



Working sub-group 2: Licence data

EU Ecolabel (EUEL) for Indoor and Outdoor Paints and Varnishes (P&V) (June 2024)

Draft under discussion



Contents

| | | |
|-----|--|----|
| 1 | Introduction..... | 3 |
| 2 | Basic points about the criteria for targeted data collection exercises | 4 |
| 2.1 | Criterion 1: White pigment content | 4 |
| 2.2 | Criterion 2: TiO ₂ production..... | 4 |
| 2.3 | Criterion 3: spreading rate | 5 |
| 2.4 | Criterion 4: SVOC and VOC content | 6 |
| 2.5 | Criterion 5: Yes/No to use of derogations..... | 8 |
| 2.6 | Formulation data (optional but very helpful for hotspot analysis)..... | 9 |
| 3 | Working questions | 11 |
| 4 | Minutes from WSG2 meeting..... | 12 |
| 5 | Conclusion..... | 13 |

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1 Introduction

When revising EU Ecolabel (EUEL) criteria that set quantitative limits, it is crucial to evaluate how real products, especially those already carrying the EUEL, measure against these limits. This evaluation helps to determine whether the current limits remain suitable and ambitious enough. However, the data associated with EUEL products is not publicly accessible and is protected by a Non-Disclosure Agreement (NDA) between the license holder and the Competent Body.

Initial efforts by the project team to collect data on SVOC and VOC contents have only resulted in limited information being gathered, indicating a need for a more coordinated approach, both for VOC/SVOC data and data relating to other criteria, namely:

- Criterion 1: White Pigment Content (how does data compare to upper limits on allowed quantities of high refractive index white pigments per m² of opaque coating?).
- Criterion 2: TiO₂ Production (how does data compare to upper limits on SO_x emissions and specific waste generation rates per tonne of TiO₂ produced?).
- Criterion 3: Just the part about minimum spreading rate limits.
- Criterion 4: SVOC and VOC Content (how do calculated VOC and SVOC contents compare to the upper limits?).
- Criterion 5: Yes/No to Use of Derogations (how often are each of the derogations actually being used? And for which type of paint and varnish products?).

The ambition level of these criteria, established ten years ago, must be re-evaluated to ensure they remain relevant and effective. Looking at EUEL products on the market today is useful not only because all of these products should have this data available, but because they also reflect products available on the market today. Without access to relevant data, it is challenging to make informed decisions about necessary updates or adjustments.

This working sub-group seeks contributions from **Competent Bodies** that possess extensive relevant license data and from **existing license holders** who might also provide information on both EUEL and non-EUEL products. The aim is to gather sufficient data to support the review and potential revision of the EUEL criteria.

The main documents for this working sub-group consist of this background document together with the Excel file "**Data_working_sub-group_2**". These two documents should be seen in combination. A copy of the Excel will be distributed to working sub-group members, who can distribute in their own networks, to form the basis for further data collection related to the four criteria.

Note, that this is not an official EU Commission document, but rather a working document developed by the project team to further the discussions in the working sub-group.

2 Basic points about the criteria for targeted data collection exercises

In this section, we explain how and why the data collection should be done for each criterion. Any relevant comments from the 1st AHWG meeting can be mentioned here as well if they add to the context for data collection needs.

2.1 Criterion 1: White pigment content

This criterion sets maximum limits on the allowed content of TiO₂¹ in terms of g/m² of coating. To calculate this number, it is necessary to know both the TiO₂ content in g/L and the spreading rate in m²/L. It seems that ALL INDOOR WALL AND CEILING PAINT PRODUCTS and also OUTDOOR PAINTS will have to comply with this requirement, demonstrating whether or not their final result is within the associated limits (40, 38 or 36 g/m²), or if the total specific TiO₂ content is below the threshold for exemption from wet scrub resistance requirements (25 g/m²).

