Call for scientific and technical data on the permitted food additives E 140(i) chlorophylls, E 140(ii) chlorophyllins, E 141(i) copper complexes of chlorophylls and E 141(ii) copper complexes of chlorophyllins

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Deadline for step 1 (Registration of the contact details of business operators interested in submitting data): 10 May 2017

Deadline for step 2 (Confirmation of data submission, deadlines and milestones): 10 October 2017

Background

According to Article 32 of Regulation (EC) No 1333/2008[1], food additives permitted in the EU before 20 January 2009 should be subject to a new risk assessment by the European Food Safety Authority (EFSA). The programme for the re-evaluation of these permitted food additives has been set up by Commission Regulation (EU) No 257/2010[2].

So far EFSA has not identified a major safety concern (such as a proven carcinogenic or genotoxic activity) for any of the re-evaluated food additives. In fact, in most cases EFSA confirms the safety of those food additives at their currently reported uses and use levels. However, for some additives EFSA has identified issues that require a follow-up. Additional specific data is needed to address those issues.

The additives whose safety re-evaluation by EFSA was hindered by limited data availability, but which are not expected to pose an immediate food safety concern, are not going to be immediately removed from the Union list of permitted additives, or their uses and/or use levels revised. Instead, business operators are requested to indicate to the Commission their interest in the continuity of approval of the additive(s) under re-evaluation and in providing, by a certain deadline, the data needed by EFSA to complete its risk assessment. In general, new toxicological studies will be needed to generate these missing data.

Once EFSA has assessed the new data, the current authorisation of the additive(s) may be revised, if needed.

If business operators do not provide the requested data (by the predefined deadline) the present authorisation will be revised based on EFSA's current scientific opinion and the additive(s) may be removed from the Union list of permitted additives. The same applies if the new data submitted is not sufficient for EFSA to conclude the risk assessment, since there will be no successive requests for additional data.

Food additives for which EFSA has identified concerns in terms of exposure or specifications will be subject to the same follow-up approach, but EFSA's assessment of the new data may not always be needed.

The Commission will undertake that the time assigned for addressing issues identified by EFSA is as short as possible and dependent on the time needed to generate and assess the required new data.

[1] OJ L 354, 31.12.2008, p. 16.
[2] OJ L 80, 26.3.2010, p. 19.

EFSA's Scientific Opinion on the re-evaluation of chlorophylls (E 140(i)) as food additives

The EFSA's Panel on Food Additives and Nutrient Sources added to Food (ANS) delivered a scientific opinion re-evaluating the safety of chlorophylls (E 140(i)) when used as food additives[3]. The Panel noted that in Annex II to Regulation (EC) No 1333/2008, chlorophylls and chlorophyllins are authorised with the same E number, E 140. However, according to Commission Regulation (EU) No 231/2012[4], separate specifications are defined for chlorophylls (E 140(i)) and chlorophyllins (E 140(ii)). The Panel decided to re-evaluate these two food additives separately, given their different physico-chemical properties.

The few biological data available indicate that chlorophylls are poorly absorbed by humans and are not metabolised to chlorophyllins (the dephytylated form of chlorophylls). The Panel considered that the few toxicological studies available for chlorophylls were limited and did not comply with the Organisation of Economic Co-operation and Development (OECD) guidelines or current regulatory requirements, and therefore did not allow for an Acceptable Daily Intake (ADI) to be established.

The Panel concluded that the available database for chlorophylls was inadequate for risk assessment. However, chlorophylls are natural dietary constituents, which are present at relatively high concentrations in a number of foods. In addition, the exposure resulting from the use of chlorophylls (E 140(i)) as food additives is lower than the exposure to chlorophylls from the regular diet. Therefore, the Panel concluded that, at the reported use levels, chlorophylls (E 140(i)) are not of safety concern as regards their current use as food additives.

According to the current EU specifications for chlorophylls (E 140(i)) this food additive may be obtained from sources that could not be regarded as regular edible plant materials or foods (grass, lucerne and nettle) for humans. The Panel recommended that the definition and identity of the food additive E 140(i), in particular the specifications, should be updated, to provide more information on the components of the food additive other than chlorophylls, in particular components with biological activity. The possible residual solvents should also be described.

The Panel also recommended that the maximum limits for the impurities of toxic elements (arsenic, lead, mercury and cadmium) in the EU specifications for chlorophylls (E 140(i)) should be revised in order to ascertain that chlorophylls (E 140(i)) as food additives will not be a significant source of exposure to those toxic elements in food.

