



AB 038

Notified Body No.1437 in the area of EU directives: 89/686/EEC, 2006/42/EC and 2000/14/EC

DEPARTMENT OF PERSONAL PROTECTIVE EQUIPMENT

LABORATORY OF RESPIRATORY PROTECTIVE EQUIPMENT

TEST REPORT

Contract **to perform** testing No.: 505/PB/2017/NO

Subject of the contract: TMKV1 FFP2 NR with valve and TMKV1 FFP2 NR
without valve

Ordering Party:
Sales Representation:

Apex Teknik Tekstil Sağlık Ürünleri San. Tic. LTD. ŞTİ.

Hacı Sabancı Organize Sanayi Bölgesi Ordu Cad. No:23 Sarıçam / Adana

Date of compilation of the test report: 27.10.2017

Main performer: Katarzyna Bociek

Authorized by:
KIEROWNIK
Pracowni Sprzętu Ochrony Układu Oddechowego

dr inż. Anieszka Brodzka

Approved by:

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The report from the tests includes the results of tests carried out within the scope of the accreditation as well as unaccredited tests. The results of tests that are beyond the scope of accreditation are marked with ""

Test object:

Fourty seven filtering half masks TMKV1 FFP2 NR with valve and fourteen filtering half masks TMKV1 FFP2 NR without valve were tested

The filtering half masks were delivered by Apex Teknik Tekstil Sağlık Ürünleri San. Tic. LTD. ŞTİ.
Hacı Sabancı Organize Sanayi Bölgesi Ordu Cad. No:23 Sarıçam / Adana

Samples registry number: NO1/29/2017

Samples receiving date: 16.08.2017

Date of completing the tests: 25.10.2017

Scope of tests:

Accredited tests:

- penetration of sodium chloride: test method in accordance with EN 13274-7 2008 (TMKV1 FFP2 NR with valve) requirements in accordance with EN 149:2001+ A1:2009
- penetration of paraffin oil mist: test method in accordance with EN 13274-7:2008 (TMKV1 FFP2 NR with valve) requirements in accordance with EN 149:2001+ A1:2009
- breathing resistance: test method in accordance with EN 13274-3:2001 (TMKV1 FFP2 NR with valve and TMKV1 FFP2 NR without valve) requirements in accordance with EN 149:2001 + A1:2009
- flammability: test method in accordance with EN 13274-4:2001 (TMKV1 FFP2 NR with valve) requirements in accordance with EN 149:2001+ A1:2009
- exhalation valve pull: test method and requirements in accordance with EN 149:2001+ A1:2009 (TMKV1 FFP2 NR with valve)
- exhalation valve flow: test method and requirements in accordance with EN 149:2001 + A1:2009 (TMKV1 FFP2 NR with valve)
- practical performance test: test method in accordance with EN 13274-2:2001 (TMKV1 FFP2 NR with valve and TMKV1 FFP2 NR without valve) requirements in accordance with EN 149:2001 + A1:2009
- total inward leakage: test method in accordance with EN 13274-1:2001 (TMKV1 FFP2 NR with valve) requirements in accordance with EN 149:2001 * A1:2009
- carbon dioxide content: test method in accordance with EN 13274-6 2001 (TMKV1 FFP2 NR without valve) requirements in accordance with EN 149:2001+ A1:2009
- temperature conditioning: test method in accordance with EN 13274-5:2001 (TMKV1 FFP2 NR with valve and TMKV1 FFP2 NR without valve) requirements in accordance with EN 149:2001+ A1:2009
- mechanical strength: test method and requirements in accordance with EN 149 2001+ A1:2009 (TMKV1 FFP2 NR with valve)

Non-accredited tests:

- simulated wearing treatment: test method and requirements in accordance with EN 149:2001+ A1:2009 (TMKV1 FFP2 NR with valve and TMKV1 FFP2 NR without valve)

Before tests according to requirements of the standard, filtering half masks were submitted to: mechanical strength test (according to 8.3.3 of EN 149:2001 + A1:2009), temperature conditioning (according to 8.3.2 of EN 149:2001 + A1:2009), simulated wearing treatment (according to 8.3.1 of EN 149:2001 + A1:2009) flow conditioning (according to 8.3.4 of EN 149 2001 + A1:2009)

Note

This test report consists of twenty nine pages

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TEST RESULTS OF PENETRATION FOR SODIUM CHLORIDE

according to EN 13274-7:2008

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Penetration of NaCl in accordance with EN 13274-7:2008 $\% \downarrow$ Flow rate $1,6 \text{ dm}^3\text{s}^{-1}$	Requirements in accordance with EN 149:2001+ A1:2009	Estimation of conformity / nonconformity with the standard
35 (M. S., T.C.)	1,46		Filtering half masks fulfill requirements of the standard EN 149:2001+ A1:2009 given in 7.9.2 in range of the first and the second protection class (FFP1, FFP2).
26 (M.S., T.C.)	1,54		
43 (M. S., T.C.)	1,57		
53 (A.R.)	0,86	FFP1 \leq 20%	
57 (A.R.)	1,44	FFP2 $<$ 6%	
84 (A.R.)	0,98	"	
29 (S.W.)	1,74	FFP3 \leq 1%	
37 (S.W.)	3,86		
39 (S.W.)	1,13		

Given results relate to tested samples only.