We would like to know how close the specific TiO₂ contents in EU Ecolabel paints are to the limits set out in the current criteria. For this reason, we propose to collect data in a sheet in the Excel file for each CB or license holder :

| Purpose | Product | Criterion 1 | |
|--|------------------------------------|--|--------------------|
| | | 2. input data | EUEL limit |
| The reason for this data gathering exercise is in order to evaluate the ambition level of the current requirements on VOC content, SVOC content and spreading rate for EU Ecolabel paints and varnishes. | 1.Product name, type and reference | 2.Select the production type | |
| | Paint name 1 | Class I WSR EN 13300 indoor wall and ceiling paint | 40g/m ² |
| | Paint name 2 | Class II WSR EN 13300 indoor wall and ceiling paint | 36g/m ² |
| | Paint name 3 | Exempted from minimum WSR class indoor wall and ceiling paints | 25g/m ² |
| | Paint name 4 | Other indoor paints | 38g/m ² |
| | Paint name 5 | Other outdoor paints | 38g/m ² |
| | | | #N/A |

Overall, there were no proposals or comments made about the suitability of the limits during or after the 1st AHWG meeting. There seem to be no issues with compliance, because if there were, this would have no doubt been expressed by the industry. But if the limits are easy to meet, it can be expected that there are no complaints.

By asking for the limits to be linked to different categories of paint covered by the criterion, it is possible to see how ambitious each of the individual limits are.

In addition to the collective of quantitative data, we welcome comments and discussion about the specific high refractive index white pigment content in general.

2.2 Criterion 2: TiO₂ production

TiO₂ production is an energy intensive and highly polluting process and there are two main production technologies, which produce TiO₂ with different qualities and characteristics, both of which can be used in paint products. These two production processes are generally referred to as: (i) the sulphate process, and (ii) the chloride process. Since TiO₂ itself has a high environmental impact, and it can be used in paints in significant quantities, the following criteria were presented for TiO₂ production:

Sulphate process:

- SO_x emissions to air: 7,0 kg/tonne TiO₂ product
- Sulphate waste: 500 kg/tonne TiO₂ pigment

Chloride process:

- Chloride waste: 103kg, 179kg or 329kg/tonne TiO₂ pigment (depending on the type of ore used)

This data must be provided by the TiO₂ producer to the paint producer (and/or directly to the Competent Body). So we would like to know more about exactly what data is being provided, in order to see how ambitious the limits are. For this purpose, a sheet in the Excel file for gathering data has been added to input data (screenshot below).

¹ We say here TiO₂ for simplicity, but it technically could also count other high refractive index pigments, but this are really unimportant in terms of quantities used in the market compared to TiO₂.

| Purpose | TiO ₂ production | Criterion 2 | | | | | | | | | | | |
|--|--------------------------------------|--|-------------------|---------------------------|-------------------|--|-------------------|--|-------------------|--------------------------------|-------------------|--|-------------------|
| | | SO _x calculated as SO ₂ (kg/tonne) | | Sulphate waste (kg/tonne) | | Natural rutile ore used (kg waste/tonne) | | Synthetic rutile ore used (kg waste/tonne) | | slag ore used (kg waste/tonne) | | percentage TiO ₂ in paint (%) | |
| | 1. Select the production type | 2. input data | EU Ecolabel limit | 3. input data | EU Ecolabel limit | 4. input data | EU Ecolabel limit | 5. input data | EU Ecolabel limit | 6. input data | EU Ecolabel limit | 7. input data | EU Ecolabel limit |
| The reason for this data gathering exercise is in order to evaluate the ambition level of the current requirements on VOC content, SVOC content and spreading rate for EU Ecolabel paints and varnishes. | Sulphate process | | 7 | | 500 | | n/a | | n/a | | n/a | | >3 |
| | Chloride process | | n/a | | n/a | | 103 | | 179 | | 329 | | >3 |
| | Product contains less than 3,0 % w/w | | n/a | | n/a | | n/a | | n/a | | n/a | | 3 |
| | | | #N/A | | #N/A | | #N/A | | #N/A | | #N/A | | #N/A |
| | | | #N/A | | #N/A | | #N/A | | #N/A | | #N/A | | #N/A |

