QUESTIONS AND ANSWERS

Upcoming EU rules on mineral oil hydrocarbons (MOH)

QUESTIONS ARISING FROM AGRINFO WEBINARS (JUNE 2025)

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Please note that the European Commission has developed a Frequently Answered Questions document on mineral oils in food. Below we seek to provide further clarity on questions that were raised during AGRINFO webinars held in June 2025.

A. The rules today

Q1: If there are no maximum levels today for mineral oil hydrocarbons in food, why are EU Member States' authorities rejecting products and notifying the Rapid Alert System for Food and Feed (RASFF)?

Although there are no maximum levels set in EU law, there is a general principle that only safe food can be placed on the market (General Food Law, Regulation 178/2002, Art. 14). Following discussion, the Commission has recommended (Statement of April 2022 and Clarifications of October 2022) that in the interest of consumer safety, EU Member States should consider taking action where foods contain levels of mineral oil aromatic hydrocarbons (MOAH) above the limit of quantification (see AGRINFO Guidance, p. 7 for further details).

Q2: Why do control bodies in different countries appear to make different decisions about the safety of foods containing MOH?

EU Member States agreed on limits of quantification, above which enforcement action could be taken based on a national risk assessment. Member State control bodies are responsible for evaluating the risks and deciding whether products may not be imported. The approach taken may therefore slightly differ between Member States. One of the advantages of setting maximum levels in EU law is to harmonise enforcement and make things more predictable for exporters. Member States will adapt their enforcement procedures to the new maximum levels (for MOAH) once they apply.

Q3: Where can we find an overview of notifications by EU Member States' control authorities?

The European Commission has an online database, RASFF Window, which provides information on notifications. Searching for 'mineral oil' or 'MOAH' will provide an overview of the products in which MOH have been found, the countries from which they were exported, and often further details on the levels found.

B. How are maximum levels set?

Q4: How does the EU decide the maximum levels?

All maximum levels for contaminants (under Regulation 2023/915) are set at a level that is 'as low as reasonably achievable' taking into account the levels that can be met according to the best available practices. As mineral oil contamination can be avoided through good practices, maximum levels currently under discussion will generally be set at the limit of quantification (LOQ).

Q5: Why are there no maximum levels under discussion for certain products?

In certain foods, such as fresh fruit and vegetables, occurrence data show a very low presence of MOH. There is therefore no consumer health need to set maximum levels and require operators and enforcement bodies to systematically analyse these foods for MOH presence. Nevertheless, *all* food sectors should be applying practices that minimise contact of foods with mineral oils.

Q6: Why are there higher maximum levels under discussion for certain products?

For certain foods, occurrence data (showing levels of MOAH routinely found in samples) indicate that setting maximum levels at the LOQ from January 2027 could considerably hamper the food supply. For example, for some oils and fats, the EU considers it appropriate to discuss temporary maximum levels above the LOQ with a view to generally reaching LOQ maximum levels by 2030 (see AGRINFO Guidance, p. 8 for further details).

C. Scope of maximum levels under discussion

Q7: Will the maximum levels that are under discussion apply to food ingredients used in animal feed?

The contaminant law (Regulation 2023/915) under which MOAH maximum levels would be set only applies to raw materials or ingredients used in food, and not to animal feed.

Q8: What are POSH and are maximum levels also under discussion for these?

Polyolefin oligomeric saturated hydrocarbons (POSH) are saturated hydrocarbons that occur in plastics such as polyethylene (PE) and polypropylene (PP), and can migrate from plastic packaging into food. POSH are often detected as part of MOSH (mineral oil saturated hydrocarbons) when analysing mineral oil contamination in foodstuffs. There are no specific maximum levels under discussion for POSH.

D. Compound and processed foods

Q9: Do MOAH maximum levels apply to ingredients or finished products? Where is it specified?

The maximum levels apply to both ingredients and finished products. Maximum levels are under discussion for raw agricultural commodities, for example cereal grains, and for certain finished products, for example chocolate and food supplements. If the ingredient is included in a finished product mixed with other ingredients ("compound food"), the maximum level is calculated based on the proportion of the ingredients in the compound food (see Q10). If the ingredient is dried or diluted from a raw agricultural commodity for which a maximum MOAH level is set, the concentration or dilution of the MOAH is taken into account when determining the maximum level (see Q11).

Q10: What maximum levels apply when foods are composed of many different ingredients? For example, what about an instant noodle product fried in sunflower oil, containing 30% vegetable oil, 60% wheat flour, and 10% other ingredients?