M.S. — sample after the test for mechanical strength

T.C. — sample after temperature conditioning

A.R. - sample as received

S.W. — sample after the simulated wearing treatment

TEST RESULTS OF PENETRATION FOR PARAFFIN OIL MIST

according to EN 13274-7:2008

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Penetration of paraffin oil mist in accordance with EN 13274-7:2008 [%] Flow rate 1,6 dm³s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
30 (M.S., T.C.)	5,19		
32 (M. S., T.C.)	5,93		
47 (M. S., T.C.)	5,28		
73 (A. R.)	3,50	FFP1 < 20'	Filtering half masks fulfill requirements of the standard EN 149:2001+ A1:2009 given in 7.9.2 in range of the first and second protection class (FFP1, FFP2).
75 (A. R.)	5,00	FFP2 < 6%	
85 (A.R.)	4,30	FFP3 1%	
33 (S.W.)	4,10	"	
41 (S.W.)	5,90		
45 (S.W.)	3,60		

Given results relate to tested samples only.

M.S. — sample after the test for mechanical strength

T.C. — sample after temperature conditioning

A.R - sample as received

S.W. — sample after the simulated wearing treatment

TEST RESULTS OF INHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Inhalation resistance [Pa]				Estimation of conformity / nonconformity with the standard
	Flow rate 0,5 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Flow rate 1,6 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	
40 (A.R.)	42		132		Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
48 (A. R.)	41		130		
49 (A.R.)	41		131		
31 (T.C.)	32	FFP1 < 60 Pa	122	FFP1 < 210 Pa	
38 (T.C.)	39	FFP2 < 70 Pa	124	FFP.2 240 Pa	
42 (T,C.)	34	FFP3 < 100 Pa	119	FFP.3 300 Pa	
29 (S.W.)	40		137	"	
37 (S.W.)	37		131		
39 (S.W.)	41		127		
44 (F. C.)	42		133		
34 (F.C.)	35		127		
46 (F. C.)	37		125		

Given results relate to tested samples only.

A.R. — sample as received

T.C. — sample after temperature conditioning

S.W — sample after the simulated wearing treatment

F C — sample after flow conditioning

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
40 (A.R)	Facing directly ahead	125	FFP1 < 300 Pa FFP2 30a Pa FFP3 < 300 Pa "	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	122		
	Facing vertically downwards	124		
	Lying on the right side	122		
	Lying on the left side	123		
48 (A.R)	Facing directly ahead	145		
	Facing vertically upwards	138		
	Facing vertically downwards	147		
	Lying on the right side	143		
	Lying on the left side	142		

IV ü results relate to tested samples only
* IN- sample as received

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: **filtering half masks** TMKV1 FFP2 NR with valve

No. of sample	The dummy head positions	Exhalation resistance [Pa1]		
		Flow rate 2,7 dm s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
49 (A.R.)	Facing directly ahead	131	FFP1 < 300 PA FFP2 300 FFP3 ≥ 300 Pa	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	130		
	Facing vertically downwards	130		
	Lying on the right side	128		
	Lying on the left side	135		
31 (T.C.)	Facing directly ahead	110		
	Facing vertically upwards	109		
	Facing vertically downwards	107		
	Lying on the right side	110		
	Lying on the left side	110		

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? — sample as received

t. sample after temperature conditioning

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
38 (T C)	Facing directly ahead	120	FFP1 300 FFP2 300 FFP3 ≥ 300 Pa	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2 and FFP3).
	Facing vertically upwards	120		
	Facing vertically downwards	121		
	Lying on the right side	119		
	Lying on the left side	116		
42 (T C)	Facing directly ahead	123		
	Facing vertically upwards	123		
	Facing vertically downwards	124		
	Lying on the right side	121		
	Lying on the left side	125		

