

Opinion of the EFSA Scientific Panel Re-evaluation of Titanium Dioxide (E 171) as a Food Additive

On 14 September 2016, the European Food Safety Authority's (EFSA) Scientific Panel on Food Additives and Nutrient Sources (ANS) published an Opinion in the EFSA Journal on the safety of titanium dioxide (TiO₂, E 171) when used as a food additive. This Opinion resulted from a re-evaluation of food grade titanium dioxide applying the available data on absorption, distribution and excretion.

The Panel concluded that the absorption of orally administered TiO₂ into the bloodstream is extremely low with the majority of TiO₂ being eliminated by the faeces. A small amount (<0.12%) of oral ingested TiO₂ was absorbed by the gut-associated lymphoid tissue (GALT) and subsequently eliminated. The bioavailability of TiO₂ was determined to be low and appeared to be independent of particle size. Based on the above findings and the available genotoxicity data, the Panel also concluded that orally ingested micro- and nanoparticles are unlikely to present a genotoxic hazard *in vivo*. Overall TiO₂ was considered as safe for use based on margin of safety assessments.

The Panel also recommended additional purposeful, tiered testing be performed to determine an Acceptable Daily Intake (ADI) for food grade TiO₂ (E171). The EU specifications for E171 TiO₂ were recommended to include a detailed particle size distribution and the maximum limits for heavy metal impurities were asked to be revisited.

The Panel's conclusions are consistent with research performed in industry on the safety and bioavailability of orally administered titanium dioxide. The TDMA acknowledges the Panel's recommendations and will work to satisfy remaining questions and ensure the continued safe use of food grade titanium dioxide.

Relevant Links:

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<https://www.efsa.europa.eu/en/efsajournal/pub/4545>

For further information, please contact TDMA Secretariat, at tdma@cefic.be

About TDMA

The Titanium Dioxide Manufacturers Association - TDMA is a sector group of Cefic (the European Chemical Industry Council) and it represents the major producers of titanium dioxide (TiO₂) and acts as their responsible voice in Europe since 1974. TDMA promotes and defends the merits of titanium dioxide (TiO₂) in all suitable applications by bringing forward evidence of its safety and efficacy.