EFSA's Scientific Opinion on the re-evaluation of chlorophyllins (E 140(ii)) as food additives

The EFSA's Panel on Food Additives and Nutrient Sources added to Food (ANS) delivered a scientific opinion re-evaluating the safety of chlorophyllins (E 140(ii)) when used as food additives[5].

Chlorophyllins (E 140(i)) are obtained by saponification of a solvent extract from sources, such as grass, lucerne and nettle, which could not be regarded as edible plant material or food for humans. The Panel noted that the material used in many studies, identified as "chlorophyllins", was quite often, if not always, a copper complex of chlorophyllins (E 141(ii)). There are no data regarding the absorption, distribution, metabolism and excretion (ADME) and toxicity of chlorophyllins (E 140(ii)).

Considering the available data on chlorophylls (E 140(i)), the Panel concluded that chlorophyllins are not metabolites of chlorophylls in humans and owing to their differences in physico-chemical properties, it was not possible to support read-across for toxicity data between these two compounds. The Panel considered that it is necessary to carefully review the definition and identity of E 140(ii) in order to adequately characterise the food additive E 140(ii)) as used in the market. This will also allow proper assessment of its safety when relevant studies of the compound to which consumers are actually exposed become available.

[3] https://www.efsa.europa.eu/en/efsajournal/pub/4089
[4] OJ L 83, 22.03.2012, p. 1.
[5] https://www.efsa.europa.eu/en/efsajournal/pub/4085

Considering the absence of relevant ADME and toxicity data, and because chlorophyllins (E 140(ii)) are neither natural constituents of the regular human diet nor metabolites of chlorophylls in humans, the Panel concluded that it was not possible to assess the safety of chlorophyllins (E 140(ii)) as food additives. An adequate assessment of the safety of chlorophyllins (E 140(ii)) as food additives would require a sufficient toxicological database in line with its current guidance for submission for food additives evaluations (EFSA ANS Panel, 2012)[6].

EFSA's Scientific Opinion on the re-evaluation of copper complexes of chlorophylls (E 141(i)) and copper complexes of chlorophyllins (E 141(ii)) as food additives

The EFSA's Panel on Food Additives and Nutrient Sources added to Food (ANS) delivered a scientific opinion re-evaluating the safety of copper complexes of chlorophylls (E 141(i)) and copper complexes of chlorophyllins (E 141(ii)) when used as food additives[7].

Copper complexes of chlorophylls (Cu-chlorophylls) (E 141(i)) and copper complexes of chlorophyllins (Cu-chlorophyllins) (E 141(ii)) are prepared from sources that could not be regarded as edible plant material or food (grass, lucerne, and nettle) for humans. Considering their manufacturing process, these compounds cannot be regarded as natural compounds. The Panel noted that very few studies have been conducted using Cu-chlorophylls, which hampered assessment of their safety. In contrast to (non-copper) chlorophylls and chlorophyllins, the available data showed that some components of Cu-chlorophyllins can be absorbed and distributed systematically.

Given the differences in purity, chemical properties, stability and manufacturing process, the Panel considered that it was not possible to use Cu-chlorophyllins (E 141(ii)) data for read-across for Cu-chlorophylls (E 141(i)). The available data were considered inadequate by the Panel to evaluate the genotoxic potential of Cu-chlorophyllins. The Panel considered that, given the discrepancies and uncertainties in the available data concerning the carcinogenic potential of Cu-chlorophyllins, further and adequate evaluation of the possible carcinogenicity of Cu-chlorophyllins was needed. Finally, the Panel concluded that reliable data on absorption, distribution, metabolism and excretion (ADME), genotoxicity, (chronic) toxicity, carcinogenicity, and reproductive and developmental toxicity of Cu-chlorophylls (E 141(i)) and Cu-chlorophyllins (E 141(ii)) were lacking. Therefore, their safety of use as food additives cannot be assessed and the current Acceptable Daily Intake (ADI) should be withdrawn.

In addition, the Panel considered that the specifications should be updated to include information on the non-chlorophyll components of E 141(i), which may represent up to 90 % of the extract, together with the precise identification of the various compounds that are present in the food additives E 141(i) and E 141(ii).

Overall purpose of this call for data

To give the opportunity to business operators to submit the scientific and technical data needed to address issues identified by EFSA in the re-evaluation of the safety of chlorophylls (E 140(i)), chlorophyllins (E 140(ii)), copper complexes of chlorophylls (E 141(i)) and copper complexes of chlorophyllins (E 141(ii)) as food additives.

