



Test of respiratory masks better than the standard. Exact analysis of filter mask efficiency from 100 nm up to 40 μm . SARS-CoV-2 size approx. 120 nm - 160 nm.

Description

The PMFT 1000 tests respirators better than the standard with additional accurate analysis of filter mask efficiency for SARS-CoV-2 (size approximately 120 nm to 160 nm). 8 size channels for 100 nm and 180 nm efficiency.

The PMFT 1000 is equipped with aerosol generators for measuring penetration with oil and salt. Measurement procedures for quick quality control (short test) or for testing according to standard (exposure test) are supplied.

Operation and automatic printout of the measurement results are therefore easy even for inexperienced users.

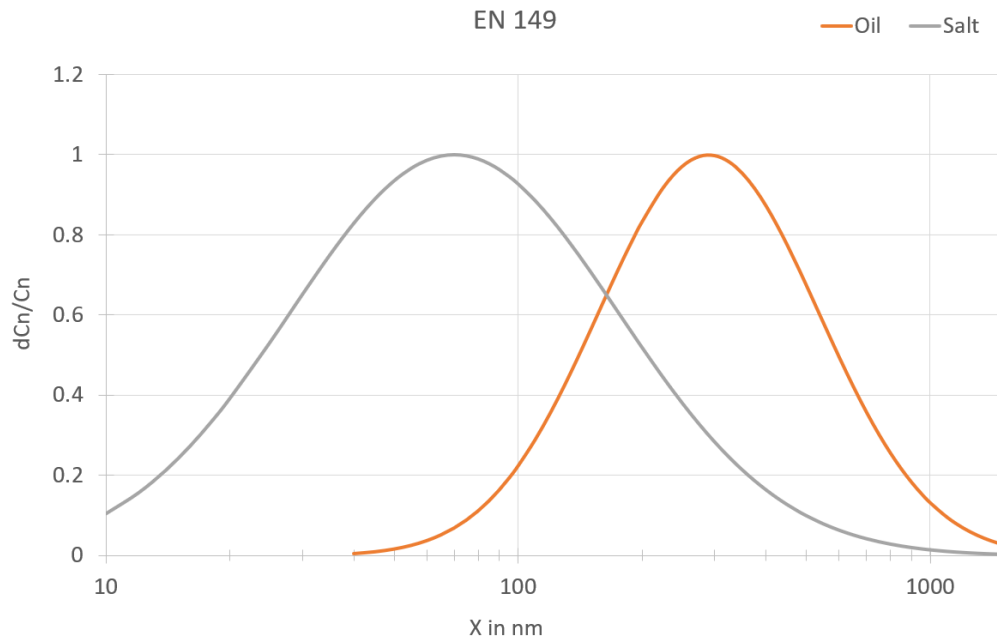
The measurement of total penetration and penetration via particle size is carried out with the high-precision Promo 1000 aerosol photometer.

The size distribution of the test aerosol according to the standard is as follows:

EN 149:

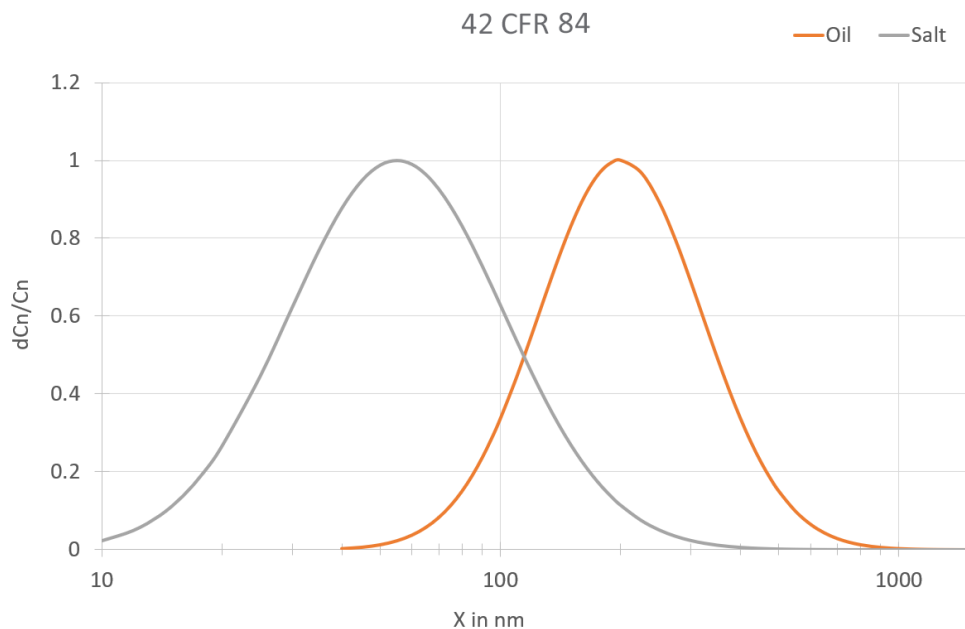
Oil: Media diameter 290 nm | Geom. standard deviation 1.85

