Advice 11-2021 of the Scientific Committee established at the FASFC on the effect of the use of E171 (TiO2) in foodstuffs on health

Background & Terms of reference

E171 is an authorised food additive added to various products as a white colour and as a colour and texture enhancer. It consists of titanium dioxide (TiO_2) particles of different sizes, including nanoparticles (particles < 100 nm). In recent years, much research has been done on nanoparticles and the possible health effects of TiO_2. Due to concerns about the safety of the food additive E171, the Scientific Committee has been asked advice on the health effects of the use of E171 in food.

At the time the question was submitted, the European Food Safety Authority (EFSA) was working on an update of its safety assessment of E171 based on an extensive literature review. Given the quantity of scientific data published in recent years and the expertise and resources available at EFSA to evaluate and process these data in a transparent manner, the Committee wished to await the publication of this updated EFSA assessment before issuing an opinion.

Method

This opinion is mainly based on the latest EFSA safety assessment of E171 (TiO_2) published in early May 2021, combined with expert opinion.

Conclusions

The updated EFSA safety assessment of E171 (TiO2) was carried out based on a rigorous and systematic review of the many thousands of studies that have become available since the previous EFSA assessment in 2016, including new scientific evidence and data on nanoparticles.

Taking into account all available scientific studies and data, EFSA concluded that TiO_2 can no longer be considered safe as a food additive. Although the evidence for general toxic effects was not conclusive, possible genotoxic effects following the ingestion of TiO_2 particles could not be excluded and a safe level of daily intake could not be established for the food additive E171. After ingestion, the absorption of TiO_2 particles is low, but they can accumulate in the body and remain in the body for a very long time.

Since there are concerns about the possible genotoxic nature of TiO_2 and given the many uncertainties related to, inter alia, absorption and internal exposure, the Scientific Committee endorses EFSA's conclusion that the food additive E171 can no longer be considered as safe.

Currently, the European Commission is working with the Member States on a proposal to phase-out the use of E171 as a food additive. E171 is added to foodstuffs mainly for 'aesthetic' reasons and food processing companies are already looking for alternatives. However, there are often uncertainties about the composition of these alternatives and, consequently, their possible health effects, which is an important issue of attention and requires further follow-up.

The full text is available on this website in dutch and in french.