Some relevant points raised about the limits associated with TiO₂ production were:

- A comment suggesting basing emission criteria on TiO₂ content rather than ore type was received. Another stakeholder recommends revising the criteria to consider the percentage of TiO₂ in the ore, as current classifications may exclude certain chloride TiO₂ pigments. It is also suggested to align with the 2007 EU BREF for TiO₂, which offers comprehensive data on waste quantities and best available technologies.
- Stakeholders emphasize the need for clearer specifications and more detailed data to assess the suitability of current ambition levels and ensure the effective implementation of the criteria.
- Some TiO₂ suppliers were not providing specific numbers, but just declaring that they were below the limit.
- These numbers will naturally vary from year to year, but it seems that only one value is ever provided (the most recent value for the last year when the EU Ecolabel application is made).
- What happens when a paint producer changes between various TiO₂ suppliers or uses multiple TiO₂ suppliers in a given license period? Are multiple numbers provided to the CB?

2.3 Criterion 3: spreading rate

The spreading rate of a coating material is directly linked to the functional unit of its performance and is a major factor in any life cycle assessment calculation. There are a number of different spreading rates set out for different product categories as follows:

- (a,b) Indoor paint: 8 m²/L
- (c) Outdoor paint: 4 m²/L (elastomeric paint) or 6 m²/L (masonry paint)
- (d) Trim and cladding paints and varnishes: 6m²/L (outdoor) or 8 m²/L (indoor)
- (l) Thick decorative coatings: 1m²/kg
- (e,f) Varnish and woodstains: n/a
- (i) One pack performance coatings and floor covering paint: 6 m²/L (outdoor) or 8 m²/L (indoor)
- (g,h) Primers or undercoats: 6 m²/L (without specific properties) or 8 m²/L (with opacity)

Since spreading rate is normally linked to the quantity of coating needed to deliver a given opacity, it is normally associated only with paints.

Since the categories of paint are split in the same way (i.e. a, b, c, d etc.) as for the VOC and SVOC content criterion (criterion 4), the same excel worksheet is used for collecting both sets of data (spreading rate data would go in **column G**, while VOC data goes in Column C and SVOC data in column E. a screenshot of the template is shown below:

| 1 | 2 | A | B | C | | E | | F | | G | | H | I |
|----|----|--|--|---------------|------------|---------------------|------------|---------------|------------|---|--|---|---|
| | | | | Criterion 4 | | Criterion 3 | | Criterion 3 | | No. EUEL licensed products 3. Number of products associated with this data | | | |
| 3 | 4 | Purpose | Product type | VOC data | SVOC data | Spreading rate data | | | | | | | |
| 5 | 6 | The reason for this data gathering exercise is in order to evaluate the ambition level of the current requirements on VOC content, SVOC content and spreading rate for EU Ecolabel paints and varnishes. | 1. Select product type | 2. Input data | EUEL limit | 2. Input data | EUEL limit | 2. Input data | EUEL limit | | | | |
| 7 | 8 | | a) Interior matt walls and ceilings (Gloss < 25@60°) non-tinted | | 10 | 30 | | 8 | | | | | |
| 9 | 10 | | a) Interior matt walls and ceilings (Gloss < 25@60°) tinted | | 10 | 40 | | 8 | | | | | |
| 11 | 12 | | a) Interior matt walls and ceilings (Gloss < 25@60°) tinted | | 10 | 40 | | 8 | | | | | |
| 13 | 14 | | e) Interior trim varnishes and woodstains, including opaque woodstains | | 65 | 30 | | n/a | | | | | |
| 15 | 16 | | | #N/A | #N/A | | #N/A | | | | | | |
| 17 | 18 | | | #N/A | #N/A | | #N/A | | | | | | |
| 19 | 20 | | | #N/A | #N/A | | #N/A | | | | | | |
| 21 | 22 | | | #N/A | #N/A | | #N/A | | | | | | |
| 23 | 24 | | | #N/A | #N/A | | #N/A | | | | | | |
| 25 | 26 | | | #N/A | #N/A | | #N/A | | | | | | |
| 27 | 28 | | | #N/A | #N/A | | #N/A | | | | | | |
| 29 | 30 | | | #N/A | #N/A | | #N/A | | | | | | |

