

## LUM-Press release

### ***Again and again on everyone's lips - titanium dioxide and the scientific characterization of its properties***

Berlin, 23 January 2023: Titanium dioxide is an important white pigment, an important photocatalyst and is characterized by high chemical resistance. It has been used in a wide range of products such as batteries, food, ceramics, plastics, paper, sunscreen formulations, inks and wall paints. It can occur as a dry powder, dispersed in liquids or also bound in coatings and is characterized by very different properties and possible interactions.

The use is not always undisputed, assessments of possible uses can change over the years. Scientific studies and data lead to decisions by authorities, e.g. about the use or phasing out of E171 as a food additive [More on this: <https://www.efsa.europa.eu/de/news/titanium-dioxide-e171-no-longer-considered-safe-when-used-food-additive> 10.1.2023 12:40]. Decisions are challenged through legal channels, and sound scientific results are also required for the legal confirmation or reversal of official decisions. A classification by the EU Commission in 2019 of TiO<sub>2</sub> powder as carcinogenic was overturned by the Court of Justice of the European Union (CJEU) in 2022 [More information on the CJEU ruling: <https://www.farbeundlack.de/artikel/2022/11/eugh-titandioxid-zu-unrecht-als-krebserregend-eingestuft> 10.1.2023 13:00].

Sound scientific data for titanium dioxide can be obtained with accredited methods using various analytical measuring devices from LUM GmbH. At the accredited testing and calibration laboratory Dr. Lerche KG in Berlin, the following methods relevant to TiO<sub>2</sub> are accredited:

- Real-time and accelerated determination of the stability of suspensions and emulsions
- Determination of particle size distribution using sedimentation methods (analytical centrifugation)
- Determination of particle size distribution using gravity sedimentation (photosedimentometer)
- Determination of the density of particles dispersed in liquids using the methods of isopycnic interpolation and the multi-velocity approach
- Sediment height determination in gravitational and centrifugal fields using optical and X-ray detection
- Quantification of the stability of concentrated dispersions using the spatially resolved X-ray measuring principle
- Determination of the Hansen solubility/dispersibility parameters of dispersed nano and microparticles via relative sedimentation times
- Number-based size distribution and concentration of cells and sub-microscale particles (optical flow cytometry).

In a webinar, LUM GmbH will show you the possible uses of almost all LUM measuring devices for the comprehensive characterization of titanium dioxide as a powder, in dispersion/slurry and as a coating component (<https://www.lum-gmbh.com/webinars.html>).

Press contact:  
LUM GmbH  
[www.lum-gmbh.com](http://www.lum-gmbh.com)  
[support@lum-gmbh.de](mailto:support@lum-gmbh.de)