

DEHS-Test according to DIN EN 14644-3

PARMESS

MAM Cleanroom Measurement



In the following, all times are shown in local time with the corresponding UTC offset.

Print date: 10. Apr 2025 (Europe/Berlin (UTC +2:00))

Page 1 of 4

Protocol sheet

Building: MKLTST Room: MKLTST_R02 Equipment No.: Testequipment
Measurement point: MP-Filter01 Filter class: H14
Measure. point group: Demo MPG Filter Scan-/Leaktest
Description: Demo measurement point group for showcasing scan- and leaktests
Start measuring: 10. Apr 2025

Measuring device used:

Particle measuring device	Name	Flow	Next calibration
Raw air	SIM-SEQ1	472.000 [cm ³ /s]	30. Dec 2050
Clean air	SIM-SEQ2	472.000 [cm ³ /s]	30. Dec 2050

Differential pressure measuring device	Next calibration
DPMD01	02. Apr 2029

Dilution stage	Dilution factor	Next calibration
DS271	100	01. Apr 2026

Probe	Measuring notebook
Probe09	VMWIN11MOQLERO

Filter test measurement results

Filter type	Visual Inspection OK	Differential pressure [Pa]			Scan / Leak test ok
		Actual	Max.	Result	
supply air filter	ok	50.0	500.0	ok	not ok

Overall result	C
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Measured by: **John, Doe (jdoe)**

Participants: n.d. n.d.

Comment filter test: Single filter did not pass the retention requirements

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Signature for: Filter No.: MP-Filter01

Login: **tadmin** Name: **Tom Administrator**

Date: **10. Apr 2025** Comment: **Single filter did not pass the retention requirements, the filter must be exchanged and remeasured. Initiate Low level quality investigation.**
15:20:11

Test Print

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Dynamic measurement

Probe geometry:

Effective width [cm]: 2.55
Height [cm]: n.d.
Diameter [cm]: 3.60

Parameter scantest

Scan velocity [cm/s]: 8.0
Track overlap [cm]: 1.0
 N_a [1]: 0
 N_p [1]: 4
 P_L [%]: 0.01
Flow raw air [m³/s]: 0.00047200
Minimum raw air concentration [1/m³]: 266,915,788
Scan time calculated [min]: 4

Evaluation scantest

Number of possible leaks: 1

Measurement results dynamic measurement

No.	Raw air				Clean air			Penetration rate [%]
	Start measuring	Measurement duration [s]	Particle $\geq 0.3\mu\text{m}$ [1/m ³]	Requirements fulfilled *	Start measuring	Measurement duration [s]	Particle $\geq 0.3\mu\text{m}$	
1	10. Apr 2025 15:00:23+02:00	60	301,887,100	Yes	10. Apr 2025 15:00:23+02:00	60	11,275	0.00373
2	10. Apr 2025 15:01:23+02:00	60	320,157,200	Yes	10. Apr 2025 15:01:23+02:00	60	49,280	0.01539
3	10. Apr 2025 15:02:23+02:00	60	318,672,200	Yes	10. Apr 2025 15:02:23+02:00	60	1,092	0.00034
4	10. Apr 2025 15:03:23+02:00	60	313,630,400	Yes	10. Apr 2025 15:03:23+02:00	60	12,872	0.00410
Summary		240	n.d.	Yes	n.d.	240	n.d.	n.d.

* Particle concentration $\geq 0.3\mu\text{m}$ [1/m³] > Minimum raw air concentration [1/m³]

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Static measurement

Possible leaks

No.	x-coordinate [cm]	y-coordinate [cm]
1	295.0	310.0

Measurement results static measurement

Max. allowable total penetration [%]: 0.01

Leak No.	Sample No.	Start measuring	Raw air		Clean air			Result
			Measurement duration [s]	Particle $\geq 0,3\mu\text{m}$ [1/m ³]	Measurement duration [s]	Acceptance particle count N_{ar}	Counted particles $\geq 0,3\mu\text{m}$ [1]	OCRN
1	1	10. Apr 2025 15:07:24+02:00	60	305,896,700	60	807	47,226	C
1	2	10. Apr 2025 15:08:24+02:00	60	342,517,600	60	907	28,109	C
1	3	10. Apr 2025 15:09:24+02:00	60	297,063,900	60	783	174,092	C