,0% Urea nitrogen 5,0 % Total phosphorus pentoxide (P_2O_5) 4,0 % Water soluble phosphorus pentoxide (P_2O_5) 1,0 % Phosphorus pentoxide (P_2O_5) soluble in neutral ammonium citrate 1,5 % Total potassium oxide (K_2O) 1,5 % Water soluble potassium oxide (K_2O) 1,5 % Water soluble calcium oxide (CaO) 2,0 % Water soluble magnesium oxide (MgO) 0,05 % Water soluble Copper (Cu) from sulphate 0,50 % Water soluble Iron (Fe) chelated by EDTA 22,4 % Organic carbon (C_{org}) 92 % Dry matter
Ingredients : cocoa shells (CMC 2: Plants, plant parts or plant extracts), castor cake (CMC 2), meat meal (CMC 10: Derived products within the meaning of Regulation (EC) No 1069/2009), natural phosphate (CMC 1: Virgin material substances and mixtures), mono-ammonic phosphate CAS n° 7722-76-1 (CMC 1), potassium sulphate CAS n° 778-80-5 (CMC 1)
Instructions of use

Target plant 1:	Rate – application time – frequency
Target plant 2:	Rate – application time – frequency
Target plant 3:	Rate – application time – frequency

To be used only where there is a recognized need. Do not exceed the application rate.
Contact company or company's distributor for more specific recommendations. www.website.com

Recommended storage conditions:
Store in a dry and aired place.

Information on safety and environment:
CLP pictograms, UFI codes and transport classification pictograms must be added when applicable.
Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days
Hazardous to animals in case of ingestion - Toxic to dogs and cats
This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Additional information:
Organic matter: 40%
Low Cadmium content – Poor in Chloride

Net weight 25 kg. **PELLETS**

CE

Notified body n°: XX XX XX XX

ENTREPRISE S.A.S – Address.
Tel: XX XX XX XX XX – Fax: XX XX XX XX XX
Email – website

Batch n°: XX XX XX XX

- **How to declare organic nitrogen and the origin of organic matter?**

It is under the responsibility of the manufacturer to provide pertinent information on the origin of organic matter in the Organo-mineral Fertiliser. He or she is also responsible for providing any relevant information necessary to manage risks to the environment. For the sake of the user's compliance with the Nitrates Directive, the declaration of organic nitrogen should therefore at least mention:

- 'X % organic nitrogen, *from animal origin, of which Y % from manure*' if the product contains only animal raw material providing organic nitrogen;
- 'X % organic nitrogen, f*rom vegetal origin*' if the product contains only vegetal raw material providing organic nitrogen;
- 'X % organic nitrogen, f*rom animal and vegetal origin, of which Y % from manure*' if the product is a mix of animal and vegetal raw material providing organic nitrogen.

- **Should a specific form of nitrogen (N), phosphorus (P) or potassium (K) be declared even if it is not present in the product?**

Specific forms or solubility of nutrients have to be declared only if present in the final product.

- **How to provide pertinent information about the possible air quality impacts of the release of ammonia from the fertiliser use, and an invitation to users to apply appropriate remediation measures when urea (CH_4N_2O) is present in the product?**

The label of all fertilising products marketed according to the FPR and containing urea must refer to the potential air quality impact due to the release of ammonia from the fertiliser use and invite users to take appropriate remediation measures. This statement should be preferably close to or underneath the nutrient declaration, or in the section concerning safety and environment.

The statement may be of general nature, for example, along the following lines:

'This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.'

Or *'This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken. The manufacturer of this fertiliser has already taken the remediation measure of incorporating a urease inhibitor.'*

- **How to declare the 'low cadmium content'?**

When the product displays a cadmium content equal to or lower than 20 mg/kg phosphorus pentoxide (P_2O_5), it is possible to declare that the product is low in cadmium content. It is recommended to put this statement in 'the Additional information' part of the label. There are various ways to declare this statement, either by text and/or using a pictogram. Should a pictogram be used, it should contain the chemical symbol Cd, but no symbols representing other product features.



***Figure**: Example of Low Cadmium pictogram*

- **At what precision can micronutrients be declared?**

The manufacturer should respect the decimals as referred in the FPR for micronutrients. For more details, see sub-section 6.1.2.

6. SPECIFIC LABELLING REQUIREMENTS FOR PFC 1(C) INORGANIC FERTILISER

- **PFC 1 (C)(I): Inorganic Macronutrient Fertiliser**

  - **Example of a label**

Proposal for nutrient declaration for an inorganic macronutrient fertiliser with micronutrients including link to mineral fertiliser statement:

SOLID INORGANIC MACRONUTRIENT FERTILISER

NPK (Ca, Mg, S) mineral fertiliser with micro-nutrients, 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6)

Or

MINERAL FERTILISER (PFC 1(C)(I)(a))

NPK (Ca, Mg, S) fertiliser with micro-nutrients, 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6)

Or

MINERAL FERTILISER (PFC 1(C)(I)(a))

NPK (Ca, Mg, S) complex[171] *fertiliser with micro-nutrients, 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6)*

Or

MINERAL FERTILISER (PFC 1(C)(I)(a))

NPK (Ca, Mg, S) complex fertiliser 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6) with micro-nutrients

16 % TOTAL NITROGEN (N)
7,0 % Nitric Nitrogen
9,0 % ammoniacal nitrogen

9 % TOTAL PHOSPHORUS PENTOXIDE (P_2O_5) (= 3,9 % P)
6,7 % water soluble phosphorus pentoxide (P_2O_5) (= 2,9 % P).
9,0 % phosphorus pentoxide (P_2O_5) soluble in neutral ammonium citrate (= 3,9 % P).

12 % POTASSIUM OXIDE (K_2O) (= 10 % K) Water soluble.

3 % TOTAL CALCIUM OXIDE (CaO) (= 2,1 % Ca)
1,0 % CaO (= 0,7 % Ca) water soluble

2 % TOTAL MAGNESIUM OXIDE (MgO) (= 1,2 % Mg)

15 % SULPHUR TRIOXIDE (SO_3) (= 6 % S) Water soluble.

[171] Only applicable for those fertilisers that fit the definition of complex (each physical unit contains all the declared nutrients in their declared content).

0,01 % Boron (B), as sodium salt, water soluble
0,020 % Total Copper (Cu), complexed by HGA, 0,015% water soluble
0,30 % Total Iron (Fe)
0,26 % as sulphate, soluble in water; 0,04 % chelated by EDTA
0,05 % Manganese (Mn), as sulphate, water soluble
0,006 % Total Molybdenum (Mo), as sodium salt
0,003 % water soluble
0,008 % Total Zinc (Zn), as oxide

To be used only where there is a recognised need. Do not exceed the application rate.

Remark: this label example is only showing part of the mandatory labelling (applicable to this category of fertiliser). For an example in full detail, please see the example in sub-section 6.5.

- **What is the minimum number of decimals that should be indicated on the label?**

The FPR is not providing guidance on the number of decimals to be used. The author of the label should keep it legible for the user and therefore it is suggested:

- To limit it to zero or one decimal for the declaration of macronutrients (N-P-K-Ca-Mg-Na-S), except for those for which minimum declarable quantity values are already defined with one or more decimals in Annex I to the FPR.
- To respect, as much as possible, the number of decimals as referred to in the Regulation for the declaration of micronutrients. If needed (for example, to meet tolerance limits) one additional decimal, as referred to in the FPR for micronutrients can be used.

- **How to provide pertinent information about the possible air quality impacts of the release of ammonia from the fertiliser use, and an invitation to users to apply appropriate remediation measures when urea (CH_4N_2O) is present in the product?**

The label of all fertilising products marketed according to the FPR and containing urea must refer to the potential air quality impact due to the release of ammonia from the fertiliser use and invite users to take appropriate remediation measures. This statement should be preferably close to or underneath the nutrient declaration, or in the section concerning safety and environment.

The statement may be of general nature, for example, along the following lines:

'This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.'

or

'This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken. The manufacturer of this fertiliser has already taken the remediation measure of incorporating a urease inhibitor.'

- **How to declare the "low cadmium content"?**

When the product displays a cadmium content equal to or lower than 20 mg/kg phosphorus pentoxide (P_2O_5), it is possible to declare that the product is low in cadmium content. It is recommended to put this statement in the 'Additional information' part of the label. There are various ways to declare this statement, either by text and/or using a pictogram. Should a pictogram be used, it should contain the chemical symbol Cd, but no symbols representing other product features.



***Figure**: Example of Low Cadmium pictogram*

- **PFC 1(C)(I)(a): Solid Inorganic Macronutrient Fertiliser**

- **Example of a label**

Please refer to example provided under sub-section 7.1.

- **Example for granulometry**

See below in sub-section in paragraph 6.2.3.

- **In what way can granulometry and physical unit be indicated on the label? Is it allowed to reference more than one sieve when indicating the granulometry of a product?**

The determined sieve(s) is(are) to be defined by the manufacturer depending on the product.

The information in relation to granulometry and physical unit should be provided, preferably grouped on the label. Additional information concerning granulometry can be voluntarily given by the manufacturer, as long as it is compliant with the FPR.

Moreover, it should be allowed to indicate more than one form of the physical unit, as for stability reasons, for example, a combination of more than one physical unit can be present.

Example: Mandatory granulometry and physical unit label descriptions for an inorganic solid macronutrient fertiliser:

Granulometry: Powder. 90 % of the product passes through sieve of 1mm.

Granulometry: Granules. X % of the product passes through sieve of Y mm.

Example: Alternative granulometry and physical unit label descriptions for an inorganic solid macronutrient fertiliser to be compliant to requirements in point 2 of PFC 1(C)(I)(a) in Part II of Annex III:

Granulometry: Combination of powder and prills. X % of the product passes through sieve of 1 mm and the remaining Y % through sieve of Z mm. Granulometry: Granules. 95 % of the product has a granular size between 2,0 – 4,5 mm.

- **How is a "coating" defined?**

The specific information concerning coated fertilisers should preferably be grouped as much as possible on the label. Information concerning coated fertilisers that must be provided refers to:

- The functionality period of the coated fertilizer;
- The type of coating agent as referred to in point 4 of PFC 1(C)(I)(a) in Part II of Annex III.

- **How to declare the functionality period of the coated fertiliser?**

See recommendations above under Section 2.5

- **How to declare the type of coating agent?**

With respect to the coated solid inorganic fertilisers the brand name of the coating agent(s) and the percentage of fertiliser coated by each agent should be indicated. Within the FPR, coating agent is a polymer or sulphur controlling water penetration into nutrient particles and thus the release of nutrients. This information should be followed by the markings: '*The rate of nutrient releases can vary according to the temperature of the substrate. An adjustment of fertilisation may be necessary.'* In case the fertiliser is coated or partially coated with sulphur as a coating agent the first marking should be rephrased as: '*The rate of nutrient release can vary according to the temperature of the substrate and the biological activity'*.

→ Example covering all mandatory information as regards coated fertilisers:

An X-Y months product. 100 % of the product is coated with *BRANDNAME*® coating. The rate of nutrient release can vary according to the temperature of the substrate. An adjustment of fertilisation may be necessary. Re-application after less than Y months is not allowed.

- **How to draw the label for mined fertilisers?**

Mining is the extraction of valuable minerals or other geological materials from the earth, usually from an orebody, lode, vein, seam, reef or placer deposit. These deposits are natural sources of the minerals, which are used as inorganic fertilisers themselves or as raw materials to produce (some) inorganic fertilisers.

Due to the natural origin of those mined fertilisers the content of naturally occurring impurities (minerals not important for the product) can vary in the product during the mining process. However, as impurities should not be included in the list of ingredients (see sub-section 2.7 of this guidance document for more information), only the mined product (mined mineral) itself should be seen as an ingredient and thus indicated in the ingredient section on the label.

Some mined fertilisers have been known by their mineralogical name for years. Therefore, when listing them in the ingredients section on the label, it is possible to use mineral names (for example, Sylvinite, Langbeinite) in addition to the names used in accordance with Article 18 of the CLP Regulation, and the corresponding identification number of the material (CAS number or EC number) if available.

Example: List of ingredients on the label for mined fertiliser (naturally occurring langbeinite):Ingredients: Langbeinite (Potassium magnesium sulphate) CAS 14977-37-8 (Virgin material substances and mixtures)

- **PFC 1(C)(I)(b): Liquid Inorganic Macronutrient Fertiliser**

Proposal for nutrient declaration for a liquid inorganic macronutrient fertiliser with micronutrients including link to mineral fertiliser statement:

LIQUID INORGANIC MACRONUTRIENT FERTILISER

NPK (Ca, Mg, S) fertiliser with micronutrients, 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6)

Or

LIQUID MINERAL FERTILISER (PFC 1(C)(I)(b))

NPK (Ca, Mg, S) fertiliser with micronutrients, 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6)

Or

LIQUID MINERAL FERTILISER (PFC 1(C)(I)(b))

NPK (Ca, Mg, S) fertiliser 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6) with micronutrients

16 %	TOTAL NITROGEN (N)
	7,0 % nitric nitrogen
	9,0 % ammoniacal nitrogen
9 %	TOTAL PHOSPHORUS PENTOXIDE (P_2O_5) (=3,9% P)
	9,0 % water soluble phosphorus pentoxide (P_2O_5) (=3,9% P).
12 %	POTASSIUM OXIDE (K_2O) (=10 % K) water soluble.
3 %	CALCIUM OXIDE (CaO) (=2,1 % Ca) Water soluble.
2 %	MAGNESIUM OXIDE (MgO) (=1,2 % Mg) Water soluble
15 %	SULPHUR TRIOXIDE (SO_3) (=6 % S) Water soluble.

Micronutrients are completely water soluble : 0,01 % Boron (B), as sodium salt ; 0,020 % Copper (Cu), complexed by HGA ; 0,30 % Iron (Fe), 0,26 % as sulphate, 0,04 % chelated by EDTA ; 0,05 % Manganese (Mn), as sulphate ; 0,006 % Molybdenum (Mo), as sodium salt; 0,008 % Zinc (Zn), as sulphate

To be used only where there is a recognised need. Do not exceed the application rate.

Remark: this label example is only showing part of the mandatory labelling (applicable to this category of fertiliser). For an example in full detail, please see the example in sub-section 6.5.

- **PFC 1(C)(II): Inorganic Micronutrient Fertiliser**

  - **PFC 1(C)(II)(a): Straight Inorganic Micronutrient Fertiliser**

Proposal for nutrient declaration for a straight inorganic micronutrient fertiliser including link to mineral fertiliser statement:

STRAIGHT INORGANIC MICRONUTRIENT FERTILISER
mineral micronutrient fertiliser
Or
STRAIGHT INORGANIC MICRONUTRIENT FERTILISER
mineral micronutrient fertiliser, 5.3 % Fe
Or
MINERAL MICRONUTRIENT FERTILISER (PFC 1(C)(II)(a)

5,3 % Total Iron (Fe)
2,2 % as sulphate, water soluble
3,1 % chelated by EDTA, 1,5 % water soluble

To be used only where there is a recognised need. Do not exceed the application rate.

Remark: this label example is only showing part of the mandatory labelling (applicable to this category of fertiliser). For an example in full detail, please see the example in sub-section 6.5.

  - **PFC 1(C)(II)(b): Compound Inorganic Micronutrient Fertiliser**

Proposal for nutrient declaration for a compound inorganic micronutrient fertiliser including link to mineral fertiliser statement:

COMPOUND INORGANIC MICRONUTRIENT FERTILISER
mineral micronutrient fertiliser in solution

Or

COMPOUND INORGANIC MICRONUTRIENT FERTILISER

mineral micronutrient fertiliser in solution, 0,2 % B, 0,52 % Cu, 2,3 % Fe, 0,5 % Mn, 0,06 % Mo, 0,8 % Zn

Or

MINERAL MICRONUTRIENT FERTILISER IN SOLUTION (PFC 1(C)(II)(b)

Micronutrients are completely water soluble:

0,2 % Boron (B), as sodium salt ; 0,52 % Copper (Cu), as sulphate, complexed by HGA ; 2,30 % Iron (Fe), 1,04 % chelated by EDTA ; 0,5 % Manganese (Mn), as sulphate ; 0,06 % Molybdenum (Mo), as sodium salt; 0,8 % Zinc (Zn), as sulphate.

or

0,2 % Boron (B), as sodium salt, water soluble

0,52 % Copper (Cu), complexed by HGA, water soluble

2,30 % Iron (Fe) as sulphate; 1,04 % chelated by EDTA water soluble

0,5 % Manganese (Mn), as sulphate, water soluble

0,06 % Molybdenum (Mo) as sodium salt, water soluble

0,8 % Zinc (Zn), as sulphate, water soluble

To be used only where there is a recognised need. Do not exceed the application rate.

Remark: this label example is only showing part of the mandatory labelling (applicable to this category of fertiliser). For an example in full detail, please see the example in sub-section 6.5.

- **PFC 1(C) complete label example**

CE

Notified body n° if applicable

NAME OF THE PRODUCT



MINERAL FERTILISER - PFC 1(C)(I)(a)

NPK (Ca, Mg, S) fertiliser with micro-nutrients, 16-9-12 (+3 +2 +15) / 16-3,9-10 (+2,1 +1,2 +6)

16 % **TOTAL NITROGEN (N)**

7,0 % nitric nitrogen

7,0 % ammoniacal nitrogen

2,0 % urea nitrogen

9 % **TOTAL PHOSPHORUS PENTOXIDE (P_2O_5) (= 3,9 % P)**

6,7 % water soluble phosphorus pentoxide (P_2O_5) (= 2,9 % P).

9,0 % phosphorus pentoxide (P_2O_5) soluble in neutral ammonium citrate (= 3,9 % P).

12 % **POTASSIUM OXIDE (K_2O) (= 10 % K)** Water soluble.

3 % **TOTAL CALCIUM OXIDE (CaO) (= 2,1 % Ca)**

1,0 % CaO (= 0,7 % Ca) water soluble.

2 % **TOTAL MAGNESIUM OXIDE (MgO) (= 1,2 % Mg)**

15 % **SULPHUR TRIOXIDE (SO_3) (= 6 % S)** Water soluble.

Poor in Chloride

0,01 % Boron (B), as sodium salt, water soluble

0,020 % Total Copper (Cu), complexed by HGA

0,015% water soluble

0,30 % Total Iron (Fe), 0,26 % as sulphate, water soluble ; 0,04 % chelated by EDTA

0,05 % Manganese (Mn), as sulphate, water soluble

0,006 % Total Molybdenum (Mo), as sodium salt

0,003 % water soluble

0,008 % Total Zinc (Zn), as oxide

Granulometry: Granules. 95% of the product passes through sieve of 4,5 mm.

Ingredients: Ammonium Nitrate[1] (CAS n° 6484-52-2), Potassium Nitrate[1] (CAS n° 7757-79-1), Ammonium Phosphate[1] (CAS n° 7722-76-1), Magnesium Sulphate[1] (CAS n° 7487-88-9), Coating X[9]

[1]Virgin material substances and mixtures; [9] Polymers other than nutrient polymers.

Instructions and application rates:

	Light feeding	Normal feeding	Heavy feeding
Container nursery stock	1 – 2 g/l	1,5 – 2,5 g/l	2,5 – 3,5 g/l

This product with a regular and continuous release pattern is ideal for

Pot Plants	1 – 2 g/l	2 – 3 g/l	3 – 4 g/l	fast growing conifers and Evergreens.
Bedding plants / annuals	1 – 2 g/l	2 – 3 g/l	3 – 4 g/l	

To be used only where there is a recognized need. Do not exceed the application rate

Attention: *The above-mentioned recommended rates are based on unfertilised substrates. Please be aware that these are general recommendations. Specific situations such as use in tunnels, green-houses, or specific climate conditions require adjustments. This product is not recommended for dibbling and/or autumn/winter potting.* 100 % of the product is coated with coating X®. The rate of nutrient release can vary according to the temperature of the substrate. An adjustment of fertilisation may be necessary. Re-application after less than 4 months is not allowed.

Contact company or company's distributor for more specific recommendations. www.website.com

Storage conditions: Store the product in a dry and well-ventilated space out of direct sunlight.

Storage temperature 0-40 °C. Partly used or damaged bags should be closed well.