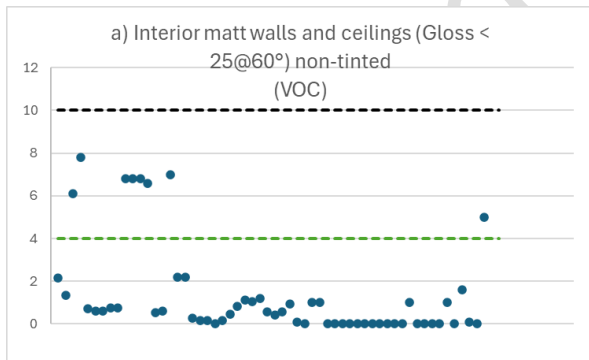
2.4 Criterion 4: SVOC and VOC content

We have already received some initial data on that VOC and SVOC contents before the 1st AHWG meeting, thanks to four Competent Bodies providing us with the excel show above with columns C and E filled out. The data received to date is presented below.

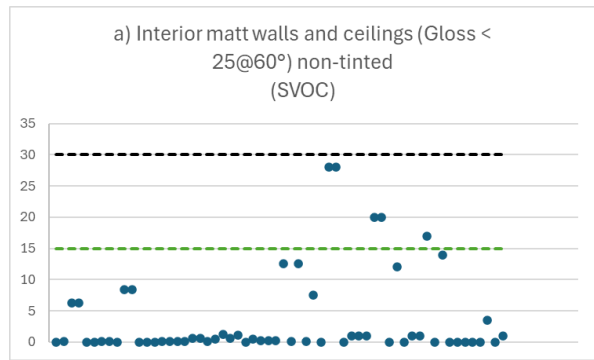
The black line is the current EU ecolabel limit, and the green line is a suggestion for the new limit value for the criteria, based on the current data. Be aware that the percentages indicated below, are based on a limited dataset.

a) Interior matt walls and ceilings (Gloss < 25@60°) non-tinted

VOC



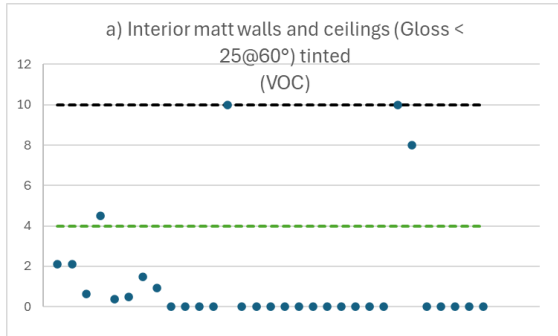
SVOC



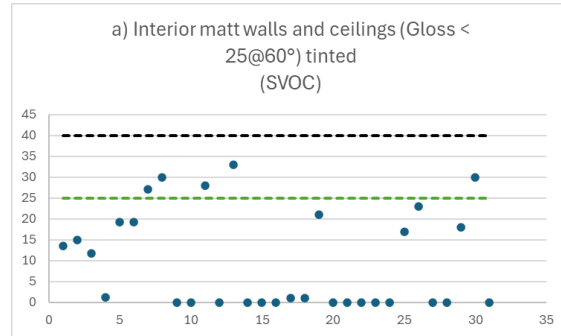
It is suggested to reduce the VOC limit for interior matt walls and ceilings (Gloss < 25@60°) non-tinted from 10 to 4. Currently, with this new limit, 13.8% (8 products) of the EU ecolabelled products would no longer meet the criteria. For the SVOC values, the suggestion is to reduce from 30 to 15, with 12% (7 products) would no longer meet the criteria.

a) Interior matt walls and ceilings (Gloss < 25@60°) tinted

VOC



SVOC



It is suggested to reduce the VOC limit for *interior matt walls and ceilings (Gloss < 25@60°) tinted* from 10 to 4. Currently, with this new limit, 32.2% (10 products) of the EU Ecolabelled products would no longer meet the criteria. For the SVOC values, the suggestion is to reduce from 30 to 25, with 22,5% (7 products) would no longer meet the criteria.

