

Study proposal for EUON: Nano-enabled Food Contact Materials

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The following proposal answers the [call for topics](#) launched by the European Union Observatory for Nanomaterials (EUON). In the context of the Farm to Fork Strategy, the European Commission acknowledges the need for EU laws on Food Contact Materials (FCM) to be revised to improve safety and public health, especially regarding chemicals, and among them nanomaterials¹. Studies have found differing mechanisms of nanomaterials release from food packaging, and OECD points to a need for a better understanding of such migration². Importantly, nanotechnology is increasingly used in active and intelligent food packaging, which represents one of the main application areas of nanomaterials in the food sector³, but a knowledge gap exists concerning the extent to which they are marketed in Europe, along with their potential for migration into food, and their potential risks. Considering that food packaging is a critical source of exposure to chemicals of the general population, innovation and quickly evolving new types of nanomaterials applied in FCMs must be transparent and follow the EU transition to chemicals that are safe and sustainable. The scope of the study would thus be twofold:

1 - Information on FCM containing nanomaterials on the European market

Based on data from ECHA and from third parties (member states, companies, etc.), this first part would gather and analyse information on:

- patents, applied for and granted, in the European Union on nano-enabled FCM, including nanocomposites and edible-coatings containing nanomaterials⁴
- EU projects dedicated to:
 - the development of nano-enabled FCMs
 - the assessment of their risks⁵
- actual products and quantities marketed in the EU, and the companies commercializing them

2 - Recommendations for improving information on nano-enabled FCM

Based on the first part of the study, the second part would explore ways for:

- improving the overall access to reliable data on nanomaterials and nanotechnologies used and marketed in FCM in the EU
- improving transparency and traceability of nanomaterials in FCM throughout the supply chain and towards the consumers
- better assessing health & environmental risks, by analysing the current level of assessment of these nano-scaled materials by public authorities and identifying existing knowledge gaps of the different levels of migration of nanomaterials into food, both from the interior of the packaging and from the surface/interface

¹ COMMISSION STAFF WORKING DOCUMENT EVALUATION of the legislation on food contact materials - Regulation (EC) No 1935/2004, [Evaluation of the legislation on food contact materials](#) (SWD(2022)163), page 45: "*There is clear evidence that the production of FCMs and in particular food packaging, is evolving with new and innovative types of material being used and introduced onto the market, including those that (...) use nanomaterials. Yet, these trends are not well accommodated in the current FCM legislation, which favours risk assessment and risk management of well-established chemistry, with a focus on defined starting substances to produce synthetic polymers in order to manufacture plastics*".

² OECD, [Important Issues on Risk Assessment of Manufactured Nanomaterials](#). Series on the Safety of Manufactured Nanomaterials No. 103, 2022

³ EUON, Food Packaging, <https://euon.echa.europa.eu/food-packaging>, accessed on the 15/07/2022

⁴ Cf. for example <https://onlinelibrary.wiley.com/doi/full/10.1002/fsn3.2557> or <https://link.springer.com/article/10.1007/s42535-022-00391-6>

⁵ in addition to projects on 'safe and sustainable by design' nano-enabled FCM, independent research studying their migration capacity and their potential adverse effects?