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Food

Nanomaterials are increasingly influencing the food sector. Research and development is taking place to investigate the potential benefits and risks of using nanomaterials to change the properties of food, for example, its taste or texture. With the increased use of nanomaterials in the food and feed chain, it is important to know the properties and characteristics of nanomaterials and determine whether they raise any potential health or environmental concerns.

In the EU, the European Food Safety Authority (EFSA) is responsible for the risk assessment of the use of nanomaterials in food and feed, as well as in food contact materials. This is to establish if there are any risks to take into account before the use is authorised. The assessment is done by EFSA's scientific panels, which comprise independent experts from all over Europe. Subsequent authorisation, decided by the Member States and the European Commission, sets out the conditions of use and any labelling requirements for the nanomaterials.

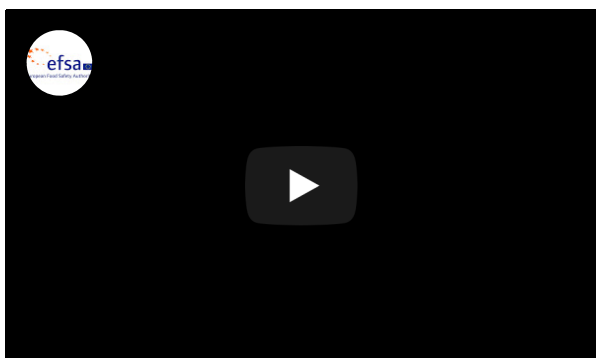
Several regulations already exist in the EU that specifically cover the use of nanomaterials in the food sector.



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Novel food



European Food Safety Authority - What is novel food?

Under EU law, a novel food is a food that was not consumed significantly in the EU before 15 May 1997, when the first regulation on novel food came into force. Novel food can be newly developed, innovative food, food produced using new technologies and production processes, and food which is or has been traditionally consumed outside the EU. Food consisting of, or containing, engineered nanomaterials is also considered as novel food. The regulation on novel food has its own definition of 'engineered nanomaterial', which is also used in the regulation on food information to consumers.

The Novel Foods Regulation sets out obligations that apply to engineered nanomaterials – nanomaterials that have been deliberately engineered to have specific properties – including requirements for placing a novel food on the EU market, such as prior authorisation of the material by the European Commission. A novel food will only be approved for use in the EU if they do not present a risk to public health, are not nutritionally disadvantageous when replacing a similar food, and are not misleading to the consumer.

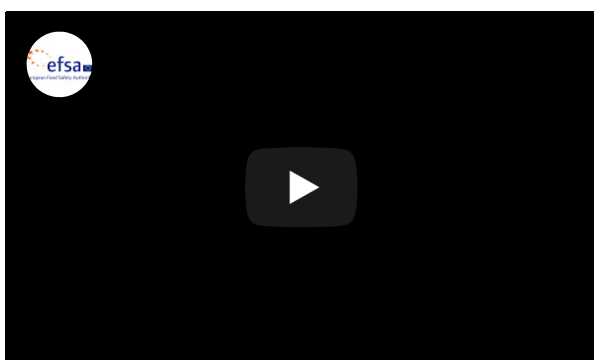
Nanomaterials as food additives

The Food Additives Regulation lays down a list of approved food additives, enzymes and flavourings. If there are changes in the production process or in the starting materials of an already approved food additive, it will be considered a different additive and will need to be re-evaluated. A significant difference in the starting materials is, for example, a change in particle size, including through the use of nanotechnology.

Labelling of food containing engineered nanomaterials

The Food Information to Consumers (FIC) Regulation sets the rules for the labelling of food ingredients, with requirements that apply to engineered nanomaterials in food products. Under the regulation, all ingredients that are engineered nanomaterials need to be clearly indicated in the list of ingredients. The names of such ingredients must be followed by the word 'nano' in brackets.

Nanomaterials in plastic food contact materials



European Food Safety Authority - What do we mean by food contact materials?

Food contact materials are extensively used in the food supply chain to transport and protect food – for instance, we can find them around the sandwiches that we eat and the milk that we buy. There are several regulations that aim to make sure that harmful chemicals are not released into the food, such as the general food contact materials legislation, as well as the Plastic Food Contact Materials Regulation.

The Plastic Food Contact Materials Regulation focusses partly on the potential for release of chemicals from food contact materials, as well as on avoiding the use of harmful chemicals in such materials. It sets out rules on the composition of plastic food contact materials and establishes a Union list of substances that are permitted for use in the manufacture of plastic food contact materials. The regulation also specifies restrictions on the use of these substances and sets out rules to determine the compliance of plastic materials and articles.

For multi-layer materials or articles, even the plastic layer which is not in direct contact with the food and is separated from the food by a functional barrier may contain substances in nanoform only if the nanoform is explicitly authorised.

Nanomaterials in active and intelligent food contact materials

Active and intelligent food contact materials extend shelf-life by maintaining or improving the condition of packaged food by releasing or absorbing substances into or from the food or the environment surrounding it. Some examples are food packaging materials, cutlery, dishes and cutting boards.

The EU regulation on active and intelligent materials and articles foresees the establishment of a Union list of substances permitted for the manufacture of active and intelligent materials.

Further reading

- ▶ Novel Foods Regulation (EC) No 2015/2283 (<http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32015R2283>)
- ▶ European Commission: Novel food (https://ec.europa.eu/food/safety/novel_food_en)
- ▶ Food Additives Regulation (EC) No 1333/2008 (<http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32008R1333>)
- ▶ Food Information to Consumers Regulation – (EC) No 1169/2011 (<http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32011R1169>)
- ▶ Plastic Food Contact Materials Regulation (EC) No 10/2011 (<http://eur-lex.europa.eu/eli/reg/2011/10/oj>)
- ▶ Active and Intelligent Materials and Articles Regulation (EC) No 450/2009 (<http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009R0450>)
- ▶ European Food Safety Authority: activities on nanomaterials and nanotechnology (<https://www.efsa.europa.eu/en/topics/topic/nanotechnology>)