These graphs are shown here only for paints falling under definition a) of the EU Ecolabel criteria document (i.e. interior matt walls and ceilings). Similar graphs were made for the other paint types, and are seen in the Excel file published together with this background document.

The competent bodies did not provided data for the following paint and varnish types.

- *Interior glossy walls and ceilings (Gloss > 25@60°) non-tinted,*
- *Interior glossy walls and ceilings (Gloss > 25@60°) tinted,*
- *Exterior walls of mineral substrate elastomeric,*
- *c) Exterior walls of mineral substrate masonry,*
- *Interior and Exterior minimal build woodstains indoor,*
- *Interior and Exterior minimal build woodstains outdoor,*
- *Primers indoor and non-tinted, with specific properties (opacity),*
- *Primers outdoor or indoor and tinted, no specific properties,*
- *g) Primers outdoor or indoor and tinted, with specific properties (opacity),*
- *Binding primers (and undercoats) indoor and non-tinted, no specific properties,*
- *h) Binding primers (and undercoats) indoor and non-tinted, with specific properties (opacity),*
- *h) Binding primers (and undercoats) outdoor or indoor and tinted, with specific properties (opacity),*
- *One-pack performance coatings indoor and non-tinted, no specific properties,*
- *One-pack performance coatings indoor and non-tinted, with specific properties (opacity),*
- *One-pack performance coatings outdoor or indoor and tinted, no specific properties,*
- *One-pack performance coatings outdoor or indoor and tinted, with specific properties (opacity),*
- *Two-pack reactive performance coatings for specific end use such as floors indoor and non-tinted,*
- *Two-pack reactive performance coatings for specific end use such as floors outdoor or indoor and tinted,*
- *Decorative effect coatings indoor and non-tinted,*

- *Decorative effect coatings outdoor or indoor and tinted*
- *Anti rust paints*

Consequently, new limits and graphics for these categories are unavailable. The study team kindly requests any data you may have for the missing categories or additional data for the existing categories to help establish better new limits for paint and varnishes. Please add this information to the Excel file “**Data_working_sub-group_2**”. distributed with this report.

Comments received from stakeholders after the 1st AHWG meeting

- Stakeholders discuss VOC and SVOC criteria highlighting concerns about existing thresholds, testing methodologies, and implementation details.
- Seek clarity on VOC and SVOC content data, advocating against unrealistic claims like “VOC-free” and emphasizing the importance of aligning criteria with established standards.
- Stakeholders stress the need for a holistic approach considering environmental impact and call for ongoing feedback and revisions to ensure efficacy and environmental responsibility.

2.5 Criterion 5: Yes/No to use of derogations

There is a long list of derogations to the horizontal hazardous substance restrictions in the 2014 EU Ecolabel criteria. While some derogations have been widely discussed (e.g. those on in-can preservatives and dry-film preservatives), there are many more which are there, but it is not clear how much they are used, if at all. So the aim of this part of the information gathering exercise is to find out how often each of the derogations are being used, and if so, with what type of paint or varnish products is it being used? Feedback could ideally be provided in the following format for each CB or license holder:

