

Announcement

Comparative measurements of the filter media test rig PMFT with test devices of TÜV NORD

TÜV NORD CERT is a notified body for the certification of particle filtering half masks (CE 0044). In its laboratory for mask testing of DMT (TÜV NORD subsidiary), it has carried out comparative measurements with regard to the penetration test according to EN 149 (respectively EN 13274-7) in cooperation with Palas®, a manufacturer in test stand and measuring equipment.

The aim: to ensure that the measurement results of the PMFT 1000M test stand (Palas GmbH) are comparable to those of a notified body (EN 149 compliant test). The PMFT is used by mask producers for quality assurance.



Figure 1: Transmittance test bench TÜV NORD (measuring chamber with Palas photometer Welas®)



Figure 2: Test stand PMFT from Palas

What was tested:

Three different, randomly selected masks from various manufacturers were tested on the two test systems in the TÜV Nord laboratory. According to the manufacturer, all masks had an FFP2 or KN95 classification. Testing was performed for each mask using both salt and paraffin oil as the test

aerosol. Several specimens of each batch were measured to determine the mask's spread. Each mask was used only once in order to exclude the influence of loading effects on the penetration value.

These are the results:

Figure 2 shows the results of the measurements with NaCl as test aerosol. The medium penetration of all tested specimens and the respective standard deviation are shown. Measurements that fall outside the standard deviation are shown as error bars and indicate the minimum or maximum penetration measured.

Figure 3 shows the results of the measurements with oil as test aerosol. An evaluation adapted to TÜV NORD's laboratory measurement procedure (DMT) was used to calculate the penetration from the PMFT measurement data.

The figures show that differences between the test stands in the medium penetration are significantly smaller than the spread of the respective mask type.

In summary, the comparative measurements have shown that the measured penetrations on the PMFT 1000M agree very well with the results of the TÜV NORD respirator testing laboratory (DMT)