Information on safety and environment:

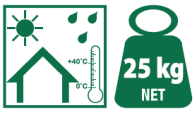
Product classified under the Regulation EC n°1272/2008. Please refer to the corresponding labelling on the packaging.

CLP pictograms, UFI codes and transport classification pictograms must be added when applicable.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

General information:

FOR PROFESSIONAL USE ONLY.





Company details

Product n°: …….. Batch n°: ……..

[NAME OF THE PRODUCT]

7. SPECIFIC LABELLING REQUIREMENTS FOR PFC 2 LIMING MATERIAL

- **Examples of a label**

Example 1

LIMING MATERIAL

Product specific labelling requirements:

Neutralising value: 54 (equivalent CaO)
Granulometry: 90 % by mass passing through a sieve of 1,0 mm
Total CaO: 51 % by mass
Total MgO: 2 % by mass
Reactivity: 73% (hydrochloric acid test)

Ingredients:

Limestone [a] CAS nº 471-34-1

With [a] virgin material substances and mixtures

Instructions of use:

1500 to 4000 kg/ha to increase pH from 6 to 6,5 in clay silty soils - Refer to soil analysis to calculate quantity and frequency to apply. Apply uniformly and incorporate in the soil.

Contact company or company's distributor for more specific recommendations. www.website.com

Storage conditions:

Keep in a dry place. Avoid exposure to air or moisture over prolonged periods.

Information on safety and environment:

No special requirements

Additional information:

- 2003/2003 labelling: G.1.(a) Natural limestone – standard quality

- Authorized to be used in organic farming according to the current EU legislation

25 kg net

CE

Notified body n° : xxxx (if applicable)

Manufacturer's name

Manufacturer's registered trade name or trade mark

Postal address

Type number, batch number or other element allowing product identification

Example 2:

LIMING MATERIAL
Product specific labelling requirements: Neutralising value: 94 (equivalent CaO) Granulometry: 5 % by mass passing through a sieve of 1,0 mm Total CaO: 93 % by mass Total MgO: 1 % by mass
Ingredients: Burnt lime a CAS no 305-78-8 With a virgin material substances and mixtures
Instructions for use: 500 to 1000 kg/ha to increase pH from 6 to 6,5 in clay silty soils - Refer to soil analysis to calculate quantity and frequency to apply. Apply uniformly on humid soil and incorporate in the soil Contact company or company's distributor for more specific recommendations. www.website.com
Storage conditions: Keep in a dry place. Avoid exposure to air or moisture over prolonged periods.
Information on safety and environment: *CLP pictograms, transport classification pictograms and UFI codes must be added when applicable.*
Additional information: - EN 14069:2017: Burnt lime – premium quality– screened - Granulometry by dry sieving : 2 to 8 mm - 98 % by mass passing through a sieve of 8 mm and 4 % by mass passing through a sieve of 0,4 mm
25 kg net **Production date : XX/XX/XXXX**
CE **Notified body n° : xxxx (if applicable)**
Manufacturer's name Manufacturer's registered trade name or trade mark Postal address
Type number, batch number or other element allowing product identification

- **Regulatory reference, explanation and voluntary additions**

Examples of voluntary additions on the label in section 'additional information':

- Labelling according to Regulation (EC) No 2003/2003 or standard EN 14069

Since 2014, liming materials have been labelled according to the criteria set in Regulation (EC) No 2003/2003 as amended by Regulation (EU) No 463/2013[172]. To ensure some consistency in the labelling information and to provide users with familiar information, a reference to the labelling according to this regulation may be provided in the section 'additional information' on a voluntary basis.

[172] Commission Regulation (EU) No 463/2013 of 17 May 2013 amending Regulation (EC) No 2003/2003 of the European Parliament and of the Council relating to fertilisers for the purposes of adapting Annexes I, II and IV thereto to technical progress, OJ L 134, 18.5.2013, p. 1–14.

Alternatively, a reference to product denomination according to standard EN 14069[173] can be placed voluntary on the label of the liming material. This European Standard specifies the standard and premium requirements of products of natural origin and products from industrial processes to be used as liming materials in agriculture.

- Reference to reactivity

Annex III to the FPR requires declaration of reactivity and method of determination of reactivity.

In existing commercial practices, three methods are recognized for the determination of the reactivity of liming materials:

a) Determination of the reactivity of carbonate and silicate liming materials with hydrochloric acid;

b) Determination of product effect by soil incubation;

c) Determination of the reactivity by automatic titration method with citric acid.

Annex I to the FPR sets minimum requirements for reactivity with reference to the hydrochloric acid or incubation tests. In some EU Member States the reactivity of liming materials is measured using another test: the citric acid method (as currently described in standard EN 16357[174]). However, this method is not included in Annex I to the FPR and, therefore, cannot be used to prove compliance with the requirements therein.

The specific labelling requirements for PFC 2 in Annex III do not specify a mandatory reference to one of two tests that are included in Annex I. For labelling purposes, the manufacturer therefore has the possibility to choose among any available measuring tests the one that suits the product best and is of highest value to the user, and declare accordingly the reactivity of his/her product.

8. SPECIFIC LABELLING REQUIREMENT FOR PFC 3 SOIL IMPROVER

- **PFC 3(A) Organic Soil Improver**

- **Examples of a label**

Example 1: for the labelling of a 100% peat organic soil improver to be used for instance as an amendment for blueberry cultivation:

[173] EN 14069:2017, Liming materials – Denominations, specifications and labelling
[174] EN 16357:2013, Carbonate liming materials - Determination of reactivity - Automatic titration method with citric acid

[NAME OF THE PRODUCT]
ORGANIC SOIL IMPROVER
Product specific labelling requirements: Dry matter (DM): 45 % by mass pH: 4,5 [175] Electrical conductivity: 5 mS/m 176 Organic carbon (Corg): 54 % mass Organic nitrogen (Norg): 1 % mass, organic matter of peat origin Corg/N ratio: 54
Ingredients: peat[a] With [a] virgin material substances and mixtures
Instructions for use: The function of this organic soil improver is to improve the physical properties and structure of the soil to which it is added and worked in to. In particular, the water holding capacity of sandy soils is improved. Heavy, clayey soils are improved by increasing the air capacity. The application rate is 5 to 20 litres/m² of soil depending on how sandy or clayey a soil is. Contact company or company's distributor for more specific recommendations. www.website.com
Storage conditions: To avoid product's changes, protect from exposure to weather i.e. sunlight, precipitation and drying out.
Information on safety and environment: Do not eat. Avoid wrong and not intended application.
Additional information: RPP certified (with visible logo) RHP certified (with visible logo)
50 L net Production date: DD/MM/YYYY, see side of package[177]
CE Notified body n° : xxxx (if applicable)
Manufacturer's name Manufacturer's registered trade name or trade mark Postal address Importer's name Importer's registered trade name or trade mark

[175] Recommendation to refer to the EN method.
[176] Recommendation to refer to the EN method.
[177] Production date, type number, batch number or other element allowing product identification (Article 6(5) of the FPR) can be printed separately on the package.

Importer's postal address
Type number, batch number or other element allowing product identification[178]

[178] Production date, type number, batch number or other element allowing product identification (Article 6(5) of the FPR) can be printed separately on the package.

Example 2 for labelling of a bulky compost soil improver:

[NAME OF THE PRODUCT]
ORGANIC SOIL IMPROVER
Product specific labelling requirements: Dry matter (DM): 40 % by mass pH: 8,5[179] Electrical conductivity: 220 mS/m 180 Organic carbon (C_{org}): 15,7 % mass or Organic nitrogen (N_{org}): 1 % mass, organic matter of compost origin C_{org}/N ratio: 16 Indications of nutrient content: Total Nitrogen (N) 1,1 % Total Phosphorus pentoxide ($P_2 0_5$) 0,6 % Total Potassium oxide ($K_2 0$) 1,0 %
Ingredients: Compost [a] With [a] CMC 3: Compost
Instructions for use: Organic soil improver can be used for every soil type for maintaining and improving the physical or chemical properties, the structure and biological activity of the soil. The content of organic matter, nutrients and the pH-value acts on soil fertility conditions. For application on arable land (wheat, sugar beet, rapes, maize, field vegetables etc.) the individual conditions of soil type, climate and production have to be considered. When calculating the nutrient demand of the crops, the available nutrient load of the organic soil improver has to be taken into account. In landscaping organic soil improvers are used for plant beds or in planting holes for shrubs, perennials and woody plants. Further applications of organic soil improver are mulching, top dressing and component for growing media. National Regulations and national official recommendations for application must be complied with. Contact company or company's distributor for more specific recommendations. www.website.com
Storage conditions: Outdoor storage of bulk material has to be in a way to avoid material erosion to water bodies.
Information on safety and environment: Material use only in accordance with application recommendations. Clean hands after material use.
40 tonnes Production date: DD/MM/YYYY, see accompanying documents (bulk transport) [181]

[179] Recommendation to refer to the EN method
[180] Recommendation to refer to the EN method

[181] Production date, type number, batch number or other element allowing product identification (Article 6.5 of FPR).

CE **Notified body n°: xxxx**
Manufacturer's name Manufacturer's registered trade name or trademark Postal address Importer's name Importer's registered trade name or trademark Importer's postal address
Type number, batch number or other element allowing product identification[182]

- **Regulatory reference, explanation and voluntary additions**

National regulations, both on the use of the product or on compliance with the requirements for placing it on the national market, may be added on a voluntary basis as long as they are clear to the user and separated from the FPR label.

Possible statements about compliance with the FPR include:

'The product fulfils the requirements set for PFC 3(A) (Organic Soil Improver) in Part II of Annex I and for CMC 3 (Compost) in Part II of Annex II to the FPR.'

'The product fulfils the requirements of Regulation (EC) No 834/2007 (Organic production and labelling of organic products).'

'The production process and the product has been externally controlled according to Module D1: Quality Assurance of the Production Process as described in Part II of Annex IV to the FPR.'

[182] Production date, type number, batch number or other element allowing product identification (Article 6(5) of the FPR).

- **PFC 3(B) Inorganic Soil Improver**

▪ **Example of a label**

[NAME OF THE PRODUCT]
INORGANIC SOIL IMPROVER
Product specific labelling requirements: **Dry matter content: 90%** by mass
Ingredients: Bentonite [a] CAS n° 1302-78-9 With [a] virgin material substances and mixtures
Instructions for use: Spread onto surface of soil and mix into top. Contact company or company's distributor for more specific recommendations. www.website.com
Storage conditions: Keep in a dry place. Avoid exposure to air or moisture over prolonged periods.
Information on safety and environment: No special requirements
Additional information: Authorized to be used in organic farming according to the current EU legislation
40 tonnes **Production date : DD/MM/YYYY**
CE **Notified body n° : xxxx (if applicable)**
Manufacturer's name Manufacturer's registered trade name or trade mark Postal address Importer's name Importer's registered trade name or trade mark Importer's postal address
Type number, batch number or other element allowing product identification[183]

▪ **Regulatory reference, explanation and voluntary additions**

Annex I of the FPR does not provide efficiency criteria or parameters for inorganic soil improvers, meaning that no product specific labelling requirements need to be provided. In the absence of harmonized criteria and their corresponding standards, product suppliers are invited to provide information on efficiency of the product in the section 'additional information'.

[183] Production date, type number, batch number or other element allowing product identification (Article 6(5) of the FPR) can be printed separately on the package.

9. SPECIFIC LABELLING REQUIREMENTS FOR PFC 4 GROWING MEDIUM

A PFC 4 product consists of a single bulky (volume-building) component or a mix of bulky (volume-building) components (for example. peat, wood fibers, coconut coir, compost, expanded perlite).

- **Examples of a label**

Example 1: the labelling of a mineral wool growing medium.

[NAME OF THE PRODUCT]
GROWING MEDIUM
Product specific labelling requirements pH (H_2O): 6.0
Instructions for use: Recommended use: Usable in hydroponic cultivation systems to grow fruity vegetables and other crops
Storage conditions: • Products should be stored dry. If possible also store in original packaging. • Incompatible materials: None. • Packaging material: Products are packed in polyethylene film or cardboard on wooden pallets.
Information on safety and environment This product can be used safely by growers for growing plants. Please follow the instructions in the Safe Use Instructions Sheet.
Ingredients: Stone wool CAS no° 65997-17-3[a] , binding material CAS no° 9003-35-4[a] With [a] virgin material substances and mixtures
Special instructions for products containing binding materials **Please do not use in contact with soil** **In collaboration with the manufacturer, please make sure of a sound disposal of the products after end of use**
Additional information:
1 PCE, Length 133 cm x width 15 cm x height 10 cm **Production date : DD/MM/YYYY[1]**
CE **Notified body n° : xxxx**
Manufacturer's name Manufacturer's registered trade name or trademark Postal address Importer's name Importer's registered trade name or trademark

Importer's postal address
Type number, batch number or other element allowing product identification

Example 2: growing medium consisting of only bulky (volume-building) components

A growing medium cannot contain fertilisers, liming materials, plant biostimulants or products belonging to other PFCs. This type of growing medium (PFC 4) is placed on the market for exceptional applications where the addition of products belonging to other PFCs is not essential. It will also serve as the basis for Fertilising Product Blends (PFC 7) containing other PFCs. Any Growing Medium (PFC 4) blended with one or more products of any other PFC (for example fertiliser, liming material, plant biostimulants) is a PFC 7. An example is given in section 12 on the labelling requirements for PFC 7.

[NAME OF THE PRODUCT]
GROWING MEDIUM **(without addition of other PFCs)**
Product specific labelling requirements: Electrical conductivity: 50 mS/m [184] pH (H_2O): 5 [185] Phosphorus pentoxide (P_2O_5): 25 mg/l (CAT-soluble)
Ingredients: Peat[a], wood fibres[b], green compost[c] With [a] virgin material substances and mixtures, [b] plants, plant parts or plant extracts , [c] compost
Instructions for use: Growing medium without any other blended fertilisers, liming materials, biostimulants or other products, used as a plain PFC 4 forming the basis for other fertilising product blends (PFC7). Contact company or company's distributor for more specific recommendations. www.website.com
Storage conditions: To avoid product changes protect from exposure to weather i.e. sunlight, precipitation and drying out, store dry.
Information on safety and environment: Do not eat. Avoid wrong and not intended application.
Additional information: RPP certified (with visible logo). RHP certified (with visible logo) RAL certified
70 L net **Production date : DD/MM/YYYY[186]**
CE **Notified body n° : xxxx**
Manufacturer's name Manufacturer's registered trade name or trademark Postal address Importer's name Importer's registered trade name or trademark Importer's postal address

[184] It's allowed to refer to the harmonised standard or other technical specification used.

[185] It's allowed to refer to the harmonised standard or other technical specification used.

[186] Production date, type number, batch number or other element allowing product identification (Article 6.5) are usually printed separately on the package.

Type number, batch number or other element allowing product identification[187]

Remark: This label frame is given as a general, indicative example of the label structure.

- **Regulatory reference, explanation and voluntary additions**

National regulations may be added on a voluntary basis as long as they are clear to the user and separated from the FPR label.

10. SPECIFIC LABELLING REQUIREMENTS FOR PFC 5 INHIBITORS

- **PFC 5(A) Nitrification Inhibitor**

Example:

CE **Notified body n° (if applicable)**
NAME OF THE PRODUCT
NITRIFICATION INHIBITOR
Ingredients: *Virgin Material Substances and Mixtures:* 3,4-dimethyl-1H-pyrazol phosphate (DMPP, CAS n° : 202842-98-6, EC no 424-640-9) Phosphoric acid (CAS n° : 7664-38-2, EC no : 231-633-2)
Instructions for use: The nitrification inhibitor 3,4-dimethyl-1H-pyrazole phosphate (DMPP) can be added to solid and liquid fertilisers if at least 50 % of the total nitrogen content of the fertiliser consists of the nitrogen forms urea nitrogen and ammonium nitrogen. Minimum and maximum DMPP content is 0,8 and 1,6 as a percentage by mass of the total nitrogen present as ammoniacal nitrogen and urea nitrogen. Contact company or company's distributor for more specific recommendations. www.website.com
Storage recommendations: Store in dry conditions. For further recommendations. See Section 7 of material safety data sheet.
Information on safety and environment: Product classified under the Regulation EC n°1272/2008 and GHS. Please refer to the corresponding labelling on the packaging. ***CLP pictograms, transport classification pictograms and UFI codes must be added when applicable.***
General information: **FOR PROFESSIONAL USE ONLY.**

[187] Production date, type number, batch number or other element allowing product identification (Article 6.5.) are usually printed separately on the package.

Company details
Product n°: …….. Batch n°: ……..

- **PFC 5(B) Denitrification Inhibitor**

At the moment no denitrification inhibitors are commercially available on the EU market. The general label layout should be similar to the layout for a nitrification and/or urease inhibitor.

- **PFC 5(C) Urease Inhibitor**

Example:

CE **Notified body n° (if applicable)**
NAME OF THE PRODUCT
UREASE INHIBITOR
Ingredients: *Virgin Material Substances and Mixtures:* N-butylphosphorothioic triamide (NBPT, CAS n° 94317-64-3, EC no: 435-740-7) N-propylphosphorothioic triamide (NPPT, CAS n° 916809-14-8, EC no: 618-780-1) Polyethyleneimine (CAS nº 9002-98-6, EC 618-346-1) Propylenglycol (CAS nº 57-55-6, EC nº 200-338-0) Dimethylsulfoxid (CAS nº 67-68-5, EC nº 200-664-3)
Instructions for use: This urease inhibitor (UI) "mixture of N-butylphosphorothioic triamide (NBPT) and N-propylphosphorothioic triamide (NPPT) (ratio 3:1)" can be added to solid and liquid fertilisers if at least 50 % of the total nitrogen content of the fertiliser consists of the nitrogen form urea nitrogen. Minimum and maximum UI content is 0,02 and 0,3 as a percentage by mass of the total nitrogen present as urea nitrogen. Contact company or company's distributor for more specific recommendations. www.website.com
Storage recommendations: Store in dry conditions. For further recommendations. See Section 7 of material safety data sheet.
Information on safety and environment: Product classified under the Regulation EC n°1272/2008 and GHS. Please refer to the corresponding labelling on the packaging. ***CLP pictograms, transport classification pictograms and UFI codes must be added when applicable.***
General information: **FOR PROFESSIONAL USE ONLY.**
Company details
Product n°: …….. Batch n°: …….

11. **SPECIFIC LABELLING REQUIREMENTS FOR PFC 6 PLANT BIOSTIMULANT**

- **Examples of a label**

  - **PFC 6(A) Microbial Plant Biostimulant**

12. [NAME OF THE PRODUCT]

13. CE Notified body n°: xx xx xx xx (if applicable)

14. PFC 6 (A) – Microbial Plant biostimulant

15. Ingredients:

16. CMC 7 – *Azotobacter vinelandii* AS 80

17. Micro-organism concentration: $1x10^7$ CFU/ml

18. Instructions for use:

Crops	Application rates (L/ha)	Application method	Application stage	Application number	Claims
Refer to the terminology specified in harmonised standards or other technical specifications	1 to 4	Soil applied nutrition or via irrigation water	Pre-plant, planting, or top dress stage	High value crops may receive repeat applications every 1-3 weeks. There are no restrictions on the number of applications per crop	Refer to the terminology specified in harmonised standards or other technical specifications
	1 to 4	Soil applied nutrition or via irrigation water	Pre-plant, planting, or top dress stage	The product can be applied weekly. There are no restrictions on the number of applications per crop or crop cycle.	
	1 to 4	with standard nutrition or via irrigation	Pre-plant, planting, or top dress stage	The product can be applied weekly. There are no restrictions on the number of applications per crop or crop cycle.	
	1 to 4	Applied in-furrow or with soil nutrition as well as side-dress/top-dress. The product may also be	From the pre-planting through to mid-vegetative stage	There are no restrictions on the number of applications per crop or crop cycle.	

		applied via irrigation			

19. The product can be mixed with the majority of liquid fertilisers, plant nutrition products or plant protection products but must not be mixed with any bactericide. The product may also be applied with all transplant solutions, dips and watering solutions.
20. It is recommended to perform a compatibility test before applying this product as a mixture.
21. SHAKE/AGITATE WELL BEFORE USING.
22. Contact company or company's distributor for more specific recommendations. www.website.com

23. Recommended Storage conditions:
24. Keep the product in its original packaging. Store in a cool, dry place between 2 °C and 48 °C. Do not expose to direct sunlight. Protect from freezing.

