TEST REPORT

2021TM2686

DATE OF RECEPTION
12/11/2021

DATE TESTS
Starting: 17/11/2021
Ending: 30/11/2021

APPLICANT

3 F SRL
VIA SANT'EUFEMIA, SNC
IT-66010 FARA FILIORUM PETRI

Att. PIERAGNOLI CHIARA

IDENTIFICATION AND DESCRIPTION OF SAMPLES

REFERENCES
MASK REF. 3FMASK_COD M3002/3002N

TESTS CARRIED OUT

- IN VITRO DETERMINATION OF BACTERIAL FILTRATION EFFICIENCY (BFE).
- DETERMINATION OF BREATHABILITY (DIFFERENTIAL PRESSURE).
- DETERMINATION OF PRESSURE OF SPLASH RESISTANCE.
- DETERMINATION OF A POPULATION OF MICROORGANISMS ON PRODUCTS.

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*Tests marked with * are not included within the scope of the ENAC accreditation*

SAMPLE DESCRIPTION

PHOTOGRAPHY

Reference [1]

MASK REF. 3FMASK_COD M3002/3002N

LOT number [1]

[1] Data provided for the customer

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RESUMEN / *SUMMARY*

Of the tests carried out on the following reference:

MASK REF. 3FMASK_COD M3002/3002N

ORIGINAL. No pretreatment has been performed.

Tests according to the standard EN 14683:2019+AC: 2019.

Having obtained the following results:

TESTS	RESULTS
Pto 5.2.2 Bacterial Filtration Efficiency (BFE) (%)	**99,83**
Pto 5.2.3 Breathability: Differential pressure (Pa/cm^2)	**100,1**
Pto 5.2.4 Splash resistance pressure (kPa)	**Failure 2 of 32 at 16 kPa**

Notes

- The rest of the standard tests not indicated in this report, have not been evaluated.

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RESULTS

IN VITRO DETERMINATION OF BACTERIAL FILTRATION EFFICIENCY (BFE)

Standard
EN 14683:2019+AC:2019

Test date
25/11/2021 - 26/11/2021

Batch n°[1]

Reference
MASK REF. 3FMASK_COD M3002/3002N

Number of test specimen
5

Size of test specimen
10 cm x 10 cm

Tested area of the test specimen
50 cm^2

Sample side was oriented toward the challenge aerosol
Inner side

Equipment
Six stage Andersen Sampler (03285E12)

Flow of air
28.3 l/min

Test germ
Staphylococcus aureus ATCC 6538

Incubation conditions
24 h at 37 ± 2 ºC

Uncertainty of the test
The relative expanded uncertainty of the test is ± 5 % assay value of the measured.

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RESULTS

Test sample values							
	Level1 (cfu/plate)	Level2 (cfu/plate)	Level3 (cfu/plate)	Level4 (cfu/plate)	Level5 (cfu/plate)	Level6 (cfu/plate)	Total count (ufc)
1	0	0	0	0	1	0	**1**
2	0	0	0	2	2	0	**4**
3	0	0	1	3	3	0	**7**
4	0	2	0	1	3	0	**6**
5	0	0	0	0	1	0	**1**

Legend meaning: cfu: colony forming units

Pre-treatment Original. No pretreatment has been performed.

Calculation of bacterial filtration efficiency:

Test	Filtration efficiency (%)
1	99,96
2	99,82
3	99,69
4	99,73
5	99,96
Mean	**99,83**

Notes

- The “positive hole” conversion factor described by A. Andersen has been applied to the number of CFU colony forming units collected by the cascade impactor for the sample and positive control.
- Tested samples were supplied by the customer.
- Mean of the plate counts of the negative controls: 0 ufc.
- Mean of the total plate counts of the two positive controls: 2228 cfu.

- [1] Data provided by the customer.

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RESULTS

DETERMINATION OF BREATHABILITY (DIFFERENTIAL PRESSURE)

Standard
EN 14683:2019+AC:2019

Principle
It is measure the differential pressure required to move air through a measured surface area at a constant flow of air, with the aim of measuring the pressure of air exchange of the material of the mask.

Test date
29/11/2021 - 30/11/2021

Batch n°(1)

Reference
MASK REF. 3FMASK_COD M3002/3002N

Number of test specimen
5

Size of test specimen
4.9 cm^2

Tested area of the test specimen
Circular, diameter 2.5 cm

Sample conditioning
Tª 21 ± 5 ºC Hr 85 ± 5 %

Flow of air
(8 ± 0,3) l/min

Pre-treatment
Original. No pretreatment has been performed.