Salt: Media diameter 70 nm | Geom. standard deviation 2.5

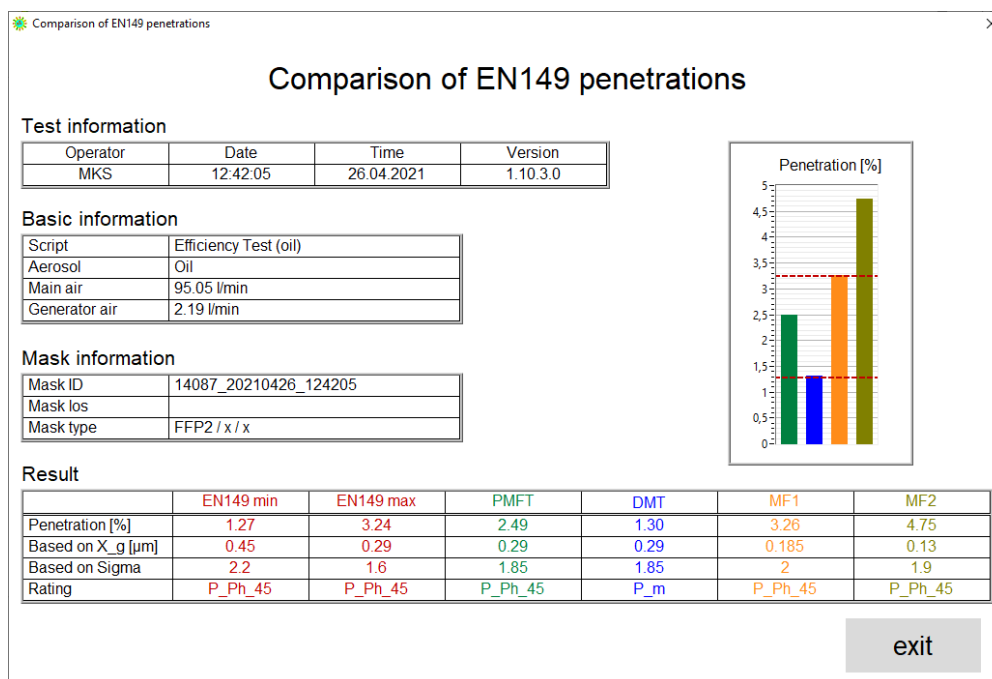
**42 CFR 84 / GB 2626:**

Oil: Media diameter 200 nm | Geom. standard deviation 1.6

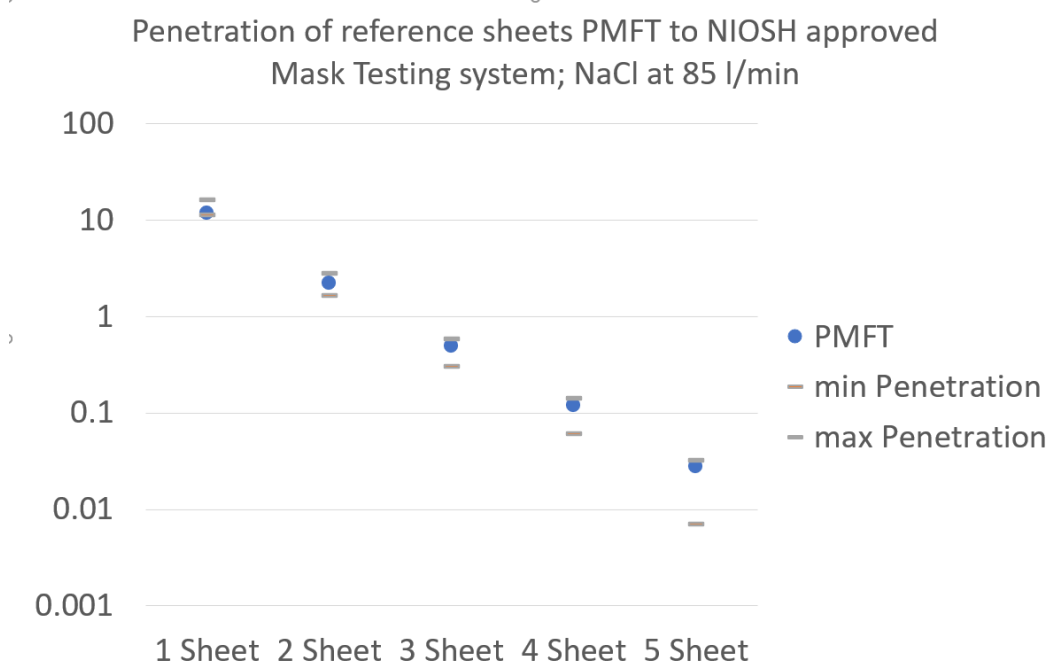
Salt: Media diameter 55 nm | Geom. standard deviation 1.86



Based on the measurement of particle penetration via particle size, the PMFT can also be used to view the tolerances in the particle size distribution according to En 13274-7 as min./max. penetration values. In addition, comparative values to other manufacturers are possible (option).