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TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
25 (S.W.)	Facing directly ahead	141	FFP1 < 300 PA FFP2 300 FFP3 < 300 Pa	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	141		
	Facing vertically downwards	140		
	Lying on the right side	140		
	Lying on the left side	144		
27 (S.W.)	Facing directly ahead	131		
	Facing vertically upwards	129		
	Facing vertically downwards	129		
	Lying on the right side	127		
	Lying on the left side	131		

• Given results relate to tested samples only.
• 7 samples after the simulated wearing treatment

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
39 (S.W)	Facing directly ahead	126	FFP1 < 300 Pa FFP2 < 300 Pa FFP3 < 300 Pa	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	126		
	Facing vertically downwards	127		
	Lying on the right side	126		
	Lying on the left side	127		
44 (F C)	Facing directly ahead	118		
	Facing vertically upwards	115		
	Facing vertically downwards	114		
	Lying on the right side	116		
	Lying on the left side	119		

All results relate to tested samples only.
 (S.W) – sample after the simulated wearing treatment
 (F C) – sample after flow conditioning

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
34 (FC)	Facing directly ahead	113	FFP1 < 300 PA FFP2 < 300 Pa FFP3 < 300PA	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	113		
	Facing vertically downwards	115		
	Lying on the right side	113		
	Lying on the left side	116		
4C (FC)	Facing directly ahead	107		
	Facing vertically upwards	106		
	Facing vertically downwards	110		
	Lying on the right side	109		
	Lying on the left side	110		

Even results relate to tested samples only
(\ — sample after flow conditioning

**TEST RESULTS OF STRENGTH OF ATTACHMENT OF EXHALATION
VALVES (pull test)
according to EN 149:2001 + A1:2009**

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Test result	Requirements in accordance with EN 149:2001+ A1:2009	Estimation of conformity / nonconformity with the standard
70 (A.R.)	withstands	The exhalation valve shall withstand axially a tensile force of 10 N applied for 10 s	Filtering half masks fulfill requirements EN 149:2001+ A1:2009 given in 7.15 for strength of attachment of exhalation valves (pull test).
27 (T.C.)	withstands		
28 (M.S.)	withstands		

Given results relate to tested samples only.

A.R.- sample as received

T.C. — sample after temperature conditioning

M.S. — sample after the test for mechanical strength

TEST RESULTS OF EXHALATION VALVES
(flow test)
according to EN 149:2001 + A1:2009

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Test result	Requirements in accordance with EN 149:2001+ A1:2009	Estimation of conformity / nonconformity with the standard
44 (A.R.)	Valve operates correctly	The exhalation valve shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s	Filtering half masks fulfill requirements EN 149:2001+ A1:2009 given in 7.15 for exhalation valves (flow test).
34 (T.C.)	Valve operates correctly		
46 (T.C.)	Valve operates correctly		

Given results relate to tested samples only.

A.R.- sample as received

T C — sample after temperature conditioning

TEST RESULTS OF FLAMMABILITY according to EN 13274-4:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Visual inspection	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
76 (T.C.)	Filtering half mask did not burn	Filtering half mask shall not burn or not continue to burn for more than 5 s after removal from the flame.	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.11.
80 (T.C.)	Filtering half mask did not burn		
66 (A.R.)	Filtering half mask did not burn		
81 (A.R.)	Filtering half mask did not burn		

Given results relate to tested samples only.

A.R. — sample as received

T.C. — sample after temperature conditioning

TEST RESULTS OF PRACTICAL PERFORMANCE TEST according to EN 13274-2:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve
No. of sample: 60 (A.R.), 62 (A.R.)

Assessed elements	Positive assessment	Negative assessment	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
1	2	3		
1. The face piece fitting	4	0	Filtering half masks should not have imperfections related to wearer's acceptance	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.7.
2. Head harness comfort	4	0		
3. Security of fastenings	4	0		
4. Speech clearness	4	0		
5. Field of vision	4	0		
6. Materials compatibility with skin	4	0		

Given results relate to tested samples only.

A.R. — sample as received

TEST RESULTS OF TOTAL INWARD LEAKAGE
according to EN 149:2001 + A1:2009

Test object: filtering half masks TMKV1 FFP2 NR with valve

Test subject	No. of sample	Conditioning	Walk	Head left/right	Head up/down	Speech	Walk	Average
1	83	A.R.	1,07	1,17	1,47	3,51	1,32	1,71
2	79	A.R.	0,37	0,52	1,15	1,15	0,85	0,81
3	77	A.R.	0,43	0,57	1,33	1,11	0,42	0,77
4	72	A.R.	0,58	0,60	0,71	1,43	0,49	0,76
5	82	A.R.	0,43	0,47	0,39	1,56	0,45	0,66
6	74	T.C.	0,24	0,27	0,39	1,42	0,34	0,53
7	68	T.C.	0,57	0,58	0,89	3,74	0,68	1,29
8	64	T.C.	0,40	5,69	0,77	3,25	2,61	2,54
9	71	T.C.	0,43	0,50	0,40	1,12	0,35	0,56
10	67	T.C.	1,78	1,75	1,54	2,05	1,37	1,70
Average			0,63	1,21	0,91	2,03	0,89	1,13
Minimum			0,24	0,27	0,39	1,11	0,34	0,53
Maximum			1,78	5,69	1,54	3,74	2,61	2,54

Given results relate to tested samples only.