| CB or license holder checking: | <i>Name of Competent Body or License Holder</i> | |
|--|--|--|
| Number of products checked: | <i>Number of EUEL products checked</i> | |
| Derogation in question | How many products from those checked that USED this derogation | Exactly what TYPE OF PRODUCTS were using the derogation? What substances were derogated (if derogation is for a group). And which hazards applied? |
| 1(a) In-can preservative H331, H400, H410, H411, H412, H317 | | |
| 1(b) Tinting (colourant) machine preservatives. H331, H400, H410, H411, H412, H317 | | |
| 1€ Dry film preservatives. H400, H410, H411, H412, H317 | | |
| 1(d) Preservative stabiliser. | | |
| 2(a) Driers H301, H317, H373, H412, H413 | | |
| 2(b) Anti-skimming agents. H412, H413, H317. | | |
| 3(a) Anti-corrosion pigments. H410, H411, H412, H413. | | |
| 3(b) Verdigris prevention. H412, H413. | | |
| 4(a) Surfactants. H411, H412, H413. | | |
| 4(b) APEOs. | No check needed, this is a ban, not a derogation | |
| 4€ Perfluorinated surfactants | No check needed, this is a ban, not a derogation | |

| CB or license holder checking: | Name of Competent Body or License Holder | |
|--|--|--|
| Number of products checked: | Number of EUEL products checked | |
| Derogation in question | How many products from those checked that USED this derogation | Exactly what TYPE OF PRODUCTS were using the derogation? What substances were derogated (if derogation is for a group). And which hazards applied? |
| 5(a) silicon resin emulsion in white paints, colourants and bases. H412, H413. | | |
| 5(b) Metals and their compounds | | |
| 5€ Mineral raw materials including fillers. H373... | | |
| 5(d) Neutralising agents. H311, H331, H400, H410, H411, H412, H413. | | |
| 5€ Optical brighteners. H413 | | |
| 5(f) Pigments. Barium sulphate, Antimony Nickel within an insoluble TiO ₂ lattice, Cobalt aluminate blue spinel, Cobalt chromite blue-green spinel TiO ₂ (H351, inhalation) Trimethylolpropane (TMP), H361fd | | |
| 6(a) UV protectors and stabilising agents for outdoor paints | | |
| 6(b) Plasticisers | No check needed, this is a ban, not a derogation | |
| 7(a) Formaldehyde | | |
| 8(a) Binders and crosslinking agent (ADH) | | |
| 8(b) Reaction products and residues (methanol) | | |

2.6 Formulation data (optional but very helpful for hotspot analysis)

While not a simple collection of quantitative data necessary to demonstrate compliance with specific EUEL criteria, information on paint and varnish formulations is also welcome in order to carry out more robust LCA screening studies. Uncertainty over the paint and varnish formulations was an issue raised during the 1st AHWG meeting.

Therefore, the study team proposed a typical EUEL formulation based on available data. The proposed formulation can be found in the Excel file “Data_working_sub-group_2”. and inputs on creating a more representative formulation are welcome.

| Proposed typical EUEL formulation for the LCA of INDOOR DECORATIVE paint: | | | Suggested representative indoor decorative paint formulation based on CB or license holder experience | | |
|--|---|--------|--|---------------|-----|
| Ingredient category | Chemical name | wt% | Ingredient category | Chemical name | wt% |
| Additive | Sodium polyphosphate (dispersing agent) | 0,30% | | | |
| Additive | Sodium polyacrylate (dispersing agent) | 0,30% | | | |
| Additive | Mineral oil (defoamer) | 0,20% | | | |
| Additive | Biocide | 0,20% | | | |
| Additive | Calcium carbonate (extender) | 46,20% | | | |
| Additive | Talcum (extender) | 2,00% | | | |
| Additive | Glycol ether (coalescing agent) | 0,40% | | | |
| Additive | Ester alcohol (coalescing agent) | 0,50% | | | |
| Solvent | Water | 33,60% | | | |
| Solvent | Hydroxyethylcellulose | 0,40% | | | |
| Binder | Styrene acrylic latex | 8,00% | | | |
| Pigment | Titanium dioxide | 8,00% | | | |



This table illustrates the proposed formulation of indoor decorative paint. Similar tables have been created for other paint and varnish types and can be found in the accompanying Excel file published with this background document. It can be found under the worksheet titled "Formulations".