25. Information on Safety and Environment[188]:
26. EUH 208: Contains *Azotobacter vinelandii*, micro-organisms may have the potential to provoke sensitising reactions
27. P102: Keep out of reach of children
28. P270: Do not eat, drink or smoke when using this product
29. P280: Wear protective gloves/protective clothing/eye protection/face protection type FFP3

30. Emergency contact:
In case of emergency contact: XX: tel. XX-XX-XX-XX, (24/24, 7/7)

31. Production date: see on the packaging 32. Expiry date: 3 years from production date	33. Type number/Batch number 34. + notified body number (if applicable)
35. 5 L LIQUID	36. ENTREPRISE S.A.S – Address. 37. Tel: XX XX XX XX XX – Fax: XX XX XX XX XX

[188] CLP pictograms may be added only if the product is covered by the CLP Regulation.

- **PFC 6(B) Non-Microbial Plant Biostimulant**

[name of the product]

CE **Notified body n°: XX XX XX XX (if applicable)**

PFC 6 (B) NON-MICROBIAL PLANT BIOSTIMULANT

Ingredients: Derived products within the meaning of Regulation (EC) No 1069/2009 (Animal protein hydrolysate)
Virgin material substances and mixtures (Urea - Diammonium phosphate)

Instructions for use:

Crops	Application rates (L/ha)	Application method	Application stage	Application number	Claims
Refer to the terminology specified in harmonised standards or other technical specifications	2 to 4	Foliar pulverization	From 2-4 leaves stage	1 to 3	Refer to the terminology specified in harmonised standards or other technical specifications
	4 to 6	Foliar pulverization	From vegetative growth	1 to 4	
	5 to 10	Foliar pulverization	Regrowth vegetation	2 to 5	

The product is compatible with many plant protection products. In case of mixture, it is the user responsibility to test the mixture before application. Pour last in the tank.

Farmed animal must not be fed with herbage, either directly or by grazing, with herbage, from land to which this product has been applied unless the cutting or grazing takes place after the expiry of a waiting period which is at least 21 days. Contact company or company's distributor for more specific recommendations. www.website.com

Recommended storage conditions:
Store in a dry place (see pictures).

Information on Safety and Environment [189]**:**
Wash the hands after use. Do not breathe dusts.



In case of emergency contact: XX: tel:XX-XX-XX-XX, (24/24, 7/7)

Additional Information
Poor in chloride

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Production date: see on the packaging	Type number/Batch number

[189] CLP pictograms, may be added only if the product is covered by the CLP Regulation.

Expiry date: 3 years from production date	+ notified body number (if applicable)
5 L LIQUID	ENTREPRISE S.A.S – Address. Tel: XX XX XX XX XX – Fax: XX XX XX XX XX

- **How to label the physical form of the product?**

The physical form (liquid or solid) should be indicated.

- **How to provide the relevant instructions related to the efficacy of the product, including soil management practices, chemical fertilisation, incompatibility with plant protection products, recommended spraying nozzles size, sprayer pressure and other anti-drift measures?**

The Instructions of use can be provided in a table format, as indicated in the examples in sub-section 11.1, including information such as crops, application rate, application method, application stage, application number and claims. The claimed effects should correspond to the ones indicated in the biostimulant definition, namely: nutrient use efficiency, tolerance to abiotic stress, quality traits, or availability of confined nutrients in the soil or rhizosphere. These should preferably be complemented by the claimed effects identified in harmonised standards for biostimulants.

- **How to include a statement regarding the fact that micro-organisms may have the potential to provoke sensitizing reactions?**

The label shall contain the following phrase: '*Micro-organisms may have the potential to provoke sensitising reactions*'. This phrase should be included within other hazard phrases in the label section 'Information on Safety and Environment'.

- **How to provide the production and expiry date and where to place it on the label?**

The production and expiration date should be provided on the label. The determination of the product expiry date should be up to the manufacturer. The production and expiry date can also be located directly on the package or on a folded leaflet (in case of a bulk product).

- **Specific instructions for Microbial Biostimulants**

Within the part of the label 'Declaration of content' all intentionally added micro-organisms shall be indicated. Where the micro-organism should have several strains, the intentionally added strains should be indicated. The microorganism concentration is to be expressed as the number of active units per volume or weight, or in any other manner that is relevant to the micro-organism, for example, colony forming units per gram (cfu/g).

12. SPECIFIC LABELLING REQUIREMENTS FOR PFC 7 FERTILISING PRODUCT BLEND

As stated in the FPR, all the labelling requirements applicable to all component EU fertilising products apply to the fertilising product blend. For a better understanding, labelling requirements specific to each PFC are identified below by a colour code in the labelling examples.

- **Examples of a label**

The following examples assume that the blending does not lead to a change of nature of each of the component of the respective fertilising product blends.

Example 1: Labelling of a fertilising product blend composed of 2 EU fertilising products from the same PFC (an already EU compliant PFC 1 (C) in light blue with another already EU compliant PFC 1 (C) in dark blue)

NAME OF THE PRODUCT

COMPOUND SOLID INORGANIC MACRONUTRIENT FERTILISER - STRAIGHT SOLID INORGANIC MACRONUTRIENT FERTILISER

NPK (S) 10,5-13,5-12 (30)

Mineral Fertiliser

□ Content:

10,5 % TOTAL NITROGEN (N)

10,5 % ammoniacal nitrogen (N)

13,5 % TOTAL PHOSPHORUS PENTOXIDE (P_2O_5)

9,4 % phosphorus pentoxide (P_2O_5) water soluble

13,5 % Phosphorus pentoxide (P_2O_5) soluble in neutral ammonium citrate

12 % POTASSIUM OXIDE (K_2O) water soluble

30 % SULFUR TRIOXIDE (SO_3) water soluble

Granules. 95 % of the product has a granular size between 2,0 and 4,5 mm

□ List of ingredients:

NK (S) 15-17 (43) [Ammonium sulphate CAS n° 7783-20-2, virgin material substances and mixtures - Potassium chloride CAS n° 7447-40-7, virgin material substances and mixtures] – Superphosphate concd. CAS n°65996-95-4, virgin material substances and mixtures

□ Instructions for use: *(see guidance document point 3)*

Instructions for intended use

Farmers are encouraged to avoid over-fertilisation and to take official advice while drawing fertilisation planning.

□ Recommended storage conditions: *(see guidance document point 3)*

Store under a dry and ventilated place to protect the fertilisers from sun and moisture… Refer to Safety Data Sheet section 7.2

□ Information on safety and environment:

(see guidance document point 3)

Product classified under the Regulation (EC) No 1272/2008. Refer to the corresponding safety information on the packaging. To avoid risks to human health and environment comply with the use instructions of this fertilising product.

□ Additional Information:

Low cadmium content

600 KG NET

Batch/Type number

Produced by:

Name Address

CE + notified body number (if applicable)

Designation of each claimed PFC separated by a dash or a word like "and" or "with"

Content of nutrients as expressed for the final product blend

Declaration of content as expressed for the final fertilising product blend

Declaration of granulometry as expressed for the final fertilising product blend

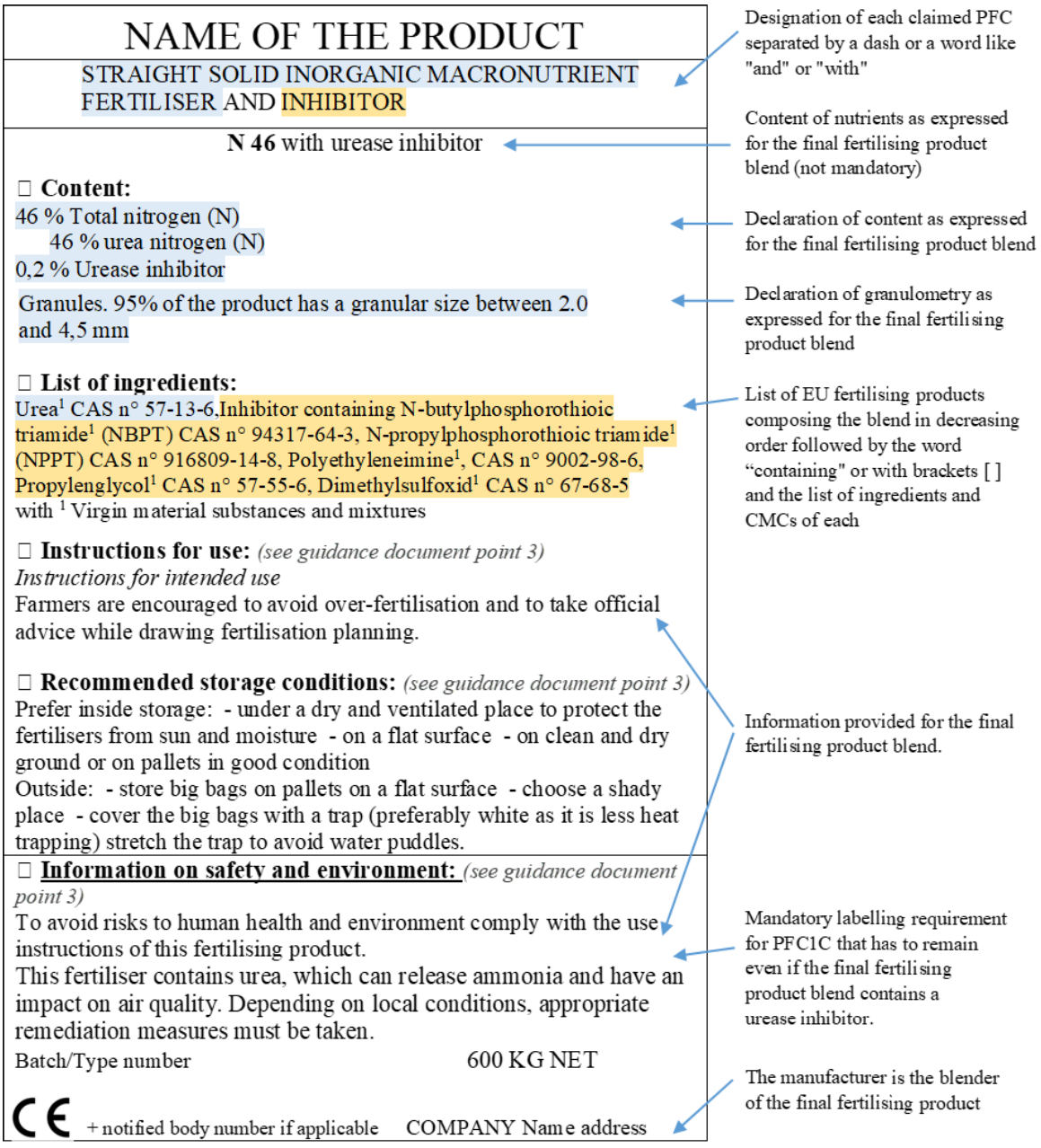
List of EU fertilising products composing the blend in decreasing order followed by the word "containing" or with brackets [ ] and the list of ingredients and CMCs of each EU fertilising product composing the final fertilising product blend

Information provided for the final fertilising product blend.

If the final fertilising product blend is classified under regulation EC n°1272/2008 CLP labelling requirement apply.

The manufacturer is the blender final fertilising product

Example 2: Labelling of a fertilising product blend of 2 claimed functions: mixture of an already EU compliant PFC 1 (C) (inorganic fertiliser) in blue with another already EU compliant PFC 5 (inhibitor) in orange



Example 3: Labelling of a fertilising product blend of 3 claimed functions: PFC 4 (growing medium) in red with a PFC 1 (C)(I) (Compound Solid Inorganic Macronutrient Fertiliser) in blue and a PFC 2 (liming material) in orange

As explained in the section 9 , any growing medium blended with one or more other PFC (for example fertiliser, liming material, biostimulants) is a fertilising product blend.

NAME OF THE PRODUCT

GROWING MEDIUM
with COMPOUND SOLID INORGANIC MACRONUTRIENT FERTILISER and LIMING MATERIAL

Content:

Electrical conductivity (EC):	50 mS/m
pH (H2O):	6.5
Nitrogen (N):	200 mg/l CAT-soluble
Phosphorous pentoxide (P2O5):	30 mg/l CAT-soluble
Potassium oxide (K2O):	180 mg/l CAT-soluble

1 kg/m³ compound solid inorganic macronutrient fertiliser NPK 14-16-18, with
14.0 % Nitrogen (N)
5.5 % Nitrate-N
8.5 % Ammoniacal-N
16.0 % Phosphorous pentoxide (P2O5)
18.0 % Potassium oxide (K2O)
fertiliser in granules of which 95% has a granular size between 2.0 and 4,5 mm

4 kg/m3 of liming material with :

Neutralising value:	54 (equivalent CaO)
Granulometry:	90 % < 1,0 mm
Total CaO:	51 % by mass
Total MgO:	2 % by mass
Reactivity:	73 %

Ingredients:

Growing medium (containing peata, wood fibresb and green compostc)

with a virgin material substances and mixtures, b Plants, plant parts and plant extracts and c compost

Designation of each claimed PFC separated by a dash or a word like "and" or "with"

Declaration of content expressed as amount per growing media volume calculated/adjusted for the final fertilising product blend

List of EU fertilising products composing the blend in decreasing order followed by the word "containing" or with brackets [ ] and the list of ingredients and CMCs of each EU fertilising product composing the final fertilising product blend

Instructions for use:

Use this product as soon as possible after purchase for growing on of vegetables, e.g. cucumbers, tomatoes, peppers, egg plants. Use this product only for the intended application and avoid misuse and mixing with other materials.
Contact the manufacturer or manufacturer's distributor for more specific recommendations.

Storage conditions:

Avoid long storage periods. This product consists of organic materials that by nature may contain saprophytic microbes. To avoid product quality alterations (e.g. N-immobilization) due to increased microbial activity, store cool and under cover. Protect from exposure to weather i.e. sunlight, precipitation and drying out. Avoid frost conditions during storage.

Information on safety and environment:

To avoid risks to human health and the environment, please comply with the recommended use instructions of this fertilising product. Do not eat. Avoid false and not intended application.

Additional information:

This fertilising product blend is for professional use. It contains all essential macro and micronutrients as well as a liming material to ensure optimal plant growth for the intended use.

Contains 1 kg/m³ of compound solid inorganic macronutrient fertiliser NPK 14-16-18 (containing ammonium nitratea CAS no 6484-52-2, potassium nitratea CAS no 7757-79-1, ammonium phosphatea CAS no 7722-76-1, magnesium sulphatea CAS no7487-88-9)
4 kg/m³ of liming materials (containing lime stone CAS no 471-34-1)

a with virgin material substances and mixtures

RPP certified
RHP certified
RAL certified

Production date: XX/XX/XXXX

Type number, batch number or other element allowing product identification
70 L (A12) NET

CE Notified body no. (if applicable)
Manufacturer's name
Manufacturer's registered trade name or trade mark

Information provided for the final fertilising product blend

Production date of the final fertilising product blend

The manufacturer is the blender of the final fertilising product

Manufacturer's postal address	

Example 4: Labelling of a fertilising product blend of 3 claimed functions: PFC 1(C) (inorganic fertiliser) in blue + PFC 2 (liming material) in orange + PFC 6(B) (non-microbial plant biostimulant) in red

NAME OF THE PRODUCT

COMPOUND SOLID INORGANIC MACRONUTRIENT FERTILISER PK (S) 14-24 (21) LIMING MATERIAL WITH NON-MICROBIAL PLANT BIOSTIMULANT

PK (Ca) (S) 8,4-14,4 (18,5) (12,6)

Content:

8,4 % Total phosphorus pentoxide (P_2O_5)
4,7 % phosphorus pentoxide (P_2O_5) soluble in formic acid
14,4 % Potassium oxide (K_2O) water soluble
30 % Total calcium oxide (CaO)
12,6 % Sulphur trioxide (SO_3) water soluble
18 Neutralising value (equivalent CaO)

Granules. 95 % of the final product has a granular size between 2,0 – 4 mm and 1 % passing through a sieve of 1,0 mm

The product contains:
20 g / kg of plant biostimulant
35 % of liming material with a reactivity (hydrochloric acid test) of 50

Instructions for use: *(see guidance document point 3)*

Crops	Application rates (kg/ha)	Application method	Application stage	Application number	Claims
Field crop	200 to 400	Soil applied	With seeding	1 to 3	Better tolerance to abiotic stress

Storage conditions: *(see guidance document point 3)*

Keep the product in its original packaging. Store at temperature between +5 °C and +25 °C

Information on safety and environment: *(see guidance document point 3)*

The product is compatible with many plant protection products. In case of mixture, it is the user responsibility to test the mixture before application. Pour last in the tank.

Ingredients: calcium carbonate[1] CAS n° 471-34-1, rock phosphate[1] , potassium sulfate[1] CAS n°7778-80-5
with [1] Virgin material substances and mixtures

Additional information:

Can be used in organic farming according to the current European legislation.
Plant biostimulant composed of… *(not mandatory)*

600 KG NET
Production date: see on the packaging
Expiry date: 3 years after production date
CE + notified body number/s (if applicable)

COMPANY – Address
Type number, batch number or other element allowing product identification

Designation of each claimed PFC separated by a dash or a word like "and" or "with"

Content of nutrients as expressed for the final product blend

Declaration of content as expressed for the final fertilising product blend

Granulometry expressed for the final fertilising product (PFC 1 C and PFC 2 requirements)

Instructions provided for the final fertilising product blend

Recommendations provided for the final fertilising product.

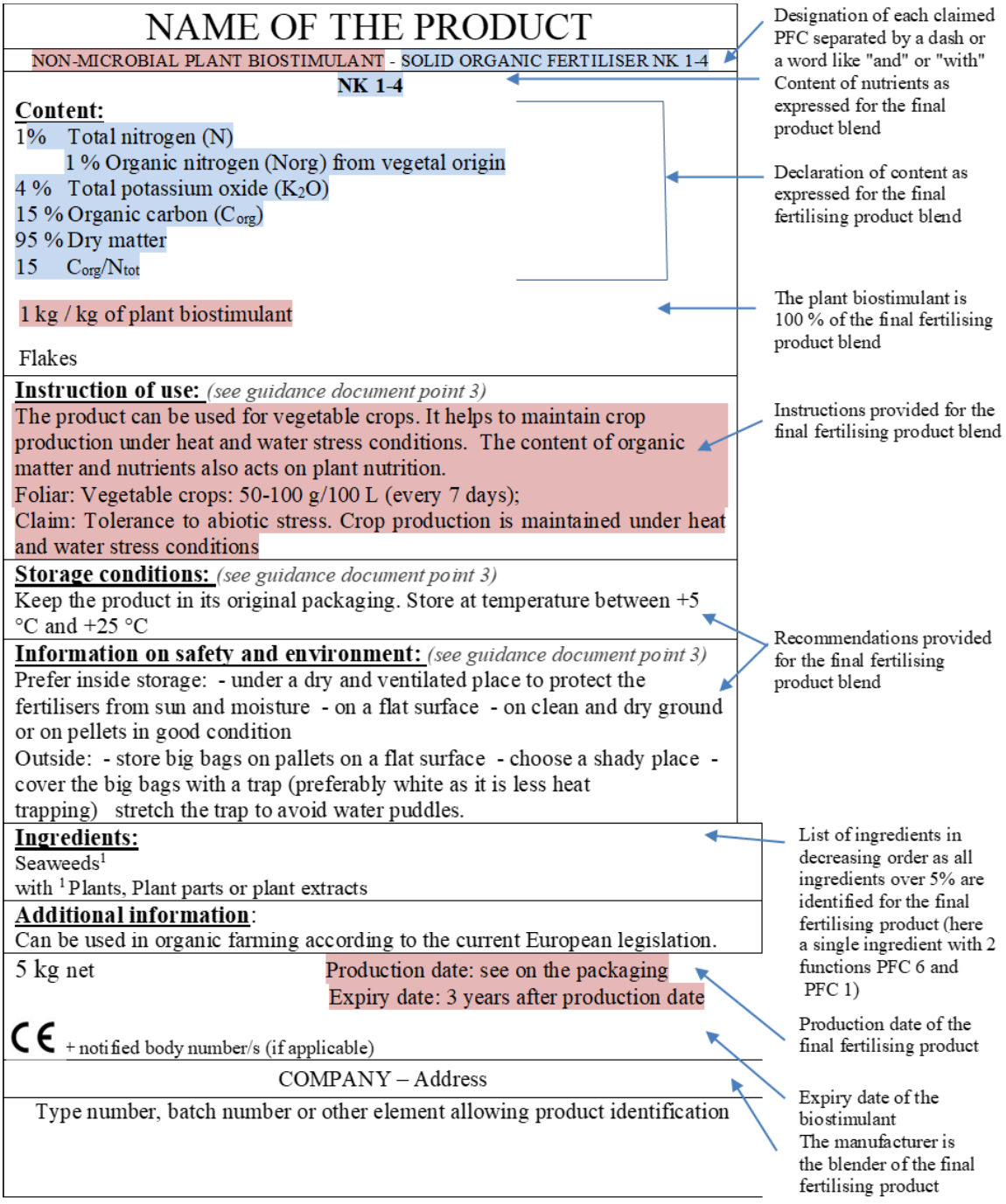
List of ingredients in decreasing order as all ingredients over 5 % are identified for the final fertilising product

Production date of the final fertilising product

Expiry date of the biostimulant

The manufacturer is the blender of the final fertilising product

Example 5: Labelling of a fertilising product blend of 2 claimed functions: PFC 6(B) (non-microbial plant biostimulant) in red and PFC 1(B) (organic fertiliser) in blue



- **How to express labelling requirements for PFC 7?**

As specified in Annex III to the FPR, labelling requirements of all component EU fertilising products apply to the fertilising product blend. They shall be expressed in relation to the final product.