The comparison with other standards (42CFR84/NIOSH) is also easy with the 42CFR84 upgrade KIT.



Benefits

- Test rig working principle better than EN 143, EN 149 and EN 13274-7
- Equivalent to GB 2626, 42 CFR 84 and ASTM 2299-3 by additional software option
- Test of community masks equivalent to CWA 17553
- Includes two Aerosol generators for oil and NaCl
- Testing of fractional efficiency, e.g. efficiency in whole size range of 100 nm up to 40 μm
- Exact analysis of filter and filter mask efficiency for SARS-CoV-2 (size approx. 120 nm up to 160 nm) in the size range between 100nm and 180 nm we have 8 size channels
- Future proof: Works with any kind of aerosol without adjustments
- Further measurement of differential pressure, e.g. as well within different face velocities to simulate measurement of breath resistance
- Face velocity adjustable between 1.5 - 70 cm/s
- Product capable of fast quality assurance AND continuous optimization in RD (display of size distribution)
- Individual face mask adapter for your product
- Attractive 2 years maintenance package for availability of test rig

<u>The software extension additionally offers:</u>

- Display of penetration results of the entire tolerance range of the size distribution according to EN 13274-7
- Allows the comparison of different test institutes and test systems
- Facilitates certification
- Shows wide range of standards. Depending on the test operation - i.e. particle size distribution of the test aerosol - one and the same mask can perform very well or fail the test

Datasheet

Parameter	Description
Measurement range (size)	0,10 – 40 μm
Volume flow	1 – 27 m^3/h (pressure mode)
Power supply	115/230 V, 50/60 Hz
Dimensions	approx. 600 • 1,800 • 900 mm (W • H • D)
Installation conditions	10 – 40 °C
Test conditions according to standard	19 – 23 °C
Inflow velocity	1.5 to 70 cm/s (others on request)
Differential pressure measurement	0 – 1200 Pa
Test area of the medium	100 cm^2
Aerosols	Dusts (e. g. SAE dusts), salts (e. g. NaCl, KCl), liquid aerosols (e. g. DEHS)
Aerosol concentrations	For SAE Fine without additional dilution up to 1,000 mg/m^3 (ISO A2 Fine)
Compressed air supply	6 – 8 bar

Applications

- Test of respiratory masks
- Exact analysis of filter mask efficiency for e.g. Corona Virus
- Filter testing for HEPA quality

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	EN 149		EN 13274-7	EN 13274-7	GB 2626	GB 2626	42 CFR 84	42 CFR 84
Aerosol	see	EN	NaCl	PaO	NaCl	PaO/DOP	NaCl	DOP
Mean diameter	see	EN	0.06 – 0.1 μm	0.29 – 0.45 μm	0.055 – 0.095 μm	0.165 – 0.205 μm	0.055 – 0.095 μm	0.165 – 0.205 μm
Standard deviation	see	EN	2 – 3	1.6 – 2.2	< 1.86 (by additional software module)	< 1.6 (by additional software module)	< 1.86 (by additional software module)	< 1.6 (by additional software module)
Concentration	see	EN	4 – 12 mg/m ³	15 – 25 mg/m ³	< 200 mg/m ³	(50 mg/m ³) < 200 mg/m ³	< 200 mg/m ³	< 200 mg/m ³
Discharge	-	-	-	-	required	required	required	required
Air flow	see	EN	95 l/min	95 l/min	85 ± 4 l/min	85 ± 4 l/min	85 ± 4 l/min	85 ± 4.25 l/min
Temperature	see	EN	22 ± 3 °C	-	25 ± 5 °C	25 ± 5 °C	25 ± 5 °C	25 ± 5 °C
Rel. humidity	see	EN	< 40 %	-	20 – 40 % (by compressed air)	-	20 – 40 % (by compressed air)	20 – 40 % (by compressed air)
Measurement device	see	EN	Sodium flame photometer	Light scattering photometer	particle detector	particle detector	Light scattering photometer	Light scattering photometer
Measuring time	see	EN	30 s	30 s	lowest eff. during loading	lowest eff. during loading	lowest eff. during loading	lowest eff. during loading
Pause time	see	EN	180 s	180 s	lowest eff. during loading	lowest eff. during loading	lowest eff. during loading	lowest eff. during loading
Exposition	120 mg		120 mg	120 mg	200 ± 5 mg	200 ± 5 mg	200 ± 5 mg	200 ± 5 mg
PMFT remarks	O.K.		O.K.	O.K.	O.K. with upgrade KIT	O.K. with upgrade KIT	O.K. with upgrade KIT	O.K. with upgrade KIT

Table 2: Overview of standards for face mask penetration testing