Scientific and technical data required

The data required to address the various issues identified by EFSA in the re-evaluation of the safety of chlorophylls (E 140(i)), chlorophyllins (E 141(ii)), copper complexes of chlorophylls (E 141(i)) and copper complexes of chlorophyllins (E 141(ii)) as food additives are the following:

[6] http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/2760.pdf
[7] https://www.efsa.europa.eu/en/efsajournal/pub/4151

Chlorophylls (E 140(i))

- Data on the definition and identity of the food additive E 140(i) including data on components with biological activity (e.g. phytoestrogens, phytotoxins and allergens): the current specifications of E 140(i) need to be updated to provide more information about the identity and composition of this food additive, including non-chlorophyll components;
- Data on actual levels of ethanol and methanol in E 140(i): information on the technically unavoidable natural presence of residues of ethanol and methanol (not related to their use as extraction solvents) in E 140(i) should be provided;
- Data on the lowest achievable limits for the impurities of toxic elements (arsenic, lead, mercury and cadmium): the current maximum limits for those impurities in the EU specifications for E 140(i) are too high and therefore should be revised to ensure that food additives will not be a significant source of exposure to those toxic elements in food.

Chlorophyllins (E 140(ii))

- Data on the definition and identity of the food additive E 140(ii): data are needed to review the definition and identity of E 140(ii) in the specifications, in order to adequately characterise the food additive as used in the market. This includes data on the composition of this food additive, covering the identity of the colouring principles as well as of the other components present in the commercial food additive;
- Toxicological data: data from toxicological studies (toxicokinetics and toxicity studies using the compound to which consumers are actually exposed to) are needed to adequately assess the safety of E 140(ii). The toxicological database that needs to be generated should be in line with EFSA's guidance for submission for food additives evaluations (EFSA ANS Panel, 2012);
- Data on the lowest achievable limits for the impurities of toxic elements (arsenic, lead, mercury and cadmium): the current maximum limits for those impurities in the EU specifications for E 140(ii) are too high and therefore should be revised to ensure that food additives will not be a significant source of exposure to those toxic elements in food.

Copper complexes of chlorophylls (E 141(i))

- Data on the definition and identity of the food additive E 141(i): data are needed to review the definition and identity of E 141(i) in the specifications, in order to adequately characterise the food additive as used in the market. This includes data on the composition of this food additive, covering the identity of the colouring principles as well as of the other components present in the commercial food additive. A clarification is also requested concerning the total copper content and the content of copper ions in the additive, as compared with limits laid down in the specifications of E 141(i);
- Toxicological data: data from toxicological studies (toxicokinetics and toxicity studies using the compound to which consumers are actually exposed to) are needed to adequately assess the safety of E 141(i). The toxicological database that needs to be generated should be in line with EFSA's guidance for submission for food additives evaluations (EFSA ANS Panel, 2012);
- Data on the lowest achievable limits for the impurities of toxic elements (arsenic, lead, mercury and cadmium): the current maximum limits for those impurities in the EU specifications for E 141(i) are too high and therefore should be revised to ensure that food additives will not be a significant source of exposure to those toxic elements in food.

Copper complexes of chlorophyllins (E 141(ii))

- Data on the definition and identity of the food additive E 141(ii): data are needed to review the definition and identity of E 141(ii) in the specifications, in order to adequately characterise the food additive as used in the market. This includes data on the composition of this food additive, covering the identity of the colouring principles as well as of the other components present in the commercial food additive. A clarification is also requested concerning the total copper content and the content of copper ions in the additive, as compared with limits laid down in the specifications of E 141(ii);
- Toxicological data: data from toxicological studies (toxicokinetics and toxicity studies using the compound to which consumers are actually exposed to) are needed to adequately assess the safety of E 141(ii) copper complexes of chlorophyllins. The toxicological database that needs to be generated should be in line with EFSA's guidance for submission for food additives evaluations (EFSA ANS Panel, 2012);
- Data on the lowest achievable limits for the impurities of toxic elements (arsenic, lead, mercury and cadmium): the current maximum limits for those impurities in the EU specifications for E 141(ii) are too high and therefore should be revised to ensure that food additives will not be a significant source of exposure to those toxic elements in food.

As already mentioned above, EFSA's "Guidance for submission for food additive evaluations"[8] provides a description of the data requirements for the evaluation of the safety of a food additive and therefore it will be useful to clarify the nature of the data requested. Also EFSA's scientific report on "Indicative timelines for submitting additional or supplementary information to EFSA during the risk assessment process of regulated products"[9] could be useful.