If a labelling requirement applies to only one component EU fertilising product, it also applies to final fertilising product blend. In other words, a labelling requirement, which is relevant for a component, is also relevant for the entire blend.

As a general rule, labelling requirements of component EU fertilising products should be expressed for the final fertilising product blend.

If minimum content or concentrations are required for a specific component EU fertilising product of a fertilising product blend, they do not apply to the blend.

→ Example: The nutrient content of a fertilising product blend of which 10 % is a solid organic fertiliser with 4 % of total nitrogen (N) and 12% of total potassium oxide (K_2O), as declared nutrients, will be expressed for the final product blend as such:

- 0,4 % total nitrogen (N)
- 1,2 % total potassium oxide (K_2O)

The minimum content requirement of 1 % of total nitrogen for solid organic fertilisers does not apply to the fertilising product blend.

If a labelling requirement doesn't provide any useful information when expressed for the final fertilising product blend, or if it is not possible to express it for the final fertilising product blend, then it is expressed for the specific component EU fertilising product concerned. In that case, the percentage of the component EU fertilising product in the fertilising product blend is indicated.

→ Example: The labelling of reactivity of a fertilising product blend containing a liming material would be declared as follow:

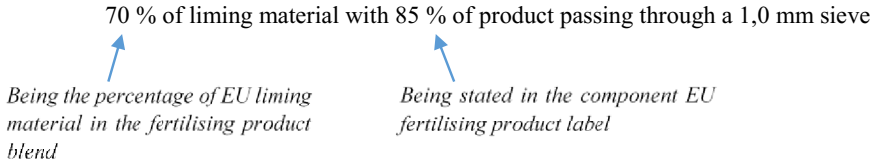
35 % of liming material with a reactivity (hydrochloric acid test) of 50

Being the percentage of EU liming material in the fertilising product blend

As mentioned in the component EU fertilising product label

If a labelling requirement is common to several component EU fertilising products, but has different ways of expression, both labelling requirements are mentioned on the label of the final fertilising product blend and expressed for each PFC respectively.

→ Example: Granulometry can be expressed as % by mass of product passing through different sieves (through a 1,0 mm sieve for liming materials and through a determined sieve for solid inorganic fertilisers that can be different than 1,0 mm). Granulometry for a fertilising product blend containing a liming material and a solid inorganic fertiliser could be labelled as follow:



If an expiry date applies for one component EU fertilising product, it will also apply for the final fertilising product blend. The expiration date should be adapted according to the final fertilising product blend and cannot be later than the one applicable to the component EU fertilising product.
If this requirement applies to several components of the EU fertilising products, the most restrictive date applies.

If a notification body number is present on one or more component EU fertilising products label, it has also to be put on the label of the final fertilising product blend with the reference of the component EU fertilising product.

→ Example: Fertilising product blend composed of EU fertilising product which went through Module D1

CE

Notified body number: 0123 (inhibitor)

The number of the notified body has to be put on the labels only for fertilising products having had their conformity assessed through Module A1 and Module D1

ANNEX 7: POLICY OPTIONS

1. PFC 1 (FERTILISER)

Label information						Policy options							
legal provision reference in Annex III	Content of the legal provision	Relavant to Regulation 2003/2003 labelling provisions	example of information to be included on the label	category	Information subject to more frequent changes	Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)	Option 2a - (Measure 2) certain information may be provided digitally (without distinction professional/ non- professional users)	Option 2b (Measure 3a) - certain information may be provided digitally for professional users	Option 2b (Measure 3b) - certain information may be provided digitally for non- professional users	Option 2c (Measure 4) - most of the information may be provided digitally (without distinction professional/non-professional users)	Option 2d (Measure 5a) - most of the information may be provided digitally for professional users	Option 2d (Measure 5b) - most of the information may be provided digitally for non- professional users	Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders)
Part I, point 1(a)	designation of the PFC	YES	**PFC 1 (c) FERTILISER INORGANIC**	AE									
Part I, point 1(c)	the quantity of the EU fertilising product, indicated by mass or volume	YES	10 Kg, 1 L	IC									
Part I, point 1(d)	Other instructions for intended use	YES (only for certain products)	suitable for foliar application	AP									
Part I, point 1(d)	frequency	YES (only for certain	apply once a week	AP									

		products)											
Part I, point 1(d)	timing	YES (only for certain products)	apply during growing season	AP									
Part I, point 1(d)	application rates	YES (only for certain products)	125 kg/hectar	AP									
Part I, point 1(d)	targeted plants or mushrooms	NO	leafy vegetables	AP									
Part I, point 1(e)	other recommended storage conditions	NO	keep the products in the original package	AP									
Part I, point 1(e)	storage conditions-temperature	NO	storing temperature 10-30 degrees C	AP									
Part I, point 1(e)	storage conditions-sunlight	NO	keep out of direct sunlight	AP									
Part I, point 1(e)	storage conditions-humidity	NO	keep in a dry space	AP									
Part I, point 1(f)	for products containing a polymer belonging to CMC 9 in Part II of Annex II, the time period following use during which the nutrient release is being controlled or the water retention capacity is being increased (the 'functionality	NO	functionality period - 4 months	AE									

	period')												
Part I, point 1(f)	for products containing a polymer belonging to CMC 9 in Part II of Annex II, tspecial use instruction	NO	Re-application during the functionality period is not allowed. Contact company or company's distributor for more specific	AE									
Part I, point 1(g)	risk management measures	NO	wash your hands after use; keep out of reach of children	S									
Part I, point 1(h)	list of all ingredients above 5 %, including the name of the substances	NO (only main components e.g. nutrients and chelating/complexing agents and inhibitors	cocoa shell, bone meal, castor cake, bentonite	IC	yes								
Part I, point 1(h)	relevant CMC	NO	CMC 2 (plant, plant parts, plant extracts)	IC									
Part I, point 1(h)	identification number of the	only for certain	CASS 65997-17-3	IC	yes								

	substance	substances												
Part I, point 3	declare the presence of a substance exceeding MRL (maximum residues limit for food or feed)	NO	clopyralid	S										
Part I, point 3	declare the content of the substance exceeding MRL	NO	0.1 mg/kg	S	yes									
Part I, point 3	warning on using the product in such a way to avoid exceeding MRL in the crop	NO	do not use in such a way as to exceed the maximum limit allowed in food or feed	S										
Part I, point 4	products derived out of animal by-products	NO	'Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days.'.	S										
Part I, point 5	for products with ricin	NO	Hazardous to animals in case of ingestion	S										
Part I, point 6	product contains unprocessed or processed cocoa	NO	Toxic to dogs and cats	S										

	shells												
Part I, point 7a	declare the presence of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials	NO		S									
Part I, point 7a	declare the content of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification	NO		S	yes								
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials or certain by- products belonging to CMC 11	NO		S									
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of selenium (Se) where the EU fertilising product contains or consists of recovered	NO		S	yes								

Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of chloride (Cl-) where the EU fertilising product contains or consists of recovered	NO		S									
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of chloride (Cl-) where the EU fertilising product contains or consists of recovered	NO		S	YES								
Part II, PFC 1(C)(I)(a), point 2	The granulometry of a solid inorganic macronutrient fertiliser shall be indicated, expressed as % by mass of the product passing through a determined sieve.	NO	Granules. 95 % of the product has a granular size between 2,0–4,5 mm.	IC									
Part II, PFC 1(A) and 1(B), point 1, d), i)	declaration of the origin of organic matter (organic nitrogen is declared)	NO	from animal and vegetal origin, of which Y % from manure	S									
Part II, PFC 1(A) and 1(B), point 1, d), v)	content of organic carbon	NO		AE	yes								
Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, (b)	Declaration of the presence of secondary nutrients calcium (Ca), magnesium (Mg), sodium (Na) or sulphur (S) by their chemical symbols in the order Ca-Mg-	YES		AE									

	Na-S;												
Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, a)	Declaration of the presence of primary nutrients: nitrogen (N), phosphorus (P) or potassium (K), by their chemical symbols in the order NPK	YES		AE									
Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, c)	the content of the declared primary nutrients total nitrogen (N), total phosphorus in the form of phosphorus pentoxide (P2O5) or total potassium in the form of potassium oxide (K2O)	YES		AE	yes								
Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, c)	the content of secondary macronutrients calcium oxide (CaO), magnesium oxide (MgO), sodium oxide (Na2O) or sulphur trioxide (SO3)	YES		AE	yes								
Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, d), i)	declaration of presence of forms of nitrogen (N)	YES	organic nitrogen, ammoniacal nitrogen	AE									

Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, d), i)	declaration of the content of various forms of nitrogen	YES		AE	YES								
Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, d), iv)	content of water-soluble calcium oxide (CaO), magnesium oxide (MgO), sodium oxide (Na2O) and sulphur trioxide (SO3)	YES		AE	yes								
Part II, PFC 1(A), 1(B) and 1(C)(I), point 1, d), iv)	presence of water-soluble calcium oxide (CaO), magnesium oxide (MgO), sodium oxide (Na2O) and sulphur trioxide (SO3)	YES		AE									
Part II, PFC 1(A), 1(B) point 1, d), vi)	dry matter	NO		IC	yes								
Part II, PFC 1(A), point 1, e)	The ratio of organic carbon in total nitrogen	NO		AE	yes								
Part II, PFC 1(A), point 1, f)	production date	NO		IC	yes								
Part II, PFC 1(A), point 1, g) and PFC 1(C)(I)(a), point 3	form of the physical unit		powder, granule	IC									
Part II, PFC 1(B) and 1(C)(I) point 1, e)	air quality impact of urea	NO	This fertiliser contains urea, which can release ammonia and have an impact on air	S									

			quality. Depending on local conditions, appropriate remediation measures must be taken. The manufacturer of this fertiliser has already taken the remediation measure of incorporating a urease inhibitor.										
Part II, PFC 1(B) and 1(C)(I), point 1, d), ii)	declaration of soluble forms of phosphorus pentoxide (P2O5)	YES	phosphorus pentoxide (P2O5) soluble in neutral ammonium citrate	AE									
Part II, PFC 1(B) and 1(C)(I), point 1, d), ii)	declaration of content of soluble forms of phosphorus pentoxide (P2O5)	YES		AE	yes								
Part II, PFC 1(B) and 1(C)(I), point 1, d), iii)	declaraton of presence of water soluble potassium oxide (K2O)	YES		AE									
Part II, PFC 1(B) and 1(C)(I), point 1, d), iii)	content of water soluble potassium oxide (K2O)	YES		AE	yes								
Part II, PFC 1(B), point 2, 1(C)(I)(a) point 5 and	declaration of the presence of micronutrients boron	YES		AE									

1(C)(I)(b) point 3	(B), cobalt (Co), iron (Fe), manganese (Mn) and molybdenum (Mo) in an organo-mineral fertiliser and an inorganic macronutrient fertiliser (name and chemical symbol)												
Part II, PFC 1(B), point 2, 1(C)(I)(a) point 5 and 1(C)(I)(b) point 3	declaration of the content of micronutrients boron (B), cobalt (Co), iron (Fe), manganese (Mn) and molybdenum (Mo) in an organo-mineral fertiliser and an inorganic macronutrient fertiliser	YES		AE	yes								
Part II, PFC 1(B), point 5(b), 1(C)(I)(a) point 8(b) and 1(C)(I)(b), point 6(b)	declaration of the presence of the water-soluble content of micronutrients in an organo-mineral fertiliser or an inorganic macronutrient fertiliser	YES (only inorganic fertilisers covered)		AE									
Part II, PFC 1(B), point 5(b), 1(C)(I)(a) point 8(b) and 1(C)(I)(b), point 6(b)	declaration of the water-soluble content of micronutrients in an organo-mineral fertiliser or an inorganic macronutrient	YES (only inorganic fertilisers covered)		AE	yes								

	fertiliser													
Part II, PFC 1(B), point 5(c), 1(C)(I)(a) point 8(c) and 1(C)(I)(b), point 6(d)	declaration of the chelating agent of micronutrients in an organo-mineral fertiliser or an inorganic macronutrient fertiliser	YES (only inorganic fertilisers covered)	EDTA	AE										
Part II, PFC 1(B), point 5(c), 1(C)(I)(a) point 8(c) and 1(C)(I)(b), point 6(d)	declaration of the amount of chelated micronutrients in an organo-mineral fertiliser or an inorganic macronutrient fertiliser	YES (only inorganic fertilisers covered)		AE	yes									
Part II, PFC 1(B), point 5(ca), 1(C)(I)(a) point 8(ca) and 1(C)(I)(b), point 6(ca)	where the declared micronutrients are chelated by chelating agent(s), the pH range guaranteeing acceptable stability	NO		AE										
Part II, PFC 1(B), point 5(d), 1(C)(I)(a) point 8(d) and 1(C)(I)(b), point 6(d)	declaration of the complexing agent of micronutrients in an organo- mineral fertiliser or an inorganic macronutrient fertiliser	YES (only inorganic fertilisers covered)	HGA	AE										

Part II, PFC 1(B), point 5(d), 1(C)(I)(a) point 8(d) and 1(C)(I)(b), point 6(d)	declaration of the amount of complexed micronutrients in an organo-mineral fertiliser or an inorganic macronutrient fertiliser	YES (only inorganic fertilisers covered)		AE	yes								
Part II, PFC 1(B), point 5(e), 1(C)(I)(a) point 8(e), 1(C)(I)(b), point 6€ and PFC 1(C)(II) point 4	caution in using organo-mineral and inorganic macronutrient fertilisers with micronutrients and inorganic micronutrient fertilisers	NO	To be used only where there is a recognised need. Do not exceed the application rate.	S									
Part II, PFC 1(B), points 3 and 4, 1(C)(I)(a) points 6-7 and 1(C)(I)(b) points 4-5	declaration of the presence of micronutrient copper (Cu) or zinc (Zn) in an organo-mineral fertiliser and an inorganic macronutrient fertiliser (name and chemical bl)	NO		S									
Part II, PFC 1(B), points 3 and 4, 1(C)(I)(a) points 6-7 and 1(C)(I)(b) points 4-5	declaration of the content of micronutrient copper (Cu) or zinc (Zn) in an organo-mineral fertiliser and an inorganic macronutrient	YES (only inorganic fertilisers covered)		S	yes								

	fertiliser												
Part II, PFC 1(C)(I)(a), point 1	A solid inorganic macronutrient fertiliser may be labelled 'complex' only if each physical unit contains all the declared nutrients in their declared content	NO		AE									
Part II, PFC 1(C)(I)(a), point 4	name of the coating agents	NO	coated with BRANDNAME® coating	AE									
Part II, PFC 1(C)(I)(a), point 4	% of fertiliser coated by each coating agent	NO		AE	yes								
Part II, PFC 1(C)(I)(a), point 4	caution in using coated fertilisers	NO	the rate of nutrient releases can vary according to the temperature (and biological activity) of the substrate. An adjustment of fertilisation may be necessary	AE									
Part II, PFC 1(C)(I)(b), point 1 and PFC 1(C)(II)(b), point 2	indication if the fertiliser is in suspension or solution	NO		IC									

Part II, PFC 1(C)(II)(a), point 1	the typology of straight inorganic micronutrient fertiliser as indicated in Annex I, Part II	YES	Micronutrient chelate fertiliser	AE									
Part II, PFC 1(C)(II)(a), point 2 and PFC 1(C)(II)(b), point 3	declaration of the content of micronutrients in a micronutrient fertiliser	YES		AE	yes								
Part II, PFC 1(C)(II)(a), point 2 and PFC 1(C)(II)(b), point 3	declaration of the water-soluble content of micronutrients in a micronutrient fertiliser	YES		AE									
Part II, PFC 1(C)(II)(a), point 2 and PFC 1(C)(II)(b), point 3	declaration of the water-soluble content of micronutrients in a micronutrient fertiliser	YES		AE	yes								
Part II, PFC 1(C)(II), point 1	declaration of the presence of micronutrients in the inorganic micronutrient fertiliser by their names and chemical symbols in the following order: boron (B), cobalt (Co), copper (Cu), iron (Fe), manganese (Mn), molybdenum (Mo)	YES (but not in a specific order)		AE									

Part II, PFC 1(C)(II), point 1	declaration of counter-ions of micronutrients in the inorganic micronutrient fertiliser	YES	sodium salt, sulphate	IC										
Part II, PFC 1(C)(II), point 2	declaration of the chelating agent of micronutrients in an inorganic micronutrient fertiliser	YES	EDTA	AE										
Part II, PFC 1(C)(II), point 2	declaration of the amount of chelated micronutrients in an inorganic micronutrient fertiliser	YES		AE	yes									
Part II, PFC 1(C)(II), point 2a	Where the declared micronutrients are chelated by chelating agent(s), the pH range guaranteeing acceptable stability shall be indicated.'	NO		AE										
Part II, PFC 1(C)(II), point 3	declaration of the complexing agent of micronutrients in an inorganic micronutrient fertiliser	YES	HGA	AE										

Part II, PFC 1(C)(II), point 3	declaration of the amount of complexed micronutrients in an inorganic micronutrient fertiliser	YES		AE	yes								
Part II, PFC 1, point 2	declare the presence of nitrogen and phosphorus content when they are not declared nutrients	NO		S									
Part II, PFC 1, point 2	content of nitrogen and phosphorus content when they are not declared nutrients	NO		S	YES								
Part II, PFC 1, point 3 (b)-(d)*	labelling of fertilisers with inhibitors - the content of inhibiting compound	YES	1,6% DMPP as % by mass of total nitrogen present as ammoniacal nitrogen and urea nitrogen	AE									
Part II, PFC 1, point 3(a)	labelling of fertilisers with inhibitors - the label shall refer to the presence of inhibitor	YES	nitrification inhibitor	AE									

* work in progress for introducing these requirements - should be applicable during summer

AE = agronomic efficiency

IC= information on content
S = safety requirements
AP = after purchase information

Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)

Option 2 (Measure 2) - certain information may be provided digitally (without distinction professional/non-professional users)

Option 3 (Measure 3a) - certain information may be provided digitally for professional users

Option 3 (Measure 3b) - certain information may be provided digitally for non-professional users

may be provided digitally
remains on the physical label

Option 4 (Measure 4)- most of the information may be provided digitally (without distinction professional/non-professional users)

Option 5 (Measure 5a) - most of the information may be provided digitally for professional users

Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users

Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders

2. PFC 2 (LIMING MATERIAL)

Label information	Policy options

legal provision reference in Annex III	Content of the legal provision	Relavant to Regulation 2003/2003 labelling provisions	example of information to be included on the label	category	Information subject to more frequent changes	Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)	Option 2a - (Measure 2) certain information may be provided digitally (without distinction professional/ non- professional users)	Option 2b (Measure 3a) - certain information may be provided digitally for professional users	Option 2b (Measure 3b) - certain information may be provided digitally for non- professional users	Option 2c (Measure 4) - most of the information may be provided digitally (without distinction professional/non-professional users)	Option 2d (Measure 5a) - most of the information may be provided digitally for professional users	Option 2d (Measure 5b) - most of the information may be provided digitally for non- professional users	Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders)
Part I, point 1(a)	designation of the PFC	YES	**PFC 2 LIMING MATERIAL**	AE									
Part I, point 1(c)	the quantity of the EU fertilising product, indicated by mass or volume	YES	25 KG net	IC									
Part I, point 1(d)	other instructions for intended use	NO	Apply uniformly and incorporate in the soil	AP									
Part I, point 1(d)	frequency	NO	once a year	AP									
Part I, point 1(d)	timing	NO	before planting	AP									
Part I, point 1(d)	application rates	NO	1500 to 4000 kg/ha	AP									
Part I, point 1(d)	targeted plants or mushrooms	NO	cereals	AP									
Part I, point 1(e)	other recommended storage conditions	NO	keep the products in the original package	AP									
Part I, point 1(e)	storage conditions-temperature	NO	storing temperature 10-30 degrees C	AP									

Part I, point 1(e)	storage conditions-sunlight	NO	keep out of direct sunlight	AP										
Part I, point 1(e)	storage conditions-humidity	NO	keep in a dry space	AP										
Part I, point 1(g)	risk management measures	NO	wash your hands after use; keep out of reach of children	S										
Part I, point 1(h)	list of all ingredients above 5 %, including the name of the substance	NO	Limestone	IC	YES									
Part I, point 1(h)	relevant CMC	NO	CMC 1 (Virgin material substances and mixtures)	IC	YES									
Part I, point 1(h)	identification number of the substance	NO	CAS No 471-34-1	IC	YES									
Part I, point 3	declare the presence of a substance exceeding MRL (maximum residues limit for food or feed)	NO	clopyralid	S										
Part I, point 3	declare the content of the substance exceeding MRL	NO	0.1 mg/kg	S	YES									
Part I, point 3	warning on using the product in such a way to avoid exceeding MRL in the crop	NO	do not use in such a way as to exceed the maximum limit allowed in food or feed	S										
Part I, point 4	products derived out of animal by- products	NO	'Farmed animals shall not be fed, either directly or by grazing, with herbage from	S										

			land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days.'.											
Part I, point 5	for products with ricin	NO	Hazardous to animals in case of ingestion	S										
Part I, point 6	product contains unprocessed or processed cocoa shells	NO	'Toxic to dogs and cats'	S										
Part I, point 7a	declare the presence of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials	NO		S										
Part I, point 7a	declare the content of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials	NO		S	YES									

Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials or certain by-products belonging to CMC 11	NO		S									
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials	NO		S	YES								
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials	NO		S									
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials	NO		S	YES								
Part II, PFC 2, first tiret	The neutralising value	YES	Neutralising value: 54 (equivalent CaO)	AE									
Part II, PFC 2, second tiret	granulometry, expressed as % by mass of product passing through a sieve of 1,0 mm;	NO (certain values was put as a product requirement; an optional labelling provision existed additionally)	90% by mass passing through a sieve of 1,0 mm	IC									

Part II, PFC 2, third tiret	total calcium oxide (CaO), expressed as % by mass;	YES	Total CaO: 51% by mass	AE	YES									
Part II, fourth tiret	total magnesium oxide (MgO), expressed as % by mass;	YES	Total MgO: 2% by mass	AE	YES									
Part II, fifth tiret	reactivity and method of determination of reactivity, except for oxide and hydroxide limes	NO (certain values was put as a product requirement; an optional labelling provision existed additionally)	Reactivity: 73% (hydrochloric acid test)	AE										

AE = agronomic efficiency
IC= information on content
S = safety requirements
AP = after purchase information

Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)

Option 2 (Measure 2) - certain information may be provided digitally (without distinction professional/non-professional users)

Option 3 (Measure 3a) - certain information may be provided digitally for professional users

Option 3 (Measure 3b) - certain information may be provided digitally for non-professional users

Option 4 (Measure 4)- most of the information may be provided digitally (without distinction professional/non-professional users)

Option 5 (Measure 5a) - most of the information may be provided digitally for professional users

Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users

Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders

may be provided digitally
remains on the physical label

3. PFC 3 (SOIL IMPROVER)

Label information					Policy options							
legal provision reference in Annex III	Content of the legal provision	example of information to be included on the label	category	Information subject to more frequent changes	Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)	Option 2a - (Measure 2) certain information may be provided digitally (without distinction professional/ non-professional users)	Option 2b (Measure 3a) - certain information may be provided digitally for professional users	Option 2b (Measure 3b) - certain information may be provided digitally for non-professional users	Option 2c (Measure 4) - most of the information may be provided digitally (without distinction professional/non-professional users)	Option 5 (Measure 5a) - most of the information may be provided digitally for professional users	Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users	Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders)
Part I, point 1(a)	designation of the PFC	**PFC 3 SOIL IMPROVER**	AE	PFC 1-6								
Part I, point 1(c)	the quantity of the EU fertilising product, indicated by mass or volume	40 tonnes	IC	except PFC 4								
Part I, point 1(d)	other instructions for intended use	Apply uniformly and incorporate in the soil	AP									
Part I, point 1(d)	frequency	once a year	AP									
Part I, point 1(d)	timing	before planting	AP									
Part I, point 1(d)	application rates	1500 to 4000 kg/ha	AP									
Part I, point 1(d)	targeted plants or mushrooms	all crops	AP									

Part I, point 1(e)	other recommended storage conditions	keep the products in the original package	AP									
Part I, point 1(e)	storage conditions-temperature	storing temperature 10-30 degrees C	AP									
Part I, point 1(e)	storage conditions-sunlight	keep out of direct sunlight	AP									
Part I, point 1(e)	storage conditions-humidity	keep in a dry space	AP									
Part I, point 1(g)	risk management measures	wash your hands after use; keep out of reach of children	S									
Part I, point 1(h)	list of all ingredients above 5 %, including the name of the substance	Bentonite	IC	YES								
Part I, point 1(h)	relevant CMC	CMC 1 (Virgin material substances and mixtures)	IC									
Part I, point 1(h)	identification number of the substance	CAS no 1302-78-9	IC	YES								
Part I, point 3	declare the presence of a substance exceeding MRL (maximum residues limit for food or feed)	clopyralid	S									
Part I, point 3	declare the content of the substance exceeding MRL	0.1 mg/kg	S	YES								
Part I, point 3	warning on using the product in such a way to avoid exceeding MRL in the crop	do not use in such a way as to exceed the maximum limit allowed in food or feed	S									

Part I, point 4	products derived out of animal by-products	'Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days.'.	S									
Part I, point 5	for products with ricin	Hazardous to animals in case of ingestion	S									
Part I, point 6	product contains unprocessed or processed cocoa shells	'Toxic to dogs and cats'	S									
Part I, point 7a	declare the presence of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials		S									
Part I, point 7a	declare the content of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials	4 % manganese (Mn)	S	YES								

Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials or certain by-products belonging to CMC 11		S									
Part I, point 7b* and Article 4 of Regulation on safety and agronomic efficiency criteria for by-products*	declare the content of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials		S	YES								
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials		S									
Part I, point 7b* and Article 4 of Regulation on safety and agronomic efficiency criteria for by-products*	declare the content of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials		S	YES								
Part II, PFC 3, point 1	declare dry matter as % of mass	90 % by mass	IC	YES								

Part II, PFC 3, point 2	declare the presence of nitrogen (N), phosphorous pentoxide (P2O5) and potassium oxide (K2O) as a % of mass if exceedig 5% by mass		S										
Part II, PFC 3, point 2	declare the content of nitrogen (N), phosphorous pentoxide (P2O5) and potassium oxide (K2O) as a % of mass if exceedig 5% by mass		S	YES									
Part II, PFC 3(A), first tyret	pH	8,5	IC										
Part II,PFC 3(A), second tyret	electrical conductivity given as mS/m	220 mS/m	AE										
Part II, PFC 3(A), third tyret	organic carbon content as % by mass	15,7 % by mass	AE	YES									
Part II, PFC 3(A), fourth tyret	declare the presence of organic nitrogen		IC										
Part II, PFC 3(A), fourth tyret	content of organic nitrogen		IC	YES									
Part II, PFC 3(A), fourth tyret	describe origin of organic matter	organic matter of peat origin, from animal and vegetal origin, of which Y % from manure	S										
Part II, PFC 3(A), fifth tyret	ratio organic carbon to total nitrogen (Corg/N)	16	IC	YES									

AE = agronomic efficiency
IC= information on content
S = safety requirements
AP = after purchase information

Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)

Option 2 (Measure 2) - certain information may be provided digitally (without distinction professional/non-professional users)

Option 3 (Measure 3a) - certain information may be provided digitally for professional users

Option 3 (Measure 3b) - certain information may be provided digitally for non-professional users

may be provided digitally
remains on the physical label

Option 4 (Measure 4)- most of the information may be provided digitally (without distinction professional/non-professional users)

Option 5 (Measure 5a) - most of the information may be provided digitally for professional users

Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users

Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders

4. PFC 4 (GROWING MEDIUM)

Label information					Policy options							
legal provision reference in Annex III	Content of the legal provision	example of information to be included on the label	category	Information subject to more frequent changes	Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)	Option 2a - (Measure 2) certain information may be provided digitally (without distinction professional/ non- professional users)	Option 2b (Measure 3a) - certain information may be provided digitally for professional users	Option 2b (Measure 3b) - certain information may be provided digitally for non- professional users	Option 2c (Measure 4) - most of the information may be provided digitally (without distinction professional/non-professional users)	Option 2d (Measure 5a) - most of the information may be provided digitally for professional users	Option 2d (Measure 5b) - most of the information may be provided digitally for non- professional users	Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders)
Part I, point 1(a)	designation of the PFC	**PFC 4 GROWING MEDIUM**	AE									
Part I, point 1(d)	other instructions for intended use	Add water before adding the seeds	AP									
Part I, point 1(d)	frequency		AP									
Part I, point 1(d)	timing	period for planting - spring, autumn	AP									
Part I, point 1(d)	application rates	Mix 50% with soil from your garden	AP									
Part I, point 1(d)	targeted plants or mushrooms	leafy vegetables; tullips	AP									
Part I, point 1(e)	other recommended storage conditions		AP									
Part I, point 1(e)	storage conditions - temperature	store at 20 degrees C	AP									
Part I, point 1(e)	storage conditions - place	keep the products in the original package	AP									
Part I, point 1(e)	storage conditions - sunlight	keep out of direct sunlight	AP									

Part I, point 1(e)	storage conditions - humidity	keep in a dry place	AP									
Part I, point 1(g)	risk management measures	wash your hands after use; keep out of reach of children	S									
Part I, point 1(h)	list of all ingredients above 5 %, including the name of the substance	stone wool, peat, plants,	S	YES								
Part I, point 1(h)	relevant CMC	virgin material substances or mixtures	IC									
Part I, point 1(h)	identification number of the substance	CASS 65997-17-3	IC	YES								
Part I, point 3	declare the presence of a substance exceeding MRL (maximum residues limit for food or feed)	clopyralid	S									
Part I, point 3	declare the content of the substance exceeding MRL	0.1 mg/kg	S	YES								
Part I, point 3	warning on using the product in such a way to avoid exceeding MRL in the crop	do not use in such a way as to exceed the maximum limit allowed in food or feed										
Part I, point 4	products derived out of animal by- products	'Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days.'.	S									
Part I, point 5	for products with ricin	Hazardous to animals in case of ingestion	S									
Part I, point 6	product contains unprocessed or	'Toxic to dogs and cats'	S									

	processed cocoa shells											
Part I, point 7	polymer bas d binding material or mineral growing medium - instructions not to use in contact with soil	do not use in contact with soil	S									
Part I, point 7	polymer based binding material or mineral growing medium - instructions on safe disposal	make sure of a sound disposal of the product after end of use, in collaboration with the manufacturer	S									
Part I, point 7a	declare the presence of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials		S									
Part I, point 7a	declare the content of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials		S	YES								
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials or certain by-products belonging to CMC 11		S									

Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials		S	YES									
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials		S										
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials		S	YES									
Part II, PFC 4, first tiret	electrical conductivity given as mS/m, except for mineral wool;	1.0-2.0 mmhos/cm	AE										
Part II, PFC 4, second tiret	pH	pH (H2O) 6,0	AE										
Part II, PFC 4, third tiret	special provision on quantity	1 PCE: length 133 cm, width 15 cm, height 10 cm	IC										
Part II, PFC 4, fourth tiret	declare the presence of nitrogen (N), phosphorus pentoxide (P2O5) or potassium oxide (K2O) extractable by CaCl2/DTPA (calcium chloride/ diethylenetriaminepenta acetic acid; 'CAT-soluble'),	nitrogen (N) extractable by CaCl2/DTPA	AE										

Part II, PFC 4, fifth tiret	declare the content of nitrogen (N), phosphorus pentoxide (P2O5) or potassium oxide (K2O) extractable by CaCl2/DTPA (calcium chloride/ diethylenetriaminepenta acetic acid; 'CAT-soluble'),	phosphorus pentoxide (P2O5) extractable by CaCl2/DTPA 30 mg/l	AE	YES									
Part II, PFC 4, seventh tiret	production date	11 March 2022	IC	YES									

AE = agronomic efficiency
IC= information on content
S = safety requirements
AP = after purchase information

Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)

Option 2 (Measure 2) - certain information may be provided digitally (without distinction professional/non-professional users)

Option 3 (Measure 3a) - certain information may be provided digitally for professional users

Option 3 (Measure 3b) - certain information may be provided digitally for non-professional users

may be provided digitally
remains on the physical label

Option 4 (Measure 4)- most of the information may be provided digitally (without distinction professional/non-professional users)

Option 5 (Measure 5a) - most of the information may be provided digitally for professional users

Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users

Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders

5. PFC 5 (INHIBITOR)

Label information					Policy options							
legal provision reference in Annex III	Content of the legal provision	example of information to be included on the label	category	Information subject to more frequent changes	Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)	Option 2a - (Measure 2) certain information may be provided digitally (without distinction professional/ non-professional users)	Option 2b (Measure 3a) - certain information may be provided digitally for professional users	Option 2b (Measure 3b) - certain information may be provided digitally for non- professional users	Option 2c (Measure 4) - most of the information may be provided digitally (without distinction professional/non-professional users)	Option 2d (Measure 5a) - most of the information may be provided digitally for professional users	Option 2d (Measure 5b) - most of the information may be provided digitally for non- professional users	Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders)
Part I, point 1(a)	designation of the PFC	**PFC 5 INHIBITORS**	AE									
Part I, point 1(c)	the quantity of the EU fertilising product, indicated by mass or volume		IC									
Part I, point 1(d)	other instructions for intended use	can be added to a fertiliser with 50% of nitrogen out of nitrogen from urea	AP									
Part I, point 1(e)	other recommended storage conditions	Keep in the original packaging	AP									
Part I, point 1(e)	storage conditions-temperature	keep at a temperature between 5-35 degrees C	AP									
Part I, point 1(e)	storage conditions-sunlight	keep out of direct sunlight	AP									
Part I, point 1(e)	storage conditions-humidity	keep in a dry space	AP									
Part I, point 1(g)	risk management measures (human,animal, plant health/ safety or environment)	wash your hands after use; keep out of reach of children	S									
Part I, point 1(h)	relevant CMC	CMC 1 virgin material substances and mixtures	IC									

Part I, point 1(h)	identification number of the substance	CASS nr 7664-38-2	IC										
Part I, point 3	declare the presence of a substance exceeding MRL (maximum residues limit for food or feed)	clopyralid	S										
Part I, point 3	declare the content of the substance exceeding MRL	0.1 mg/kg	S	YES									
Part I, point 3	warning on using the product in such a way to avoid exceeding MRL in the crop	do not use in such a way as to exceed the maximum limit allowed in food or feed											
Part II, PFC 5	All ingredients declared in descending order of magnitude		IC	YES									
Part II, PFC 5, point 2*	declaration of content of inhibiting compounds		AE	YES									
Part II, PFC 5, point 3(a)*	use instructions - types of fertilisers with which the inhibitor may be mixed		AE										
Part II, PFC 5, point 3(b)*	use instrutions - minimum and maximum concentration inhibiting compounds when mixed with a fertiliser		AE										

* work in progress for introducing these requirements - should be applicable during summer

AE = agronomic efficiency
IC= information on content
S = safety requirements
AP = after purchase information

Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)

Option 2 (Measure 2) - certain information may be provided digitally (without distinction professional/non-professional users)

Option 3 (Measure 3a) - certain information may be provided digitally for professional users

Option 3 (Measure 3b) - certain information may be provided digitally for non-professional users

may be provided digitally
remains on the physical label

Option 4 (Measure 4)- most of the information may be provided digitally (without distinction professional/non-professional users)

Option 5 (Measure 5a) - most of the information may be provided digitally for professional users

Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users

Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders

6. PFC 6 (PLANT BIOSTIMULANT)

Label information					Policy options							
legal provision reference in Annex III	Content of the legal provision	example of information to be included on the label	category	Information subject to more frequent changes	Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)	Option 2a - (Measure 2) certain information may be provided digitally (without distinction professional/ non-professional users)	Option 2b (Measure 3a) - certain information may be provided digitally for professional users	Option 2b (Measure 3b) - certain information may be provided digitally for non-professional users	Option 2c (Measure 4) - most of the information may be provided digitally (without distinction professional/non-professional users)	Option 5 (Measure 5a) - most of the information may be provided digitally for professional users	Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users	Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders)
Part I, point 1(a)	designation of the PFC	**PFC 6: PLANT BIOSTIMULANT**	AE									
Part I, point 1(c)	the quantity of the EU fertilising product, indicated by mass or volume		IC									
Part I, point 1(d)	other instructions for intended use		AP									
Part I, point 1(d)	frequency	once every three weeks	AP									

Part I, point 1(d)	timing	top dress stage	AP										
Part I, point 1(d)	application rates	1 L/ha	AP										
Part I, point 1(d)	targeted plants or mushrooms		AP										
Part I, point 1(e)	other recommended storage conditions	keep the products in the original package	AP										
Part I, point 1(e)	storage conditions-temperature	protect from freezing	AP										
Part I, point 1(e)	storage conditions-sunlight	keep out of direct sunlight	AP										
Part I, point 1(e)	storage conditions-humidity	keep in a dry place	AP										
Part I, point 1(g)	risk management measures	wash your hands after use; keep out of reach of children	S										
Part I, point 1(h)	list of all ingredients above 5 %, including the name of the substance		IC	YES									
Part I, point 1(h)	relevant CMC		IC										
Part I, point 1(h)	identification number of the substance		IC	YES									
Part I, point 3	declare the presence of a substance exceeding MRL (maximum residues limit for food or feed)	clopyralid	S										
Part I, point 3	declare the content of the substance exceeding MRL	0.1 mg/kg	S	YES									
Part I, point 3	warning on using the product in such a way to avoid exceeding MRL in the crop	do not use in such a way as to exceed the maximum limit allowed in food or feed											

Part I, point 4	products derived out of animal by-products	'Farmed animals shall not be fed, either directly or by grazing, with herbage from land to which the product has been applied unless the cutting or grazing takes place after the expiry of a waiting period of at least 21 days.'	S									
Part I, point 5	for products with ricin	Hazardous to animals in case of ingestion	S									
Part I, point 6	product contains unprocessed or processed cocoa shells	'Toxic to dogs and cats'	S									
Part I, point 7a	declare the presence of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials		S									
Part I, point 7a	declare the content of manganese (Mn) where the EU fertilising product contains or consists of thermal oxidation materials and derivates or pyrolysis or gasification materials		S	YES								
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials or certain by-products belonging to CMC 11		S									

Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of selenium (Se) where the EU fertilising product contains or consists of recovered high purity materials		S	YES									
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the presence of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials		S										
Part I, point 7b* and Article 4 of Regulation on safety and argonomic efficiency criteria for by-products*	declare the content of chloride (Cl-) where the EU fertilising product contains or consists of recovered high purity materials		S	YES									
Part II, PFC 6, point (a)	physical form	liquid	IC										
Part II, PFC 6, point (b)	production date		IC	YES									
Part II, PFC 6, point (b)	expiry date		AE	YES									
Part II, PFC 6, point (c)	application methods	via irrigation water	AP										
Part II, PFC 6, point (d)	effect claimed for each target plant	improves nutrient use efficiency	AE										
Part II, PFC 6, point (e)	specific use instructions - relevant product efficacy-related instructions	perform a compatibility test before application	AP										

Part II, PFC 6, point (e)	specific use instructions - soil management		AP									
Part II, PFC 6, point (e)	specific use instructions - chemical fertilisation	compatible with liquid fertillisers	AP									
Part II, PFC 6, point (e)	specific use instructions - incompatibility with plant protection products	do not mix with bactericides	AP									
Part II, PFC 6, point (e)	specific use instructions - recommended spraying nozzle sizes		AP									
Part II, PFC 6, point (e)	specific use instructions - sprayer pressure		AP									
Part II, PFC 6, point (e)	specific use instructions - other anti-drift measures		AP									
Part II, PFC 6(A), first para	All intentionally added micro-organisms to be indicated		AE									
Part II, PFC 6(A), first para	where relevant, strains shall be indicated		AE									
Part II, PFC 6(A), first para	Concentration of micro-organisms	1x10 7 CFU/ml	AE									
Part II, PFC 6(A), second para	caution statement	Micro-organisms may have the potential to provoke sensitising reactions	S									

* work in progress for introducing these requirements - should be applicable during summer

AE = agronomic efficiency

IC= information on content

S = safety requirements

AP = after purchase information

Options 0 and 1 (Measure 1) - no regulatory changes (all information is provided on the label/accompanying document/leaflet)

Option 2 (Measure 2) - certain information may be provided digitally (without distinction professional/non-professional users)

may be provided digitally
remains on the physical label

Option 3 (Measure 3a) - certain information may be provided digitally for professional users

Option 3 (Measure 3b) - certain information may be provided digitally for non-professional users

Option 4 (Measure 4)- most of the information may be provided digitally (without distinction professional/non-professional users)

Option 5 (Measure 5a) - most of the information may be provided digitally for professional users

Option 5 (Measure 5b) - most of the information may be provided digitally for non-professional users

Option 3 (Measure 6) - all information is provided digitally for certain categories of products (products sold in bulk, products for industrial users - blenders

ANNEX 8: EXAMPLE OF POLICY OPTIONS (PHYICAL LABELS)

1. POLICY OPTION 1 – FULL PHYSICAL LABEL

COMPOUND SOLID INORGANIC MACRO NUTRIENT FERTILISER

NPK (Mg) Mineral Fertiliser with micronutrients, 18-11-18(+2.5)/18-4.8-14.9(+1.5)

18 % TOTAL NITROGEN (N)

9.9% Nitric nitrogen, 7.7% Ammoniacal nitrogen, 0.4% Urea nitrogen.

11% TOTAL PHOSPHORUS PENTOXIDE (P205) (=4.8% P)

11 % water-soluble Phosphorus pentoxide (P2O5) (=4.8% P)

11% Phosphorus pentoxide (P2O5) (= 4.8% P) soluble in neutral ammonium citrate

18% POTASSIUM OXIDE (K20) (=14.9% K) Water soluble.

2.5% MAGNESIUM OXIDE (MgO) 1.5% Mg) Water soluble.

Poor in chloride.

Micronutrients are completely water soluble: 0.010% Boron (B), as Boric Acid / 0.010% Copper (Cu), chelated by EDTA / 0.100% Iron (Fe), chelated by EDTA / 0.040 % Manganese (Mn), chelated by EDTA / 0.001% Molybdenum (Mo), as Sodium Molybdate / 0.010 % Zinc (Zn), chelated by EDTA

pH range guaranteeing acceptable stability of chelated fraction: Cu 1.5-10; Fe 1.5-6.5; Mn 3-10; Zn 2-19.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Ingredients: Potassium nitrate (7757-91-1) 1, Monoammonium phosphate (7722-76-1)

1, Magnesium sulphate (7778-80-5)1

1) Virgin material substances and mixtures

Storage conditions: Prefers inside storage. Keep the product in its original packaging, in a dry and well-ventilated space out of direct sunlight, on clean and dry ground or pellets. Store at temperature between +0C and +40C.

Granulometry: Combination of powder and prills. 63 % of the product passes through sieve of 1 mm and the remaining 37 % through sieve of 4 mm.

Instructions for use: recommendation for shrubs and small trees. Can be used for container

Nursery Stock and potted plants. 0.5-2.0 g/L irrigation water to the plant. Dosage rate depending on interval or continuous feeding program and requirements. Contact HP Fertilisers or our local distributor for specific recommendations. Apply lower rates in greenhouses or under hot climate conditions.

To be used only where there is recognised need. Do not exceed appropriate rate.

DANGER: 1-1318: Causes serious eye damage. H272: May intensify fire; oxidiser. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep/ Stole away from clothing/combustible materials. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

Batch/Type number	25 KG NET
CE + notified body number if applicable	COMPANY Name address

2. POLICY OPTION 2A – CERTAIN INFORMATION MOVES DIGITALLY (TEXT IN GREEN MAY BE PROVIDED DIGITALLY)

COMPOUND SOLID INORGANIC MACRO NUTRIENT FERTILISER

NPK (Mg) Mineral Fertiliser with micronutrients, 18-11-18(+2.5)/18-4.8-14.9(+1.5)

18 % TOTAL NITROGEN (N)

9.9% Nitric nitrogen, 7.7% Ammoniacal nitrogen, 0.4% Urea nitrogen.

11% TOTAL PHOSPHORUS PENTOXIDE (P205) (=4.8% P)

11 % water-soluble Phosphorus pentoxide (P2O5) (=4.8% P)

11% Phosphorus pentoxide (P2O5) (= 4.8% P) soluble in neutral ammonium citrate

18% POTASSIUM OXIDE (K20) (=14.9% K) Water soluble.

2.5% MAGNESIUM OXIDE (MgO) 1.5% Mg) Water soluble.

Poor in chloride.

Micronutrients are completely water soluble: 0.010% Boron (B), as Boric Acid / 0.010% Copper (Cu), chelated by EDTA / 0.100% Iron (Fe), chelated by EDTA / 0.040 % Manganese (Mn), chelated by EDTA / 0.001% Molybdenum (Mo), as Sodium Molybdate / 0.010 % Zinc (Zn), chelated by EDTA

pH range guaranteeing acceptable stability of chelated fraction: Cu 1.5-10; Fe 1.5-6.5; Mn 3-10; Zn 2-19.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Ingredients: Potassium nitrate (7757-91-1) 1, Monoammonium phosphate (7722-76-1)

1, Magnesium sulphate (7778-80-5)1

1) Virgin material substances and mixtures

Storage conditions: Prefer inside storage. Keep the product in its original packaging, in a dry and well-ventilated space out of direct sunlight, on clean and dry ground or pellets. Store at temperature between +0C and +40C.

Granulometry: Combination of powder and prills. 63 % of the product passes through sieve of 1 mm and the remaining 37 % through sieve of 4 mm.

Instructions for use: recommendation for shrubs and small trees. Can be used for container

Nursery Stock and potted plants. 0.5-2.0 g/L irrigation water to the plant. Dosage rate depending on interval or continuous feeding program and requirements. Contact HP Fertilisers or our local distributor for specific recommendations. Apply lower rates in greenhouses or under hot climate conditions.

To be used only where there is recognised need. Do not exceed appropriate rate.

DANGER: 1-1318: Causes serious eye damage. H272: May intensify fire; oxidiser. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking. P220: Keep/ Stole away from clothing/combustible materials. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

Batch/Type number	25 KG NET
CE + notified body number if applicable	COMPANY
Name address	

3. POLICY OPTION2C – MOST OF THE INFORMATION MOVED DIGITALLY (TEXT IN GREEN IS ALLOWED TO GO DIGITAL)

COMPOUND SOLID INORGANIC MACRO NUTRIENT FERTILISER

NPK (Mg) Mineral Fertiliser with micronutrients, 18-11-18(+2.5)/18-4.8-14.9(+1.5)

18 % TOTAL NITROGEN (N)

9.9% Nitric nitrogen, 7.7% Ammoniacal nitrogen, 0.4% Urea nitrogen.

11% TOTAL PHOSPHORUS PENTOXIDE (P205) (=4.8% P)

11 % water-soluble Phosphorus pentoxide (P2O5) (=4.8% P)

11% Phosphorus pentoxide (P2O5) (= 4.8% P) soluble in neutral ammonium citrate

18% POTASSIUM OXIDE (K20) (=14.9% K) Water soluble.

2.5% MAGNESIUM OXIDE (MgO) 1.5% Mg) Water soluble.

Poor in chloride.

Micronutrients are completely water soluble: 0.010% Boron (B), as Boric Acid / 0.010% Copper (Cu), chelated by EDTA / 0.100% Iron (Fe), chelated by EDTA / 0.040 % Manganese (Mn), chelated by EDTA / 0.001% Molybdenum (Mo), as Sodium Molybdate / 0.010 % Zinc (Zn), chelated by EDTA

pH range guaranteeing acceptable stability of chelated fraction: Cu 1.5-10; Fe 1.5-6.5; Mn 3-10; Zn 2-19.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Ingredients: Potassium nitrate (7757-91-1) 1, Monoammonium phosphate (7722-76-1)

1, Magnesium sulphate (7778-80-5)1

1) Virgin material substances and mixtures

Storage conditions: Prefers inside storage. Keep the product in its original packaging, in a dry and well-ventilated space out of direct sunlight, on clean and dry ground or pellets. Store at temperature between + 0 ^{o}C and +40 ^{o}C.

Granulometry: Combination of powder and prills. 63 % of the product passes through sieve of 1 mm and the remaining 37 % through sieve of 4 mm.

Instructions for use: recommendation for shrubs and small trees. Can be used for container

Nursery Stock and potted plants. 0.5-2.0 g/L irrigation water to the plant. Dosage rate depending on interval or continuous feeding program and requirements. Contact HP Fertilisers or our local distributor for specific recommendations. Apply lower rates in greenhouses or under hot climate conditions.

To be used only where there is recognised need. Do not exceed appropriate rate.

DANGER: 1-1318: Causes serious eye damage. H272: May intensify fire; oxidiser. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep/ Stole away from clothing/combustible materials. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

Batch/Type number	25 KG NET
CE + notified body number if applicable	COMPANY
Name address	

4. POLICY OPTION 2B - PROFESSIONAL USERS - MEASURE 3A (TEXT IN GREEN IS ALLOWED TO GO DIGITAL)

COMPOUND SOLID INORGANIC MACRO NUTRIENT FERTILISER

NPK (Mg) Mineral Fertiliser with micronutrients, 18-11-18(+2.5)/18-4.8-14.9(+1.5)

18 % TOTAL NITROGEN (N)

9.9% Nitric nitrogen, 7.7% Ammoniacal nitrogen, 0.4% Urea nitrogen.

11% TOTAL PHOSPHORUS PENTOXIDE (P205) (=4.8% P)

11 % water-soluble Phosphorus pentoxide (P2O5) (=4.8% P)

11% Phosphorus pentoxide (P2O5) (= 4.8% P) soluble in neutral ammonium citrate

18% POTASSIUM OXIDE (K20) (=14.9% K) Water soluble.

2.5% MAGNESIUM OXIDE (MgO) 1.5% Mg) Water soluble.

Poor in chloride.

Micronutrients are completely water soluble: 0.010% Boron (B), as Boric Acid / 0.010% Copper (Cu), chelated by EDTA / 0.100% Iron (Fe), chelated by EDTA / 0.040 % Manganese (Mn), chelated by EDTA / 0.001% Molybdenum (Mo), as Sodium Molybdate / 0.010 % Zinc (Zn), chelated by EDTA

pH range guaranteeing acceptable stability of chelated fraction: Cu 1.5-10; Fe 1.5-6.5; Mn 3-10; Zn 2-19.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Ingredients: Potassium nitrate (7757-91-1) 1, Monoammonium phosphate (7722-76-1)

1, Magnesium sulphate (7778-80-5)1

1) Virgin material substances and mixtures

Storage conditions: Prefers inside storage. Keep the product in its original packaging, in a dry and well-ventilated space out of direct sunlight, on clean and dry ground or pellets. Store at temperature between + 0 ºC and +40 ºC.

Granulometry: Combination of powder and prills. 63 % of the product passes through sieve of 1 mm and the remaining 37 % through sieve of 4 mm.

Instructions for use: recommendation for shrubs and small trees. Can be used for container

Nursery Stock and potted plants. 0.5-2.0 g/L irrigation water to the plant. Dosage rate depending on interval or continuous feeding program and requirements. Contact HP Fertilisers or our local distributor for specific recommendations. Apply lower rates in greenhouses or under hot climate conditions.

To be used only where there is recognised need. Do not exceed appropriate rate.

DANGER: 1-1318: Causes serious eye damage. H272: May intensify fire; oxidiser. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep/ Stole away from clothing/combustible materials. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

Batch/Type number	25 KG NET
CE + notified body number if applicable	COMPANY
Name address	

5. POLICY OPTION 2E - PROFESSIONAL USERS - MEASURE 5A (TEXT IN GREEN IS ALLOWED TO GO DIGITAL)

COMPOUND SOLID INORGANIC MACRO NUTRIENT FERTILISER

NPK (Mg) Mineral Fertiliser with micronutrients, 18-11-18(+2.5)/18-4.8-14.9(+1.5)

18 % TOTAL NITROGEN (N)

9.9% Nitric nitrogen, 7.7% Ammoniacal nitrogen, 0.4% Urea nitrogen.

11% TOTAL PHOSPHORUS PENTOXIDE (P205) (=4.8% P)

11 % water-soluble Phosphorus pentoxide (P2O5) (=4.8% P)

11% Phosphorus pentoxide (P2O5) (= 4.8% P) soluble in neutral ammonium citrate

18% POTASSIUM OXIDE (K20) (=14.9% K) Water soluble.

2.5% MAGNESIUM OXIDE (MgO) 1.5% Mg) Water soluble.

Poor in chloride.

Micronutrients are completely water soluble: 0.010% Boron (B), as Boric Acid / 0.010% Copper (Cu), chelated by EDTA / 0.100% Iron (Fe), chelated by EDTA / 0.040 % Manganese (Mn), chelated by EDTA / 0.001% Molybdenum (Mo), as Sodium Molybdate / 0.010 % Zinc (Zn), chelated by EDTA

pH range guaranteeing acceptable stability of chelated fraction: Cu 1.5-10; Fe 1.5-6.5; Mn 3-10; Zn 2-19.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Ingredients: Potassium nitrate (7757-91-1) 1, Monoammonium phosphate (7722-76-1)

1, Magnesium sulphate (7778-80-5)1

1) Virgin material substances and mixtures

Storage conditions: Prefers inside storage. Keep the product in its original packaging, in a dry and well-ventilated space out of direct sunlight, on clean and dry ground or pellets. Store at temperature between + 0 ^{o}C and +40 ^{o}C.

Granulometry: Combination of powder and prills. 63 % of the product passes through sieve of 1 mm and the remaining 37 % through sieve of 4 mm.

Instructions for use: recommendation for shrubs and small trees. Can be used for container

Nursery Stock and potted plants. 0.5-2.0 g/L irrigation water to the plant. Dosage rate depending on interval or continuous feeding program and requirements. Contact HP Fertilisers or our local distributor for specific recommendations. Apply lower rates in greenhouses or under hot climate conditions.

To be used only where there is recognised need. Do not exceed appropriate rate.

DANGER: 1-1318: Causes serious eye damage. H272: May intensify fire; oxidiser. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep/ Stole away from clothing/combustible materials. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

Batch/Type number	25 KG NET
CE + notified body number if applicable	COMPANY
Name address	

6. POLICY OPTION 2B – NON-PROFESSIONAL USERS - MEASURE 3B (TEXT IN GREEN IS ALLOWED TO GO DIGITAL)

COMPOUND SOLID INORGANIC MACRO NUTRIENT FERTILISER

NPK (Mg) Mineral Fertiliser with micronutrients, 18-11-18(+2.5)/18-4.8-14.9(+1.5)

18 % TOTAL NITROGEN (N)

9.9% Nitric nitrogen, 7.7% Ammoniacal nitrogen, 0.4% Urea nitrogen.

11% TOTAL PHOSPHORUS PENTOXIDE (P205) (=4.8% P)

11 % water-soluble Phosphorus pentoxide (P2O5) (=4.8% P)

11% Phosphorus pentoxide (P2O5) (= 4.8% P) soluble in neutral ammonium citrate

18% POTASSIUM OXIDE (K20) (=14.9% K) Water soluble.

2.5% MAGNESIUM OXIDE (MgO) 1.5% Mg) Water soluble.

Poor in chloride.

Micronutrients are completely water soluble: 0.010% Boron (B), as Boric Acid / 0.010% Copper (Cu), chelated by EDTA / 0.100% Iron (Fe), chelated by EDTA / 0.040 % Manganese (Mn), chelated by EDTA / 0.001% Molybdenum (Mo), as Sodium Molybdate / 0.010 % Zinc (Zn), chelated by EDTA

pH range guaranteeing acceptable stability of chelated fraction: Cu 1.5-10; Fe 1.5-6.5; Mn 3-10; Zn 2-19.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Ingredients: Potassium nitrate (7757-91-1) 1, Monoammonium phosphate (7722-76-1)

1, Magnesium sulphate (7778-80-5)1

1) Virgin material substances and mixtures

Storage conditions: Prefers inside storage. Keep the product in its original packaging, in a dry and well-ventilated space out of direct sunlight, on clean and dry ground or pellets. Store at temperature between + 0 ºC and +40 ºC.

Granulometry: Combination of powder and prills. 63 % of the product passes through sieve of 1 mm and the remaining 37 % through sieve of 4 mm.

Instructions for use: recommendation for shrubs and small trees. Can be used for container

Nursery Stock and potted plants. 0.5-2.0 g/L irrigation water to the plant. Dosage rate depending on interval or continuous feeding program and requirements. Contact HP Fertilisers or our local distributor for specific recommendations. Apply lower rates in greenhouses or under hot climate conditions.

To be used only where there is recognised need. Do not exceed appropriate rate.

DANGER: 1-1318: Causes serious eye damage. H272: May intensify fire; oxidiser. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep/ Stole away from clothing/combustible materials. P280: Wear

protective gloves/protective clothing/eye protection/face protection. P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

Batch/Type number	25 Kg NET
CE + notified body number if applicable	COMPANY Name address

7. POLICY OPTION 2D – NON-PROFESSIONAL USERS - MEASURE 5B (TEXT IN GREEN IS ALLOWED TO GO DIGITAL)

COMPOUND SOLID INORGANIC MACRO NUTRIENT FERTILISER

NPK (Mg) Mineral Fertiliser with micronutrients, 18-11-18(+2.5)/18-4.8-14.9(+1.5)

18 % TOTAL NITROGEN (N)

9.9% Nitric nitrogen, 7.7% Ammoniacal nitrogen, 0.4% Urea nitrogen.

11% TOTAL PHOSPHORUS PENTOXIDE (P205) (=4.8% P)

11 % water-soluble Phosphorus pentoxide (P2O5) (=4.8% P)

11% Phosphorus pentoxide (P2O5) (= 4.8% P) soluble in neutral ammonium citrate

18% POTASSIUM OXIDE (K20) (=14.9% K) Water soluble.

2.5% MAGNESIUM OXIDE (MgO) 1.5% Mg) Water soluble.

Poor in chloride.

Micronutrients are completely water soluble: 0.010% Boron (B), as Boric Acid / 0.010% Copper (Cu), chelated by EDTA / 0.100% Iron (Fe), chelated by EDTA / 0.040 % Manganese (Mn), chelated by EDTA / 0.001% Molybdenum (Mo), as Sodium Molybdate / 0.010 % Zinc (Zn), chelated by EDTA

pH range guaranteeing acceptable stability of chelated fraction: Cu 1.5-10; Fe 1.5-6.5; Mn 3-10; Zn 2-19.