Uncertainty of the test
The relative expanded uncertainty of the test is ± 6 % assay value of the measured

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RESULTS

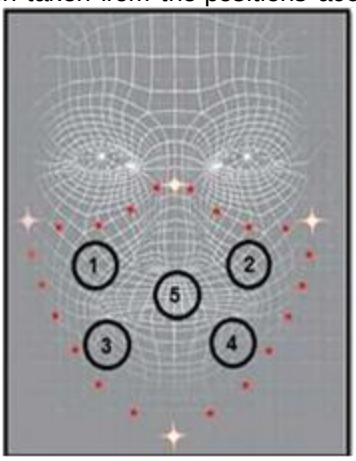
Results

Test specimen	Pos1 Pa	Pos2 Pa	Pos3 Pa	Pos4 Pa	Pos5 Pa	Average Pa	ΔP (Pa/cm²)
1	512,6	488,3	502,1	501,1	479,7	496,8	101,4
2	449,0	469,2	483,1	491,4	500,2	478,6	97,7
3	503,5	507,7	473,3	484,4	512,2	496,2	101,3
4	490,5	477,6	491,2	510,3	488,7	491,7	100,3
5	497,0	493,3	457,8	504,2	490,5	488,6	99,7
					Average	490,4	100,1

Notes

- Tested samples were supplied by the customer.

- The specimens of each mask have been taken from the positions according to the image:



- (1)Data provided by the customer.

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RESULTS

DETERMINATION OF PRESSURE OF SPLASH RESISTANCE

Standard EN 14683:2019+AC:2019 **Test method** ISO 22609:2004

Principle:

A defined volume of synthetic blood is shot with defined speeds of a pneumatically checked valve at the test specimen, in order to simulate a squirting of blood and other body fluids for the sample material. The back of the mask is examined by means of visual inspection and swab on penetrating liquid. The more the resistance against liquid splashes, the more merrier is the liquid resistance.

Test date

22/11/2021 - 23/11/2021

Batch nº(1)

Reference

MASK REF. 3FMASK_COD M3002/3002N

Material of test sample

Mask

Tested area of the test specimen

19.6 cm^2

Sample Conditioning

Tª 21 ± 5 ºC
Hr 85 ± 5 %

Test environmental test conditions

Tª 21 ± 5 ºC
Hr 36 ± 5 %

Test parameters 16 KPa (120 mm Hg) **Volume of synthetical blood** 2.0 mL

Pre-treatment

Original. No pretreatment has been performed.

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RESULTS

Results Pressure 16 KPa (120 mm Hg)		
Replica	**Passed**	**Failed**
1	X	
2	X	
3		X
4	X	
5	X	
6	X	
7	X	
8	X	
9	X	
10	X	
11	X	
12	X	
13	X	
14	X	
15	X	
16	X	
17	X	
18	X	
19	X	
20		X
21	X	
22	X	
23	X	
24	X	
25	X	
26	X	
27	X	
28	X	
29	X	
30	X	
31	X	
32	X	

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RESULTS

Remarks

- To pass the test no more than 3 of 32 samples may fail.

- [(1)]Data provided by the customer.

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RESULTS

DETERMINATION OF A POPULATION OF MICROORGANISMS ON PRODUCTS

Standard
EN 14683:2019+AC:2019; EN ISO 11737-1:2018+A1:2021

Batch number[(1)]

Sample size
4,09 g

Replica number
5

Test date
17/11/2021 - 22/11/2021

Test equipments
Incubator (03068E05) and Incubator (03202E05)

Reference
MASK REF. 3FMASK_COD M3002/3002N

Parameter	Replica1 ufc/g	Replica2 ufc/g	Replica3 ufc/g	Replica4 ufc/g	Replica5 ufc/g	Average ufc/g
Aerobic bacteria to 33 ± 2ºC	12	1	2	6	15	7
Moulds and yeasts to 22 ± 2ºC	<1	<1	<1	<1	<1	<1

Notes
(1)Data provided from customer
The total count of microorganisms in the sample is 7 ufc/g

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RESULTS

In accordance with the standard EN 14683:2019+AC:2019, the results must be in the values of the following table:

Parameter	Units	Requirement
Cleanliness microbial	ufc/g	≤ 30

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Judit Sisternes
Head of Health & Hygiene Products Division

Digitally signed by MARIA ISABEL SORIANO SARRIO - NIF:52716426N
Date: 2021.12.01 09:00:22 +01:00
Reason: Responsable
Location: Alcoy

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