The approach to compound foods currently under discussion is that until 2030, maximum levels for composed foods should be calculated according to the quantities of ingredients contained. In the example of an instant noodle product:

Product	Maximum level (mg/kg)	Maximum level × proportion of ingredient (mg/kg)
Sunflower oil (30%)	2	0.6
Wheat flour <4% fat (60%)	0.5	0.3
Other ingredients (10%)	No maximum levels set	
Total noodle product		**0.9**

From 2030, the approach under discussion is to set the maximum level at the standard LOQ relevant to the fat content of the *whole* product (see AGRINFO Guidance, Table 1). In this instance, with a noodle product containing >4% fat/oil but ≤50% fat/oil content, the maximum level would then be 1 mg/kg.

Q11: If the food has been dried, such as herbs, or diluted or processed to be used as an ingredient in a food product, what is the maximum level?

If no specific maximum level has been set for dried, diluted, or processed food, the maximum level is calculated by taking the maximum level for the raw agricultural commodity and taking into account the concentration of the contaminant that has been caused by drying or dilution or processing. If foods are controlled by EU competent authorities, operators will be asked to provide justification of specific concentration or dilution factors. Where no information is available, the competent authority will base the factor on available information.

E. Testing/analysis

Q12: Analysis of mineral oil hydrocarbons can provide different results due to measurement uncertainties. Are these taken into account during EU official controls?

The measurement of uncertainty will be taken into account by control bodies analysing MOAH test results. The measurement of uncertainty is typically about 30–40% depending on the analytical method used by the laboratory.

Companies assessing their own products for MOAH content should take the same approach, taking into account the measurement of uncertainty.

Q13: Which methods should be used for analysing MOAH?

The methods for analysis used in official controls will be based on principles set out in Guidance developed by the European Commission's Joint Research Centre. Updated rules on methods of analysis (Regulation 333/2007) are under discussion.

A method commonly used is the "simple" gas chromatography/liquid chromatography-flame ionisation detection (GC/LC-FID) online method, in accordance with the standard ISO 20122:2025-06. For more complicated food matrices (e.g. spices and volatile oils) the analytical results may show interferences, and interpretation of the chromatographic hump is difficult. In such cases the two-dimensional gas chromatography coupled with time-of-flight mass spectrometry and flame ionisation detection

(GCxGC-MS/TOF/FID) method is used for clarification and distinction, in order to get separate results for (mineral) MOH biogenic compounds. This method has not yet been standardised (expected to be completed during 2027 or 2028).

Q14: Can spice extracts and oleoresins be analysed using the same methods?

In principle, the same analytical methods can be used, although these products can be difficult to analyse. Some laboratories have developed expertise in this area, optimising the standard-method GC/LC-FID (in line with ISO standards). Laboratories with this experience should be sought out for testing spice extracts/oleoresins.

Q15: Are there different methods for declaring results in laboratory reports? Which is the relevant approach?

Some laboratories reporting the LC/GC-FID-method provide results for MOSH C10–50 additionally as "calculated" in their reports. Please be aware that the result expressed as "MOAH C10–50 integrated" is important. In recent years, the "integrated" result (which is usually a bit higher than the "calculated" one) has increasingly been considered the most relevant and must be taken as a reference point.

Q16. Does special care need to be taken while sampling foods? Is there a risk of cross-contamination when packing and transporting samples to the laboratory for testing?

Yes, for example, metal containers must not be treated with inner coatings or mineral oil on the inner surface. When using plastic (other than polytetrafluoroethylene, PTFE) containers for the samples, there is a potential for MOH to migrate from the bottle into the sample, which will then influence findings of MOSH and/or MOAH. Glass or PTFE containers/bottles should be used wherever possible, and otherwise aluminium foil should be used for protecting the sample against migration of MOHs from the container. Laboratories generally recommend clients to initiate migration testing for the packaging materials to evaluate any MOH migration into samples. For further details, see Annex.

The European Commission's Joint Research Centre has developed extensive Guidance on sampling , analysis, and data reporting of MOH.

F. Mitigation strategies

Q17: Can you recommend some lubricants that are free from MOAH and MOSH? Do alternatives based on vegetable oils cause an increased risk of microbiological growth?

H1 lubricants are (practically) free from MOAH, and lubricants based on vegetable oils should normally not contain any MOSH and MOAH, but checking for any MOH content in these lubricants is advised. Vegetable oils are typically not as stable as classic lubricants based on mineral oil. However, the risk of enhancing microbiological growth is generally considered to be low.

Q18: Is there an available list of pesticides that contain paraffin oil?

No, a pesticide supplier will be able to identify those products that contain MOSH (possibly also contaminated with MOAH) as an additive.

Q19: How does MOSH/MOAH behave in a farm environment over time? Does it break down or stay in the soil?

Mineral oil hydrocarbons are extremely persistent and will remain in the soil for years.