Procedure of the call for data

Step 1: Registration of the contact details of business operators interested in submitting data

Business operators are requested to communicate to the Commission **by 10 May 2017** whether they are interested that chlorophylls (E 140(i)), chlorophyllins (E 141(ii)), copper complexes of chlorophylls (E 141(i)) and/or copper complexes of chlorophyllins (E 141(ii)) remain permitted in the EU and therefore whether they are interested in providing the new data required. This communication should include full contact details of the business operator (name of business operator, name of contact person, postal address, telephone number and email address), as well as a clear indication of which of the requested data (including the food additive concerned) the business operator would be interested in providing. This communication should be submitted to the email address Sante-E2-Additives@ec.europa.eu.

Once the deadline for step 1 has elapsed, the Commission will make publicly available (on DG SANTE's website on food additives[10]) the list of business operators having expressed interest in submitting the data required. This aims at facilitating interactions among business operators and a possible coordinated action in the generation and submission of data.

Communication of interest to submit data would be considered as permission for the Commission to include the details of the party concerned in a list to be published online. In

[8] http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/2760.pdf
[9] http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/3553.pdf
[10] http://ec.europa.eu/food/safety/food_improvement_agents/additives/re-evaluation/index_en.htm

case a party objects to the online publication of its contact details, this should be mentioned on the first communication to the Commission.

Step 2: Confirmation of data submission, deadlines and milestones

Business operators are requested to confirm **by 10 October 2017** their intention to submit the new data required and to provide a list of the data they intend to submit, a timeline for submission of those data as well as a justification for that timeline. When appropriate, the timeline should be in line with EFSA's Scientific Report on "Indicative timelines for submitting additional or supplementary information to EFSA during the risk assessment process of regulated products". Business operators are also requested to provide a list of intermediate milestones of the data generation and when they will be achieved. This communication should be sent to the email address Sante-E2-Additives@ec.europa.eu.

The Commission will acknowledge receipt of this confirmation of data submission and will confirm the proposed timetable for data submission as well as the defined milestones and their time scheduling. Business operators will be requested to keep the Commission informed of the timely achievement of these milestones.

After completion of this step (step 2), the data to be submitted and both deadlines and milestones will be published on the DG SANTE's website[11].

Submission of the required data

Business operators are requested to submit the above-indicated data by the agreed deadline in one paper and two electronic copies (standard physical medium such as CD or DVD). Common electronic formats should be used (e.g. MS Office, Adobe Acrobat Reader) allowing content copying and printing (no content copy protection). The text of the files should be searchable using the search facilities of standard software packages. The submission should include a cover letter stating clearly in the subject line the food additive(s) to which it refers.

All data shall be submitted by registered post to the following contact address:

Maria Iglesia, Head of Unit E2
European Commission
Directorate-General for Health and Food Safety
Directorate E – Food and feed safety, Innovation
Unit E2 – Food Processing Technologies and Novel Foods
B-1049 Brussels

Once the new data are received, they will be submitted to EFSA for evaluation and preparation of a scientific opinion, if appropriate.

Confidential data

Business operators have the right to request a confidential treatment of certain information. They shall indicate which data they wish to be treated as confidential and give verifiable justification for each part for which a confidential treatment is required following the provisions on confidentiality as laid down in Article 12 of Regulation (EC) No 1331/2008[12]. Furthermore, the business operator shall provide the Commission with two paper and electronic versions of the dossier, namely the complete dossier and a second version of the complete dossier without confidential information.

[11] http://ec.europa.eu/food/safety/food_improvement_agents/additives/re-evaluation/index_en.htm
[12] OJ L 354, 31.12.2008, p. 1.

Possibility for EFSA to use the data for the safety assessment of the same substance under other legal or regulatory frameworks

In line with Union policy objectives on animal welfare and testing on vertebrates, EFSA aims to avoid the duplication of testing on vertebrates, and to achieve an optimal use of the relevant financial and human resources by the private sector. Therefore, in anticipation of cases where EFSA may be interested in using or reusing relevant information or data (i.e. technical, toxicological data) for the evaluation of the same substance under a different legal or regulatory framework from the one mentioned above, or for the evaluation of another substance under the same or different legal framework as above, please indicate explicitly in writing, whether by participating in the voluntary submission of relevant data or information, you also give EFSA the permission to use and/or reuse these data for other EFSA safety assessments, and/or for a data sharing exercise with third parties or other international bodies.