This fertiliser contains urea, which can release ammonia and have an impact on air quality. Depending on local conditions, appropriate remediation measures must be taken.

Ingredients: Potassium nitrate (7757-91-1) 1, Monoammonium phosphate (7722-76-1)

1, Magnesium sulphate (7778-80-5)1

1) Virgin material substances and mixtures

Storage conditions: Prefers inside storage. Keep the product in its original packaging, in a dry and well-ventilated space out of direct sunlight, on clean and dry ground or pellets. Store at temperature between + 0 ºC and +40 ºC.

Granulometry: Combination of powder and prills. 63 % of the product passes through sieve of 1 mm and the remaining 37 % through sieve of 4 mm.

Instructions for use: recommendation for shrubs and small trees. Can be used for container

Nursery Stock and potted plants. 0.5-2.0 g/L irrigation water to the plant. Dosage rate depending on interval or continuous feeding program and requirements. Contact HP Fertilisers or our local distributor for specific recommendations. Apply lower rates in greenhouses or under hot climate conditions.

To be used only where there is recognised need. Do not exceed appropriate rate.

DANGER: 1-1318: Causes serious eye damage. H272: May intensify fire; oxidiser. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep/ Stole away from clothing/combustible materials. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351 +P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor.

Batch/Type number	25 KG NET
CE + notified body number if applicable Name address	COMPANY

Annex 9: Case Studies

1. CASE STUDY 1: LARGE MANUFACTURER

Company description

The company is a large manufacturer from the growing media industry, with more than 249 employees. The company has offices in three European countries and distributes fertilisers all over the EU-27 and internationally . It specialises in producing and selling growing media and fertilising product blends. The company's product line includes over 70 different growing medium products, to which 175.000 labels are used each year. Most labels are for packages between 101-500 litres or kgs, while 15.000 labels are used per annum for packages larger than 500kg. Furthermore, the company produces over 4000 different types of blends, using 14.250.000 labels. 11.500.000 of these are fixed on 6-20 kg/l packages, 2.500.000 are attached on 101-500 kg/l bags and 250.000 on bulk bags larger than 500kg/l. The mixture and components of these blends are customised according to the needs of the customer, therefore labelling information also varies highly. Primarily, customers are ordering specialised blends in large quantities, but sometimes small-scale farmers also buy standardised products from their warehouses.

Labelling exercises and costs of compliance

When labelling customised products, the company's current practice is to put standard, not frequently changing information on one type of bag, which are used for a number of different products. Additional info is provided digitally (e.g. in PDF) or in a paper format that follows the product but not as a label. According to the interviewee, it would be "impossible that we should have 10,000 different bags instead of five with all the costs and all the surplus in warehouse of different bags and all the waste of plastic and all the changes". Hence, the company has a database and system set up for tracking information digitally, which can easily be sent to users . Therefore, the company has strong capacity already to cover the digitalisation of information about fertilising products. However, the final method of presenting information (standardised template or not) as well as the place of information (centralised database or manufacturers' website) could incur additional expenditure. Hence, when asked about digitalisation, a one-off cost of 100.000 EUR was indicated for set-up costs (e.g. acquisition of equipment such as a QR code printer) in the case of policy options 2-5. No other costs were mentioned regarding the maintenance of webpages, development of software or staff training.

The survey questionnaire differentiated the cost of compliance with the FPR according to one-off and ongoing costs. The company expects that compliance will put an additional one-off cost of 10.000 EUR on staff time, a one-off cost of 100.000 EUR for obtaining new machinery and 100.000 EUR because of operational changes (managing, ordering and storing labels, designing label replacements etc.). Altogether, the one-off costs of compliance will amount to 210.000 EUR. However, as noted above, this can be spread across a total of 190,000 labels per annum (the total tables produced annually for smaller and larger packages combined).

Furthermore, complying with the FPR 2019 has led to 25.000 EUR additional ongoing annual costs of maintaining machinery to meet FPR labelling obligations, 25.000 EUR of additional ongoing costs of label printing and an additional 15.000 EUR for fixing labels to packaging. Nonetheless, in the interview, the representative said that the costs of having different bags would by far outweigh the costs of digitalisation.

Regarding costs input, the manufacturer emphasized that these are in fact "guestimates" and their main problem is not so much the financial costs involved "much more the balance between the practical challenge (providing required info in many different languages on ever changing products that are customised according to customers' needs) versus the potential benefit (professional growers already know what they get". Thus, according to the interviewee's argument, the comparative benefit of delivering more information on physical labels to their customers under the new FPR coming into effect in July 2022 is rather low, as, by the time the product is delivered, they already know the necessary information. Customers place orders based on their needs or prepare products in consultation with the manufacturer.

In summary, the manufacturer reported that their main cost of digitalisation would be the acquisition of equipment needed for printing (e.g. QR codes), this being identical across all policy options that offer a certain degree of digitalisation, while it did not foresee costs for purchasing software, the set-up of webpages, additional staff training or for keeping information up to date. Producing customised blends, the company has already built up the capacity to handle information digitally, due to frequently changing information items (list of ingredients, nutrient content). According to the representative, their primary concern is less so the costs, but whether it is feasible to comply with the regulation without digitalization. Customised products would require the constant revision of labelling information of the physical label. In the event of not introducing digitalization, their first consideration would be to sell only standardized products.

Thus, the expected utility of digitalisation lies in the removal of frequently changing information from the labels, which is provided in Policy Options 2 and 4. Increasing the amount of the removed information would have no further cost saving effect on the company, whereas users would lose access to additional information.

2. CASE STUDY 2: MID-SIZE FIRM

Company description and fertiliser products

The company is an Ireland-based, small-sized manufacturer specialising in soil, plant and animal nutrition. Whilst it has about 100 employees, it is 80% owned by a much bigger entity, a large multinational with 1.6 bn euros in turnover across 40 countries, with 6200 employees.

Regarding the volume of fertilisers / year, the company sells 350000 tonnes in Ireland/ annum. 10% is sold in bulk, 75% are sold in ½ tonne bags, and 15% in 50 kg bags. The company are both baggers of minerals and inorganic fertilisers. Additionally, they are blenders of mixtures of fertilisers that are often produced in small quantities for clients on a customised basis.

General feedback on the digitalisation of fertiliser labels

The company was therefore generally favourable to the possibility of voluntary adoption of digital labelling and has been considering transitioning to digital labels ahead of any changes in EU legislation. The interviewees stated that going ahead with producing digital labels would be relatively straight forward, but would incur some costs.

They foresaw that two QR codes would need to be used, the first displaying health and safety (H&S) information, and the other setting out any complementary, but non-safety related product data. They also stated that the list of ingredients should remain on physical labels, given that fertiliser producers such as the firm concerned produce blends and it is not possible to pre-print labels or digitalise all the information, as it isn't known upfront which raw materials will be included in the blend and go into the bag. Therefore, the ingredients must remain on the physical label for blended products.

The product name, batch QR code and expiry date would also be needed on the digital label.

Regarding feedback on which information should remain on physical labels, key safety data would have to remain on the bag, but potentially other information, such as on nutrients, could be digitalised.

An advantage of QR codes they anticipated was that the type of digitalised information can be very adaptable.

Regarding potential cost savings, the firm said that there may be some minor cost-efficiency savings of digital labelling, but also some upfront and recurring costs. However, they viewed potential voluntary digital labelling under the FPR 2019 as being less a cost-saving driver and more a means of implementing the FPR.

Regarding the baseline situation and current market practices, the firm noted that safety instructions are pre-printed by all the main brands of fertilisers on bags. Smaller firms falling under the current 2003 Regulations attach a physical sticky label. However, a concern was expressed about the new FPR 2019 that the new requirements coming into effect in July 2022 require a lot of additional information to be put on physical labels, and often labels cannot be produced that would be big enough to incorporate all of the information requirements under the new 2019 Regulation. They noted that for some fertilisers, it would be physically impossible to put all the information onto a label to be affixed to the product. Hence they expressed the view that digital labelling was the most efficient and effective means of achieving regulatory compliance in future.

In terms of the willingness of the fertiliser industry to accept voluntary digital labelling, in their estimation, the majority of farmers have smart phones and 80% of their fertiliser sales are to larger-scale farmers who are familiar with using QR codes. For small farmers, they advocated ensuring that a leaflet / brochure was available containing basic safety information and user instructions.

Costs of the digitalisation of fertiliser labels

In terms of the costs of the digitalisation of fertiliser labels, they estimated that they would need to purchase one QR coding machine per fertiliser production factory for 20,000 EUR.

3. CASE STUDY 3: A MID-SIZE DISTRIBUTOR, IBERIAN BRANCH

Company description and fertiliser products

The company is a medium-sized business (between 50-249 employees), which distributes products in their country of operation and is a regional branch of a multinational crop nutrition company. It mainly sells inorganic fertilisers, having 75 different products on the market, as well as one organo-mineral and three bio-stimulant fertilising products.

Almost exclusively, the company sells products in bulk packages, most in 25 kg bags and do not target the non-professional consumer market.

General feedback on the digitalisation of fertiliser labels

The company does not provide labelling information digitally at present. It calculates that in order to comply with FPR they will face a one-off cost of 5.000 EUR in staff time, 10.500 EUR in costs of fixing labels to packaging and 10.000 because of required operational changes (e.g. how to place labels on packaging, manage labels and packaging, ordering and storage). Without FPR, the company indicated a cost of 150 EUR for fixing labels to packaging. Compliance with FPR also creates an annual cost of 5000 EUR in staff time and an additional 2000 EUR cost of printing labels.

In an interview with company representatives, storage of labels was indicated as one of the main cost drivers. Labels have to be pre-ordered well in advance (e.g. half a year before) and in larger quantities, as there are minimum pre-order sizes. Thus, the company prefers to order labels for a longer duration of time. Secondly, the management of labelling information was another driver of operational costs. According to the interviewee, managing labelling information is a complex issue, especially if these are multi-language ones. The process of updating and changing label information itself is costly in staff time but pre-printed labels will also have to be discarded. For this reason, the company thinks that the most substantive advantage of digitalisation is the operational aspect,that would be considerably streamlined. Given that information subject to frequent changes affects more the operational management of labels, the expected costs and savings are also influenced by whether digitalisation extends to frequently changing information items.

When asked about how the implementation costs of FPR in relative terms, the company expects a 30% increase of costs in staff time (not including design of labels), a 3% increase in costs of fixing labels and a 20% increase in operational changes as compared to the 2003/2003 regulation. Compared to these costs of compliance with FPR, digital labelling would reduce costs of staff time by a factor of three (from 30% to 10% in case of Option 2, 3a, 3b and to 15% in case of options 4, 5a, 5b). Costs in operational changes would be reduced in case of policy options 4, 5a and 5b from 20% increase to 10%.

Costs of the digitalisation of fertiliser labels

The company estimates that costs of digitalisation would incur a 500 EUR one-off costs for the development and purchase of software, 1000 EUR for setting up web pages and 1000 EUR for staff training. An ongoing expense of 1000 EUR for staff training was indicated, per annum, whereas updating information on webpages would draw an additional 200 EUR yearly expense. The additional one-off and ongoing costs of staff

training was present even in the absence of digitalisation. Thus, the main costs drivers of digitalisation would be the purchasing or development of relevant software, the set-up of webpages and expenses related to website maintenance and updating information. Crucially, these costs are unrelated to the extent of digitalisation and are much smaller than compliance costs.

The company expects additional environmental and social benefits from Policy Option 4 onwards, while economic benefits would be present even in case of Policy Option 2. Consequently, the company would prefer Options 4 or 5a/5b.

They presently have two factories so a total one-off cost of 40,000 EUR.

There would then be the costs of paying for an ongoing services (including software) contract with the QR software developer. No costs data was available for this as the firm has spoken to a potential QR code specialist provider but they have delayed making a decision on signing a contract as there are currently no mandatory rules on digital labelling and they are awaiting the implementation approach to the FPR 2019.

They noted that there would be some cost differences compared with physical labelling. In theory, it will be more efficient, but in practice, they will at least in the early years of the FPR 2019's implementation have to put a leaflet on every bag. This was seen as being a bit costly and not very practical for fertilisers sold in small quantities, say 50 kg bags.

The firm only produces bags in Ireland, therefore they only need to produce labels in English. They stated that for exporting firms, there would be costs for both physical and digital labels associated with producing bags in several EU languages. However, there would be no specific additional costs associated with digital labelling in this regard.

As noted in the previous section, the fertiliser producer saw minor cost savings stemming from digitalisation but was more interested in ensuring compliance with the significant increase in information requirements under the FPR.

ANNEX 10: TRENDS IN DIGITALISATION

1. DIGITAL LITERACY AND SKILLS AND INTERNET ACCESS

Consideration is now given to issues relating to the digital divide, including between rural and urban areas, different types of socio-economic groups, including the issue of vulnerable social groups and the extent to which they can get access to digital means of accessing fertilising products labels. Any distinctions in digital skills and willingness to use digital labelling are considered, for instance, between professional and non-professional users. The extent to which there is divergence across the EU-27 and between rural and urban areas in terms of fertilising products users' access to the internet is considered. Here, among the issues considered are broadband availability and the reliability and stability of internet access in different locations, including rural areas.

Box 10.1: Data availability and gaps

Whilst some relevant data is available on access to broadband internet and on digital skills among the European population, there are also shortcomings in the data.

For instance, DESI reports on broadband internet access at national level. Although some regional data exists through national statistical systems (NSS), this is not fully comparable across the EU-27, and even sometimes *within* a Member State (e.g. Italy). Despite these challenges, some data on broadband internet at a NUTS III regional level has been produced in the *Study on Broadband Coverage in Europe 2020* for DG CNECT. There may be data gaps in some regions, but the picture shown is reasonably comprehensive.

There is no specific data available on digital literacy and internet access among fertilising product users, therefore interview feedback and an online survey were used to gather data. Views were solicited as to how far professional and non-professional users have digital skills and access to the internet whilst at home/ the office and on the move.

Overall, the findings are that:

- **Digital literacy is not uniform across the EU-27.** In Northern Europe, there are generally higher levels of digital literacy than in Southern Europe.
- **Digital literacy varies by age group and social group.** Younger people are considerably more digitally literate than older people.
- **Digital literacy varies according to the educational level.** Those with no or only basic education are proportionately much more likely to lack basic digital skills.
- **Access to broadband internet has improved significantly in the past decade.** This has been driven by different factors, such as major increases in investment in fixed line and mobile broadband access. The increasing ubiquity of smart mobile phones has made broadband access much easier for professional and non-professional users on the move to access information about fertilising products.

2. DIGITAL DIVIDE – DIGITAL SKILLS

Based on the **European Digital Competence Framework for Citizens**, basic digital skills allow 'the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society.' The following table considers the extent to which among the population generally, there are digital skills, drawing on Eurostat data analysed in the human capital dimensions of DESI (Digital Economy and Society Index), 2021. The data only provides a proxy in that it relates to the whole population, but is useful when considering digital literacy issues among non-professional users.

Box 10.2: Digital literacy among the EU population (relevant to non-professional users).

According to DESI 2021, in 2021, 56% of individuals in the EU-27 had at least basic digital skills (covering all ages).

Socio-demographic factors however mask strong variations in digital literacy depending on the age cohort and educational background. For example, as DESI 2021 points out *"80% of young adults (aged 16-24), 84% of individuals with high formal education, and 87% of students have at least basic digital skills. By contrast, only 33% of those aged 55-74 and 28% of the retired and the inactive possess at least basic digital skills"*.

A substantial digital skills gap persists however between rural and urban areas. Whereas only 48% of individuals in rural areas possess at least basic digital skills, this increases to 62% for those living in cities and urban areas.

In earlier editions of DESI (e.g. 2020 edition using 2019 data), a more detailed disaggregation was provided. 35% of the EU labour force population aged 25-64 years old did not have at least basic computer skills. The variation in the active labour force percentage without at least basic digital competencies across EU MS is considerable. The working populations without basic digital competencies in the Netherlands, Finland, Sweden, Germany, Denmark, Luxembourg, and Austria constituted less than 30% of the population. In contrast, Italy, Cyprus, Latvia, Romania, and Bulgaria lead with the highest percentages of digitally incompetent working populations, which accounted for over 50%.

However, **Eurostat data revealed that basic computer skills have been consistently growing in most of the EU Member States**. When comparing 2015-2019 data across all EU MS, 12 out of EU-27 countries had higher than the EU average (65%) of the working population with at least basic digital skills. Furthermore, the data showed that only in seven Member States, including Denmark, Luxembourg, Estonia, Greece, Italy, Latvia, and Bulgaria, the proportion of the working population with basic digital competencies decreased slightly between 2015-2019.

Based on the Commission's Digital Skills Indicator, in 2021, Finland demonstrated the best performance in the human capital dimensions of DESI. Estonia, Sweden, and the Netherlands were also the top countries having high percentages of populations with

basic and advanced digital skills. On the other hand, Italy, Romania and Bulgaria demonstrated the lowest rate of digitally advanced people in terms of basic and more sophisticated computer skills.[190]

An OECD study revealed that whilst gender did not have a crucial impact on the level of computer skills, age and educational attainment were important determinants of the level of competencies within the EU countries. Eurostat statistics confirmed such findings as more than 30% of the population without any education (or having only low formal education) had basic digital competencies, 85% of adults with a degree in higher education had at least basic computer skills. In terms of age, digital literacy of people over 30 years old (75%) deteriorated progressively with those over 55 demonstrating the lowest level of basic digital skills (43%).[191]

The digital divide affects people in rural areas. The statistics suggest that there is a problem around lack of basic digital skills in rural localities. This was shown in the previous table, as only 48% of the population in rural areas has basic digital skills. However, the data do not indicate whether these were farm managers, farm owners, retired persons, farm labourers, etc. Hence not too much weight should be placed on such data.

It is important to highlight that **cultural factors** can be more significant than having access to the internet in determining whether users of fertilising products are willing to use digital labels. Demographic ageing affects rural areas more than urban areas, and older non-professional users (e.g. hobby gardeners) and some older professional users (e.g. small farmers) are less digitally literate than younger users, and also culturally less likely to use digital means to access product information. The evidence for this is interview feedback from fertiliser industry associations and from fertiliser producing companies, as well as some groups representing users. This finding is also implicit from the statistics on the digital society more generally from Eurostat mentioned earlier, which shows that if digital literacy is lower in some Member States, especially in Southern and South-Eastern Europe, and lower in rural than in urban areas, this is likely to impact the willingness to use digital labels.

Overall, the adoption of digital labelling by users in rural areas can be argued to be **more dependent on age, educational and cultural factors rather than access to the internet** being the problem, although the latter can still be an issue in very remote rural areas, or in areas with slow internet.

[190] European Commission. (2021). *Digital economy and Society Index (DESI)*. Available at: https://digital-strategy.ec.europa.eu/en/policies/desi

[191] European Court of Auditors. (2021). *Review 02/2021: EU actions to address low digital skills*. Available at: https://www.eca.europa.eu/Lists/ECADocuments/RW21_02/RW_Digital_skills_EN.pdf

3. DIGITAL DIVIDE – ACCESS TO THE INTERNET

As noted in an analysis of statistics on the digital society, *"people living in remote regions may be excluded as a lack of investment in infrastructure leads to access and/or performance issues when trying to use the internet"*. [192]

However, there has been **significant EU and national investment in the past decade to improve internet access (especially broadband) in rural areas** which should be recognised when considering how far lack of internet access in rural areas remains a problem. For instance, investment in broadband infrastructure has been made through a combination of EU funding, national government investment and private sector investment (often subsidised or incentivised by government to address the digital divide).

The main EU funding sources[193] for infrastructure development have been through cohesion policy programmes e.g. ERDF and EAFRD funding. Whilst the latter evidently focuses on rural areas, the ERDF has also sometimes been used to invest in broadband infrastructure in rural areas. Moreover, the EIB's large loans scheme has provided funding to invest in upgrading broadband infrastructures linked to legacy national telecoms networks. DG DEFIS's Secure Connectivity Initiative proposal announced in late 2021 will provide satellite-based connectivity and is designed to improve internet access in rural areas.