A.R.- sample as received

T.C. — sample after temperature conditioning

Requirements in accordance with EH 149:2001+ A1:2009	Estimation of conformity / nonconformity with the standard
at least 46 out of the 50 individual results shall be not greater than 25% for FFP1 11% for FFP2 5% for FFP3 and at least 8 out of the 10 individual wearer means shall be not greater than 22% for FFP1 8% for FFP2 2% for FFP3	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.9.1. in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).

TEST RESULTS
of
TEMPERATURE CONDITIONING
according to EN 13274-5:2001

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Visual inspection	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
26 (M. S.)	No changes	After temperature conditioning in accordance with 8.3.2 filtering half mask shall show no appreciable deformation	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 for temperature conditioning.
30 (M.S.)	No changes		
32 (M. S.)	No changes		
35 (M. S.)	No changes		
43 (M. S.)	No changes		
47 (M. S.)	No changes		
31 (A.R.)	No changes		
42 (A.R.)	No changes		
38 (A.R.)	No changes		
34 (A.R.)	No changes		
36 (A.R.)	No changes		
27 (A.R.)	No changes		
71 (A.R.)	No changes		
68 (A.R.)	No changes		
67 (A.R.)	No changes		
64 (A.R.)	No changes		
76 (A.R.)	No changes		
74 (A.R.)	No changes		
80 (A.R.)	No changes		

Given results relate to tested samples only

M S — sample after the test for mechanical strength

A R — sample as received

TEST RESULTS

MECHANICAL STRENGTH
according to EN 149:2001 + A1:2009

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Visual inspection	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
28 (A.R.)	No changes	After mechanical strength in accordance with 8.3.3 filtering half mask shall show no appreciable deformation	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 for mechanical strength.
26 (A.R.)	No changes		
35 (A.R.)	No changes		
30 (A.R.)	No changes		
32 (A.R.)	No changes		
43 (A.R.)	No changes		
47 (A.R.)	No changes		

Given results relate to tested samples only

A.R. — sample as received

TEST RESULTS

SIMULATED WEARING TREATMENT *' according to EN 149:2001 * A1:2009

Test object: filtering half masks TMKV1 FFP2 NR with valve

No. of sample	Visual inspection	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
39 (A.R.)	No changes	After simulated wearing treatment in accordance with 8.3.1 filtering half mask shall show no appreciable deformation	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 for simulated wearing treatment.
37 (A.R.)	No changes		
29 (A.R.)	No changes		
41 (A.R.)	No changes		
33 (A.R.)	No changes		
45 (A. R.)	No changes		

Given results relate to tested samples only.

A.R. — sample as received

TEST RESULTS OF INHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve

No. of sample ber	Inhalation resistance [Pa]				Estimation of conformity / nonconformity with the standard
	Flow rate 0,5 dm s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Flow rate 1,6 dm*s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	
08 (A.R.)	41		128		Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
09 (A.R.)	41		130		
11 (A.R.)	41		125		
02 (T. C)	35	FFP1 < 60 Pa	119	FFP1 < 210 Pa	
03 (T. C)	37	FFP2 < 70 Pa	120	FFP2 24a Pa	
07 (T.C)	40	FFP3 < 100 Pa	123	FFP.3 300 Pa	
01 (S.W.)	41	"	131	"	
05 (S.W.)	41		129		
06 (S.W.)	41		131		

Given results relate to tested samples only

A.R. — sample as received

T.C. — sample after temperature conditioning

S.W. — sample after the simulated wearing treatment

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm s ⁻³	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
08 (A. R)	Facing directly ahead	192	FFP1 • 300 FFP2 300 Pa FFP3 < 300 Pa "	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	191		
	Facing vertically downwards	192		
	Lying on the right side	187		
	Lying on the left side	196		
05 tA.R î	Facing directly ahead	195		
	Facing vertically upwards	198		
	Facing vertically downwards	190		
	Lying on the right side	192		
	Lying on the left side	199		