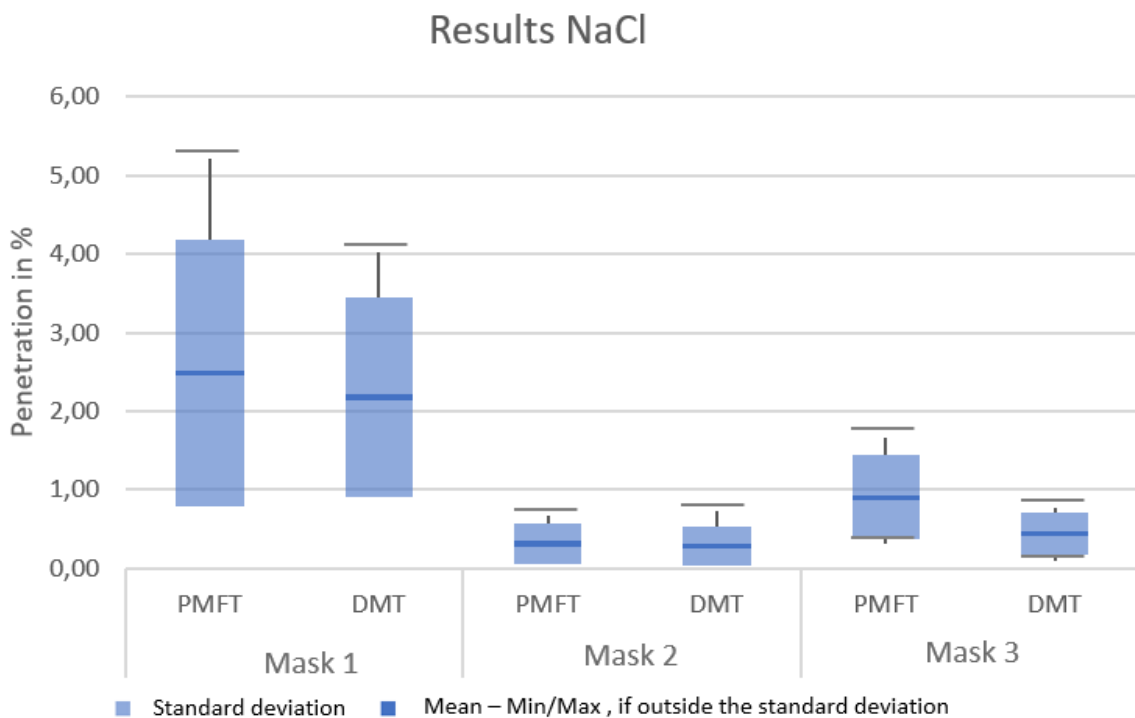


Figure 3: Results of the comparative measurements with NaCl as test aerosol. The mean value and the standard deviation per mask for the measurement on the PMFT 1000M and TÜV NORD's own test rig are plotted. Measurement results outside the standard deviation are shown via error bars.

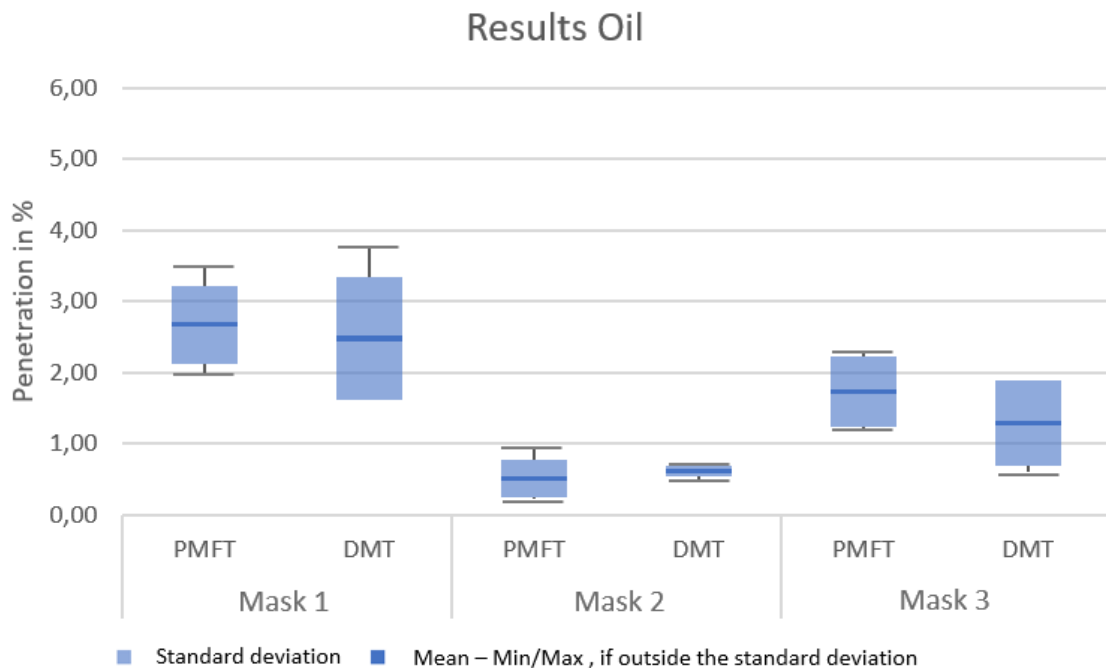


Figure 4: Results of the comparative measurements with oil as test aerosol. The mean value and the standard deviation per mask for the measurement on the PMFT 1000M and TÜV NORD's own test rig are plotted. Measurement results outside the standard deviation are shown via error bars.

About Palas:

The Palas GmbH is a leading developer and manufacturer of high-precision devices for the generation, measurement and characterization of particles in the air. With numerous active patents Palas® develops technologically leading and certified fine dust and nanoparticle measuring devices, aerosol spectrometers, generators and sensors as well as associated systems and software solutions. Palas® was founded in 1983 and employs about 90 employees at the company headquarters in Karlsruhe. Palas GmbH is a subsidiary of Brockhaus Capital Management AG, which is listed in the Prime Standard at the Frankfurt Stock Exchange (BKHT, ISIN: DE000A2GSU42).

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