Additionally, there has been **significant private sector investment in mobile internet technologies,** including 4G and 5G, such that there is much improved internet access across large areas of the EU-27. Rural locations that can't get decent fixed-line broadband access can benefit from 4G. However, in some rural areas, sometimes only 3G is available, and there remain pockets where it is either difficult or impossible to get internet access.

The most recent 2021 DESI Scoreboard found that **the problem of the digital divide in rural areas may not be as pronounced today as it was 5-10 years** ago due to rapid rollout of broadband, with mobile broadband making internet access widely accessible except in some rural pockets. The 2021 DESI Scoreboard found that 97% of the EU (including rural areas) provide access to either a fixed or mobile broadband connection, or both.

According to DESI 2021's chapter on connectivity, *"over three quarter of EU households (77%) had a fixed broadband subscription in 2020, following a steady growth (an annual growth rate of 2.1%) over the last 8 years"*. However, there are considerable variations between Member States. For instance, DESI 2021 data shows that national take-up rates of fixed broadband *"ranged from only 57% to 92%. Cyprus, Germany and the Netherlands registered the highest figure, while Finland, Bulgaria, Italy, Latvia and Lithuania the lowest. The relatively low take-up rates in Finland, Italy, Poland and Latvia may partly be due to fixed-mobile substitution"*.

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[192] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_society_statistics_at_regional_level#Internet_users

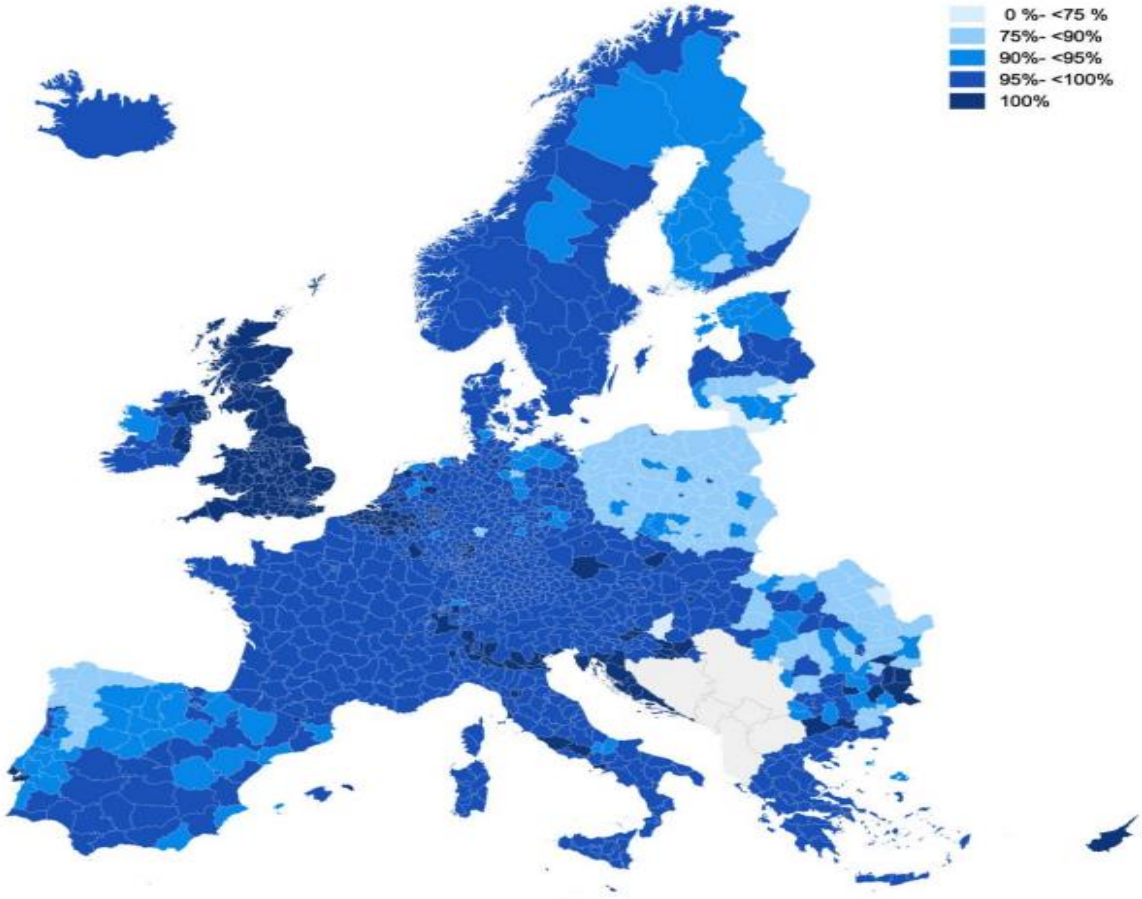
[193] BROADBAND IN THE EU (2017), European Court of Auditors https://www.eca.europa.eu/Lists/ECADocuments/AB_BROADBAND/AB_BROADBAND_EN.pdf

In 2020, overall, according to DESI, **91% of households had access to the internet at home,** 86% of individuals were regular internet users (using it at least weekly), while almost 80% were using it either every day or almost every day". Nevertheless, it was also noted that in some countries where people are not using the internet, such as Bulgaria and Greece, where one in five individuals has never used the internet (in comparison with circa 1% of the adult population in Sweden, Luxembourg and Denmark).

Notwithstanding the progress that has been made, there **remain some rural areas across the EU-27 with difficulties in accessing the internet**. The following Figures highlight different types of broadband data availability in regions across the EU-27 taken from the *Study on Broadband Coverage in Europe 2020*[194].

In the first Figure, the situation is shown in respect of fixed broadband coverage at the NUTS III level overall where data is available.

Figure 10.1: Study on Broadband Coverage in Europe 2020 – fixed broadband coverage (NUTS III level)



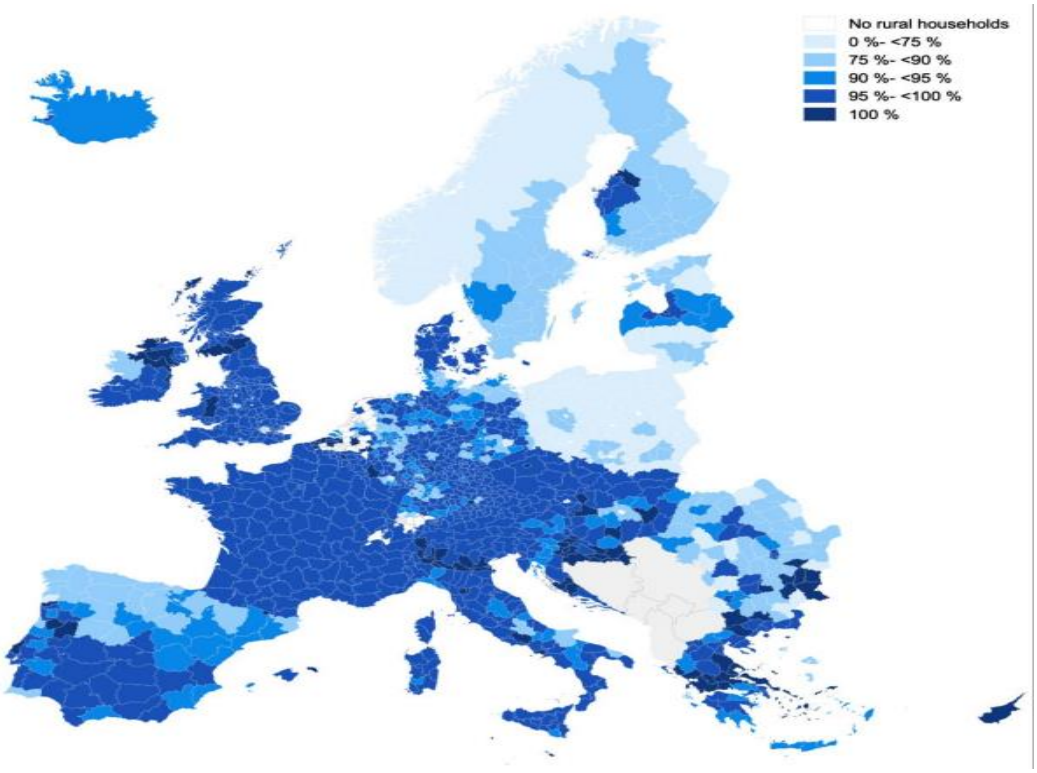
Source: Study on Broadband Coverage in Europe 2020, a study by IHS Markit, Omdia and Point Topic.

[194] Study on broadband coverage in Europe 2020 - https://digital-strategy.ec.europa.eu/en/policies/desi-connectivity

The data shows that there are regions where **fixed broadband coverage** is between 0-75%, such as in parts of Spain, Poland and parts of Lithuania, Hungary, Bulgaria and Romania where it is 75-95%, whereas in most regions, it is around 95%-100%.

In the next Figure, **rural fixed broadband coverage** at the NUTS III level is provided across European regions. This shows greater gaps in coverage, for instance in Scandinavia, Poland, some of the Baltic States and in Hungary, Bulgaria and Romania.

Figure 10.2: Study on Broadband Coverage in Europe 2020 – rural fixed broadband coverage (NUTS III level)



Source: Study on Broadband Coverage in Europe 2020, a study by IHS Markit, Omdia and Point Topic.

It should be noted however that whilst these data are useful, there is a **lack of comprehensive data on broadband coverage differentiated between urban and rural areas and the occupational mix in those areas**. As noted in the earlier overview of data shortcomings, there are gaps in the data, and in some cases, major **comparability problems *between*** and ***within*** **Member States** in terms of regional level data.

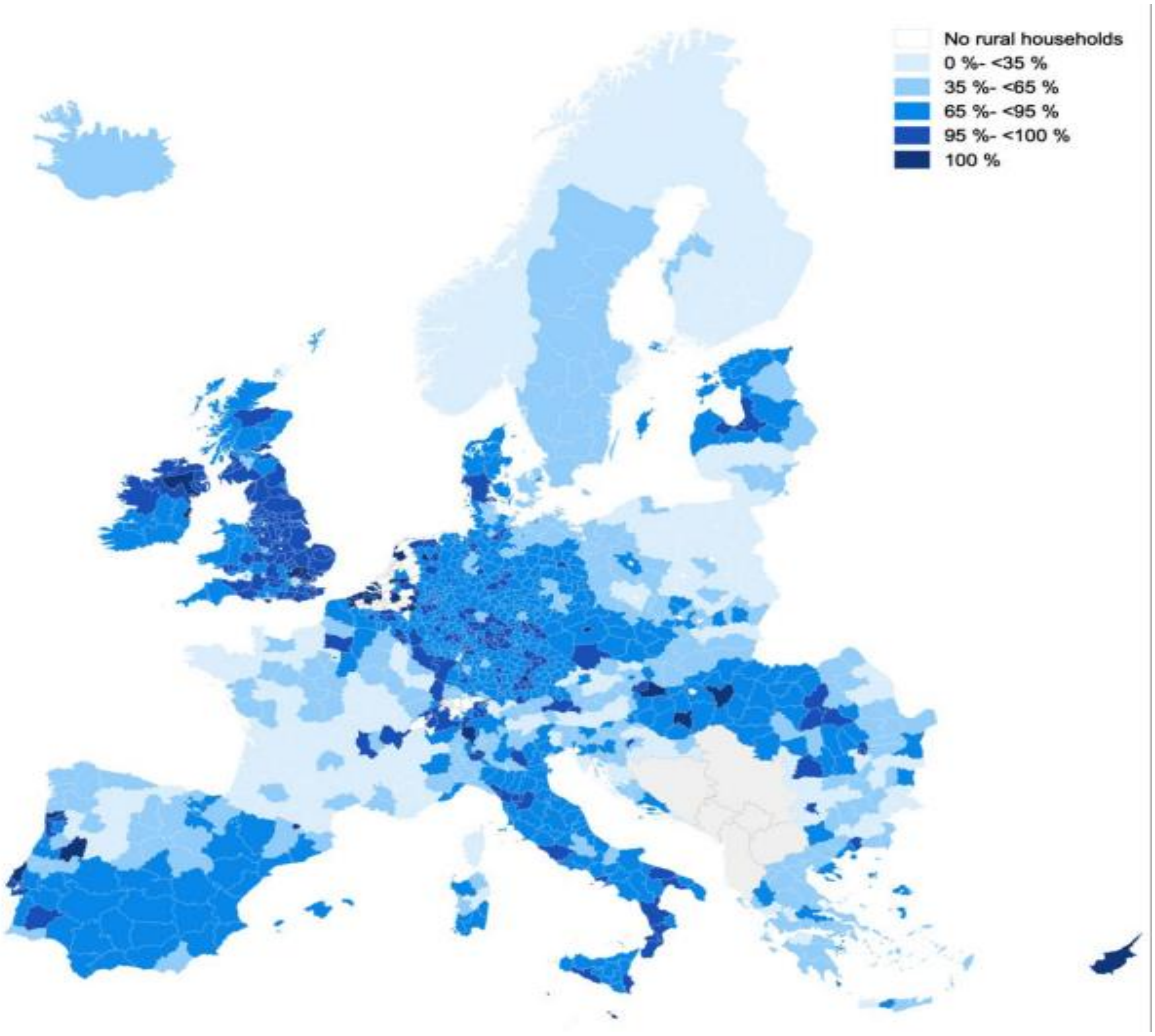
Overall, whilst a rural digital divide persists in some areas, the situation has considerably improved in the past 5 years. Smart phones have increasingly become prevalent and mobile internet connections have provided a substitute in some rural areas yet to benefit from fixed line infrastructure upgrades (as evidenced in DESI, 2021). There are varying internet speeds depending whether in an urban or rural area, with slower access more common in rural areas due to the major investment required being more prohibitive. An example here was provided earlier that 5G investments are concentrated in major cities, and some rural areas have only patchy internet coverage through 4G.

However, the situation regarding the digital divide between urban and rural areas is not as clear-cut as is commonly supposed. Some rural areas enjoy high-speed internet access, whereas some urban areas are lumbered with legacy networks and lack investment in

high-speed fibre-optic cables. *"Some rural areas that have received investment from telecoms companies enjoy ultrafast speeds, while nearby "second cities" will be surfing via copper phone lines, rather than next-generation access (NGA) — or faster, upgraded networks — for the foreseeable future.* [195]

In the following Figure, an overview of access to high-speed NGA broadband in rural areas is provided:

Figure 10.3: Overall rural NGA[196] broadband coverage, 2020



Source: Study on Broadband Coverage in Europe 2020, a study by IHS Markit, Omdia and Point Topic.

There are considerable gaps in broadband coverage in some Member States in rural regions, such as France (also Corsica), Spain, parts of Eastern Germany, Poland, Lithuania, Hungary, Bulgaria and Romania.

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[195] See *inter alia* FT Article - Patchy broadband leaves Europe with digital divide (NOVEMBER 21 2018) - https://www.ft.com/content/8bbea1ce-ad58-11e8-8253-48106866cd8a

[196] Next Generation Access (NGA) coverage: includes fixed-line broadband access technologies capable of achieving download speeds meeting the Digital Agenda objective of at least 30 Mbps coverage, such as combination of VDSL, DOCSIS 3.0, and FTTP.

It should again be recalled that these are partly addressed through mobile internet access.

In addition to the secondary data presented earlier, some primary data was collected. Among the survey findings were that:

- The stakeholders usually have access to the internet at least in some places. Most professional users surveyed selected that they have the internet at home (85.7%) and the office (55.3%). Non-professional users said that they have the internet at home (96.2%) and on-the-go (64%).
- Stakeholders who check, assess, or inspect fertilising products also said that they have the internet at home (93.3%), at the office (83.3%) and while travelling (63.3%).

Statistical data on access to internet (connectivity) and digital devices also show that there is a digital divide between some types of users by socio-economic group. While most households in the EU have no problem connecting to the internet or accessing digital devices, some rural areas might be problematic in this regard. In addition, the research identified differences between access to the internet depending whether both professional and non-professional users were in the office (professional) or home (non-professional), where net access was very high or out in fields, gardens etc. where access to the internet dropped.

Those lacking digital skills include not only more elderly people, but also more traditional farmers and hobby users, blind and partially-sighted people, the less well educated, and those living in rural areas (the latter especially in some MS, where more than half of the population lack basic digital skills – see data presented earlier).

The analysis of statistical data on internet connectivity and access to devices in the EU is presented in the box below.

Based on Statista Research Department data[197], in 2020, a significant 91% of households across the EU had access to the internet. In comparison, in 2019, the percentage of households connected to the internet accounted for 90%. The Netherlands (97%), Germany (96%), Finland (96%), Denmark (95%) and Sweden (94%) lead with internet connectivity coverage in households. In contrast, the lowest rates of internet connectivity were observed in countries like Greece (80%) and Bulgaria (79%). In terms of the selected Member States of interest (Denmark, France, Germany, Lithuania, Poland, Romania, Spain), the highest proportion (96%) of households with internet connectivity in 2020 was found in Germany, whereas Lithuania had the weakest performance (82%) in this area.

There is some gap in households' access to the internet when comparing urban and rural areas. While households in cities and other suburbs demonstrated internet accessibility rates accounting for 92% and 89%, respectively, households in rural areas were not so advanced (86%).[198] The urban-rural gap was most accurate in Greece, Bulgaria, Portugal,

[197] Statista. (2021). *Household internet access in European countries 2017-2020.* Available at: https://www.statista.com/statistics/185663/internet-usage-at-home-european-countries/

[198] Eurostat. (2020). *Digital economy and society statistics – households and individuals*. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals#Internet_access

Slovenia, and Romania as these countries demonstrated lower than the EU average level of internet connectivity (85%). Germany had the same level of internet connectivity across households in cities and rural areas (96%). In contrast, the Netherlands (one per cent lower in urban areas) and Denmark (one per cent higher in urban areas) demonstrated almost identical proportions of households. In Sweden, the highest level of internet connectivity was found in rural (97%) rather than urban areas (95%).

International Telecommunication Union analysis[199] in 2019 revealed that the gap in internet access between urban-rural areas is not the same as the divide in computer access. That is to say, the urban-rural gap is even wider in household computer access than in internet connectivity. In Europe, 82% of households in urban areas had access to a computer, whereas only 66% percent of households in rural areas had such privilege.

The results of the external study, when complemented with statistical data, clearly show that **some professional users**, especially farmers, can be **at a disadvantage** in the context of the digitalisation of fertilising product labels. The reasons for this disadvantage are the fact that many farms are located in rural areas which have worse internet connectivity and the fact that farmers are often older citizens, potentially having limited digital skills.

Overall, whilst digitalisation is a major trend and whilst the percentage of European citizens and businesses with access to broadband/ the internet has significantly increased in the past decade, not all social groups throughout the EU (and not all non-professional users) have access to reliable and stable internet. Moreover, particular social groups, such as elderly hobby gardeners, may have less access to the internet. However, it should also be recognised that whilst some users may face challenges in using digital technologies, many older people are able to use smartphones and having a QR code with digital product information would enable them to enlarge the size of a fertiliser label compared with a physical equivalent, where sometimes very detailed label information needs to be included, depending on the specific product types, as the requirements vary between fertilisers.

The issue of the digital divide was considered when deciding which countries to focus on for the research. Generally it is also more isolated and rural communities/ areas where there is a gap in access to the internet. Some details provided in *Broadband coverage in Europe 2020*[200] confirm that for example that in some areas, e.g. northern Spain, this is the case.

A further issue of relevance to both agricultural and hobby users is that there are some members of society that are not very conversant with digital technologies. Thus there are different types of farmers – for example it was mentioned that in Spain there are more traditional farmers who tend to be older and not very au fait with digital technology, whereas others are focused on maximising production and export markets and are highly

[199] International Telecommunication Union. (2020). *Measuring digital development*. Facts and figures 2020. Available at: https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2020.pdf

[200] Broadband coverage in Europe 2020, DG Communications Networks and Technology, p.56 by IHS Markit, OMDIA and Point Topic

conversant with digital technologies. Age is also an issue, as for example hobby gardeners are often elderly and not very digitally literate.

For not-sighted people, or those with little sight, it might be that some information on the physical label is accessible (maybe through braille?), but providing such information in a digital format presents some challenges (although some sites can provide spoken text).