

Recording of nanoparticle number, mean particle size and LDSA in seconds, with **testo DiSCmini**.



You can't see them, you can't smell them, you can't taste them, and yet nanoparticles are everywhere. They occur due to natural processes, as emissions in industrial production and in energy generation, and more materials are being developed with manufactured nanoparticles. Nanoparticles present a special challenge to environmental authorities and research. Because of their variety of size, distribution and composition, extensive tests are necessary

to record and evaluate the risks to the environment and to humans. The portable nanoparticle measuring instrument testo DiSCmini registers the particle number, the mean particle size in a measurement range from 10 to 300 nm and calculates the LDSA value, the surface area of the nanoparticles deposited in the lung. Thus testo DiSCmini provides answers to a number of questions on the subject of environmental, personal and work-related protection.



The challenge.

In order to understand the formation and distribution of nanoparticles and to be able to estimate their influence on humans and the environment, numerous different measurement procedures are necessary: In cases where the distribution of particles in a certain area is to be tested, numerous measurement points need to be recorded in a short time. If one wishes to examine the timed alteration of the particle load at a location, or to determine the source of particle emissions, as many measurement values as possible need to be obtained. And if a statement on the possible effect of the nanoparticles on humans must be made, one needs to know not only the number and size of the particles, but also the probability of their being deposited in the respiratory tract.

The solution.

With the handheld instrument testo DiSCmini, all these measurement procedures can be carried out quickly and easily. With a time resolution of 1 second, it records the particle number and the mean particle size, providing then LDSA value, which indicates the influence on the human organism. Thanks to its small size, the low weight and the patented measurement method which functions without the need for operating materials, the instrument is always ready for use. With one or several testo DiSCmini, larger areas

with a number of measurement locations can be easily monitored and cartographed, for example in towns with heavy traffic. The high time resolution allows the particle sources

to be detected based on the measured data, even if there are no visible signs such as smoke or steam indicating the emission. The change in the number and mean particle size can be recorded over a longer period at one location. The indication of the surface area of the particles deposited in the lung (LDSA) immediately allows statements to be made on the biological burden and on occupational health. The generously sized rechargeable battery is designed for an operating time of up to 8 hours. The measurement data are saved on an SD card as a CSV file, where they can be easily further processed. Data can also be collected real-time by using the driver/data collection tool.

The advantages at a glance.

The portable nanoparticle measuring instrument testo DiSCmini supports environmental authorities and research facilities in all important questions surrounding the topic of nanoparticles:

- Simultaneous measurement of particle size, mean particle size and LDSA, with a time resolution of 1 second
- Mobile operation, without operating materials, unaffected by vibrations and independent of the position of the instrument
- Easy identification of particle sources, easy set-up of measurement grids and long-term measurements

More information.

For more information on testo DiSCmini and answers to all your questions concerning nanoparticle measurement in semi-conductor production, please contact Testo.



The nanoparticle measuring instrument
testo DiSCmini