Q20: Should food business operators incorporate the FoodDrinkEurope MOH Toolbox presented in the webinar in their HACCP-plan?

Not in its entirety. However, those parts in the toolbox that refer to processes relevant to your sector provide a good basis for evaluating and updating your HACCP plan.

Q21: Is it permissible to mix oils with a high level of MOAH contamination with non-contaminated oil to reduce the overall level of lower concentration?

It is a general rule of EU law on contaminants (Regulation 2023/915, Art. 2(2)) that food exceeding maximum levels must not be mixed with food that complies with maximum levels, so with the inclusion of maximum levels for MOAH in this Regulation, this prohibition on mixing will apply to oils (and other foods) containing MOAH.

G. Packaging/food contact materials

Q22: Are there maximum levels or indicative levels for MOSH/MOAH currently under discussion for packaging materials?

Migration limits for MOAH from plastic food contact materials to food are under discussion. Some EU Member States (e.g. France and Germany) have adopted or are discussing setting maximum levels for mineral oils in packaging or printing inks.

Q23: In light of new EU packaging rules (e.g. the review of packaging and packing waste), will packaging manufacturers be increasingly required to use recycled paper in food packaging and could this increase the challenge of meeting the MOAH levels under discussion?

Yes, there could be challenges associated with increased use of recycled paper. In order not to increase MOH levels in food, the use of material barriers should be considered (see the FoodDrinkEurope MOH Toolbox).

Q24: Are there risks in relation to mineral oils associated with using certain coating materials, such as beeswax?

Yes, beeswax is susceptible to environmental pollution and can be a source of MOSH or is (partly) analysed as MOSH. Laboratories recommend clients to initiate analysis of such additives to assess their potential risks of containing MOH.

Q25: Will food manufacturers be able to continue to use wax paper as food packaging in light of the maximum levels under discussion?

Wax from the paper can migrate into food and will be mainly analysed as MOSH, but can also contain MOAH. Laboratories recommend clients to undertake testing on such packaging to evaluate the level of MOH migration from packaging into food (Tenax-method).

H. Specific categories of foods

Q26: Why does the EU in current discussions make a distinction between coffee and tea to be used in making a brew, and instant coffee and tea?

Studies have shown that where coffee and tea are brewed, the MOH stay in the coffee grounds or in the tea leaves and will not migrate into the final brew in significant amounts. However, in beverages made with instant coffee and tea, the presence of MOAH may be more significant. A maximum level set at the LOQ is therefore appropriate for instant coffee and tea. The same principle is relevant to discussions on indicative MOSH levels.

Q27: Will maximum levels be set for food additives and processing aids?

Specific maximum levels for food additives that are waxes are under discussion. If other additives are processed from food materials for which a maximum level has been set (e.g. an emulsifier produced from vegetable oils), the maximum level for the additive should be calculated using a concentration factor from the maximum level of the raw agricultural commodity (see Q11).

ANNEX – Methods of sampling

The EU is discussing an update of Commission Regulation (EC) No 333/2007 laying down the methods of sampling and analysis with the following guidance in relation to mineral oil hydrocarbons.

Each sample shall be placed in a clean, inert container offering adequate protection from contamination, from loss of analytes by adsorption to the internal wall of the container and against damage in transit. All necessary precautions shall be taken to avoid any change in composition of the sample which might arise during transportation or storage.

In case of sampling for PAH [polycyclic aromatic hydrocarbon] analysis, plastic containers shall be avoided if possible as they could alter the PAH content of the sample. Inert, PAH-free glass containers, adequately protecting the sample from light, shall be used wherever possible. Where this is practically impossible, at least direct contact of the sample with plastics shall be avoided, e.g. in case of solid samples by wrapping the sample in aluminium foil before placing it in the sampling container.

In case of sampling for the analysis of mineral oil hydrocarbons:

- After collecting samples, the sample container should be closed with a polytetrafluoroethylene (PTFE)-layered lid or a glass stopper. Otherwise, the sample container must be covered first with aluminium foil before sealing with a cap or stopper. No rubber rings should be used to close the container.

- Pre-packaged food or food contact materials should be wrapped in aluminium foil at the point of sampling and kept wrapped until analysis in order to prevent cross-contamination. Any pre-packaged food sample brought into the laboratory without aluminium foil wrapping should be properly documented. Any contamination of the sample by e.g. the use of tape or adhesives (paper/plastic labels) or contact with paper or paperboard should be prevented. However, the sample must remain properly identifiable by e.g. using a permanent marker.

- Sample containers and aluminium foil, if used, should be checked for MOH contamination.

For more detail, see JRC Guidance on sampling, analysis and data reporting for the monitoring of mineral oil hydrocarbons in food and food contact materials.

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