◀ Owen results relate to tested samples only
A R — sample as received

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve

No. of sample	The dummy head positions	Exhalation resistance (Pa]		
		Flow rate 2,7 dm s ⁻³	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
11 (A R)	Facing directly ahead	194	FFP1 ≤ 300 PA FFP2 30 PA FFP3 ≤ 300 PA	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	193		
	Facing vertically downwards	196		
	Lying on the right side	189		
	Lying on the left side	195		
02 (T C)	Facing directly ahead	173		
	Facing vertically upwards	178		
	Facing vertically downwards	172		
	Lying on the right side	174		
	Lying on the left side	175		

Given results relate to tested samples only

A R — sample as received

T C — sample after temperature conditioning

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
03 (T C)	Facing directly ahead	181	FFP1 • 300 « FFP2 • 30a FFP3 < 300 Pa	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	178		
	Facing vertically downwards	180		
	Lying on the right side	178		
	Lying on the left side	180		
07 IT. C)	Facing directly ahead	186		
	Facing vertically upwards	183		
	Facing vertically downwards	188		
	Lying on the right side	186		
	Lying on the left side	185		

Given results relate to tested samples only.
T C — sample after temperature conditioning

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
01 (S W)	Facing directly ahead	197	FFP1 < 300 Pa FFP2 z 30a Pa FFP3 < 300 Pa	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	193		
	Facing vertically downwards	199		
	Lying on the right side	192		
	Lying on the left side	200		
00 (S W i)	Facing directly ahead	193		
	Facing vertically upwards	197		
	Facing vertically downwards	197		
	Lying on the right side	194		
	Lying on the left side	196		

Obtained results relate to tested samples only.
.W — sample after the simulated wearing treatment

TEST RESULTS OF EXHALATION RESISTANCE according to EN 13274-3:2001

Test object: filteri• 9 half masks TMKV1 FFP2 NR without valve

No. of sample	The dummy head positions	Exhalation resistance [Pa]		
		Flow rate 2,7 dm ³ s ⁻¹	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
06 (S. W)	Facing directly ahead	192	FFP1 < 300 PA FFP2 < 300 PA FFP3 < 300 PA	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.16 in range of the first, the second and the third protection class (FFP1, FFP2, FFP3).
	Facing vertically upwards	191		
	Facing vertically downwards	192		
	Lying on the right side	195		
	Lying on the left side	196		

Given results relate to tested samples only

S W. — sample after the simulated wearing treatment

TEST RESULTS OF CO₂ CONTENT OF THE INHALATION AIR according to EN 13274-6:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve

Test subject number	CO content of the inhalation air [%] by volume	An average CO ₂ content of the inhalation air [%] by volume	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
10 (A.R.)	0,78	0,81	COM content of the inhalation air shall not exceed an average of 1,0% by volume	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.12
12 (A.R.)	0,83			
22 (A.R.)	0.83			

Given results relate to tested samples only.

A.R. — sample as received

TEST RESULTS OF PRACTICAL PERFORMANCE TEST according to EN 13274-2:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve
No. of sample: 04 (A.R.), 21 (A.R)

Assessed elements	Positive assessment	Negative assessment	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
	*1			
1. The face piece fitting	4	0	Filtering half masks should not have imperfections related to wearer's acceptance	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 given in 7.7
2. Head harness comfort	4	0		
3. Security of fastenings	4	0		
4. Speech clearness	4	0		
5. Field of vision	4	0		
6. Materials compatibility with skin	4	0		

Given results relate to tested samples only

A.R — sample as received

TEST RESULTS

TEMPERATURE CONDITIONING according to EN 13274-5:2001

Test object: filtering half masks TMKV1 FFP2 NR without valve

No. of sample	Visual inspection	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
02 (A.R.)	No changes	After temperature conditioning in accordance with 8.3.2 filtering half mask shall show no appreciable deformation	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 for temperature conditioning.
03 (A.R.)	No changes		
07 (A.R.)	No changes		

Given results relate to tested samples only.

A.R — sample as received

**TEST RESULTS
of
SIMULATED WEARING TREATMENT ”)
according to EN 149:2001 + A1:2009**

Test object: filtering half masks TMKV1 FFP2 NR without valve

No. of sample	Visual inspection	Requirements in accordance with EN 149:2001 + A1:2009	Estimation of conformity / nonconformity with the standard
01 (A.R.)	No changes	After simulated wearing treatment in accordance with 8.3.1 filtering half mask shall show no appreciable deformation	Filtering half masks fulfill requirements of the standard EN 149:2001 + A1:2009 for simulated wearing treatment.
06 (A.R.)	No changes		
05 (A.R.)	No changes		

Given results relate to tested samples only.

A.R. — sample as received

END OF THE TEST REPORT