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3 Working questions

Questions about criterion 1:

- Can you provide any data? If so, for how many products and by when?
- Do applicants clearly state which type of paint they are using, so that it is easy to know which pigment content limit applies?
- How is the data provided? Is it a calculation of TiO₂ content in g/L divided by the spreading rate (in m²/L) or is the direct number provided without the calculation?

Questions about criterion 2:

- Can you provide any data? If so, for how many products and by when?
- Is the clause for “by-products” ever used by TiO₂ producers to reduce specific waste numbers?
- What is the actual scope of waste included in these numbers from the TiO₂ production?
- Do you agree that the new criteria be based on TiO₂ content rather than ore type?
- Should a specific number be provided by the supplier each year?

Questions about criterion 4:

For the VOC and SVOC content, a discussion during the working sub-group will address the acceptance of the proposed new limits and gather additional data from stakeholders using the supporting Excel file provided together with the report. Key questions will include:

- Can you provide any data? If so, for how many products and by when?
- Are the new proposed limits too strict? If so, why? Or it should they be even stricter? Again, if so, why?
- Are the products that fall outside the new limits specific to a particular type of production or unique to certain countries?
- What inputs do you have for new limits for products that lacked data in the first draft of this report?

Questions about formulations:

Another challenge faced while conducting the technical analysis of paints and varnishes was finding representative formulations for each type of paint and varnish. Questions to address this issue in the working sub-group include:

- Does outdoor paint usually contain titanium dioxide? If so, in what ranges normally?
- What other ingredients are generally encountered in indoor/outdoor paints and outdoor varnish that are missing from the formulations?
- Is any of the ingredients listed in the formulations for indoor/outdoor paints and varnishes no longer in use or been substituted by other ingredients with similar function?
- Are there formulations that better represent average indoor/outdoor paints and varnishes?



4 Minutes from WSG2 meeting

Viegand Maagøe welcomed all participants. The purpose of the meeting was to collect data and inputs on Criterion 1, 2, 3, 4 and 5 to help the study team establish new ambition levels for these criteria.

The following organisations were present:

- Viegand Maagøe
- JRC
- BASF SE
- BASF
- Evonik Operations GmbH
- Titanium Dioxide Manufacturers Association (TDMA)
- Chemours, a member of TDMA

The meeting started with the study team asking if participants could share data related to the criteria. The stakeholders indicated that they were not paint producers and therefore had no data available for sharing. A question was raised about whether CEPE had been contacted to share their data. The study team confirmed that CEPE had been contacted earlier in the project process, and this meeting was arranged to gather additional data.

The study team asked if any participants had comments or data to share regarding the Excel file "Data_working_subgroup_2" shared together with the report concerning WS2 information. Participants said that they did not have data or further comments to provide.

For criterion 2, concerning Titanium Dioxide production, one participant mentioned that they were producers. The study team requested additional information, including the type of data they provide to their clients. Bilateral communication with that one supplier was agreed.

The study team then asked about Criterion 5, specifically if any participants make use of any of the derogations. One stakeholder mentioned they use some derogations in the production of their final product, such as the 1(a) In-can preservative H331, H400, H410, H411, H412, H317. The same stakeholder raised a concern that the new proposed EU Ecolabel version did not clearly include the definition of the difference between an ingredient and an in-going substance, and not how the derogations will be applied to it. The study team requested additional information about which derogations were commonly used by the stakeholders.

No further information or comments were received from the participants after the meeting. Other stakeholders involved in different working sub-groups, including CEPE were contacted. The background material shared with the WSG2 was also sent to these stakeholders to gather inputs on the data and proposed new limits on the excel file. Stakeholders indicated they would try to share more information after the summer vacation, by August.



5 Conclusion

The Working Sub-Group 2 meeting did not provide sufficient data and inputs for the study team regarding the stakeholders' views on the proposed limits for Criteria 1, 2, and 4. The group was intended mainly for Competent Bodies, but none participated. As a result, the study team is awaiting inputs from other stakeholders, expected by August.

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