

TEST REPORT

Report No. : CH:TX:1242025027

DATE : 14/07/2021



SAFETIX MID EAST FZE

G1-007, PO BOX 8898,, SAIF ZONE
SHARJAH UAE.

CONTACT PERSON : ASHISH BABULAL

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS :

SAMPLE DESCRIPTION MASK
PERF RESPIRATORY PROTECTION
COLOUR WHITE
STYLE NO. PERF ITOZ
ARTICLE NO. ITOZ 770 PLUS
PHOTO APPENDIX.



SAMPLE RECD ON

03/07/2021

TESTING PERIOD : 03/07/2021 - 12/07/2021

Summary of Test Results

Test Method	Test Name	Status / Performance Level
EN 149:2001+A1.2009	Respiratory protective devices – Filtering half masks to protect against particles	
	Packaging - Clause 7.4	Pass
	Material - Clause 7.5	Pass
	Cleaning and disinfecting - Clause 7.6	Not Applicable
	Practical performance - Clause 7.7	Pass
	Finish of parts - Clause 7.8	Pass
	Total inward leakage - Clause 7.9.1	Pass
	Penetration of filter material: Sodium chloride - Clause 7.9.2	Pass
	Penetration of filter material: Paraffin oil - Clause 7.9.2	Pass
	Compatibility with skin - Clause 7.10	Pass
	Flammability - Clause 7.11	Pass
	Carbon dioxide content of the inhalation air - Clause 7.12	Pass
	Head harness - Clause 7.13	Pass
	Field of vision - Clause 7.14	Pass
	Exhalation valve(s) - Clause 7.15	Not Applicable
	Breathing resistance - Clause 7.16	Pass
Clogging - Clause 7.17	Not Applicable	
Demountable parts - Clause 7.18	Not Applicable	

Per pro SGS India Private Ltd.

R. GANESAN
SECTION INCHARGE

Email your Test Report Related Enquiries at Feedback.SLT@sgs.com

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RESULTS

Respiratory Protective Devices — Filtering Half Masks to Protect against Particles — Requirements,

Testing, Marking

EN 149:2001+A1:2009

Clause 7.4 Packaging

EN 149:2001+A1:2009 (Clause 8.2)

Test Requirement	Results	Comment
Particle filtering half masks shall be offered for sale packaged in such a way that they are protected against mechanical damage and contamination before use.	Comply	Pass

Clause 7.5 Material

EN 149:2001+A1:2009 (Clause 8.2 & 8.3.1 & 8.3.2)

Test Requirement	Results	Comment
Materials used shall be suitable to withstand handling and wear over the period for which the particle filtering half mask is designed to be used.	Comply	Pass
After undergoing the conditioning described in 8.3.1 none of the particle filtering half masks shall have suffered mechanical failure of the facepiece or straps.	Comply	
When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse.	Comply	
Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer.	Comply	

Clause 7.6 Cleaning and Disinfecting

EN 149:2001+A1:2009 (Clause 8.4 & 8.5 & 8.11)

Test Requirement	Results	Comment
If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer. With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.	Not applicable (Not designed to be re-usable)	N.A.

Clause 7.7 Practical Performance

EN 149:2001+A1:2009 (Clause 8.4)

Test Requirement	Results	Comment
The particle filtering half mask shall undergo practical performance tests under realistic conditions. These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard.	No imperfections	Pass

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Clause 7.8 Finish of Parts

EN 149:2001+A1:2009 (Clause 8.2)

Test Requirement	Results	Comment
Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.	No sharp edges or burrs	Pass

Clause 7.9.1 Total Inward Leakage

EN 149:2001+A1:2009 (Clause 8.5)

Test Requirement	Results	Comment
The total inward leakage consists of three components: face seal leakage, exhalation value leakage (if exhalation value fitted) and filter penetration. For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25% for FFP1, 11% for FFP2, 5% for FFP3 and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22% for FFP1, 8% for FFP2, 2% for FFP3	Detail refer to Appendix 1	Meet FFP1 Meet FFP2

Appendix 1: Summarization of Test Data

Inward Leakage Test Data

Subject	Sample No.	Condition	Walk (%)	Head side/side (%)	Head up/down (%)	Talk (%)	Walk (%)	Mean (%)
1#	1	A.R.	0.91	1.14	1.63	1.52	1.19	1.28
2#	2	A.R.	1.10	1.07	1.48	1.60	1.41	1.33
3#	3	A.R.	1.17	1.15	1.61	1.57	1.31	1.36
4#	4	A.R.	0.95	1.06	1.54	1.61	1.24	1.28
5#	5	A.R.	0.99	1.10	1.48	1.63	1.41	1.32
6#	6	T.C.	1.19	1.25	1.91	2.14	1.65	1.63
7#	7	T.C.	1.28	1.50	1.89	2.20	1.49	1.67
8#	8	T.C.	1.21	1.48	1.95	1.89	1.71	1.65
9#	9	T.C.	1.24	1.60	2.04	2.13	1.65	1.73
10#	10	T.C.	1.16	1.51	1.86	2.01	1.80	1.67

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Facial Dimension

Subject	Face length(mm)	Face Width(mm)	Face Depth(mm)	Mouth Width(mm)
1#	119	151	120	55
2#	112	119	121	63
3#	110	129	115	64
4#	115	116	110	69
5#	112	120	109	59
6#	104	125	121	56
7#	116	132	120	52
8#	119	131	113	61
9#	120	129	110	60
10#	122	143	114	65

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Clause 7.9.2 Penetration of Filter Material

EN 149:2001+A1:2009 (Clause 8.11 & EN 13274-7:2019)

Test Requirement	Results	Comment														
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.	Detail refer to Appendix 2	Meet FFP1 Meet FFP2														
<table border="1"> <thead> <tr> <th rowspan="2">Classification</th> <th colspan="2">Maximum penetration of test aerosol</th> </tr> <tr> <th>Sodium chloride test 95 l/min % max.</th> <th>Paraffin oil test 95 l/min % max.</th> </tr> </thead> <tbody> <tr> <td>FFP1</td> <td>20</td> <td>20</td> </tr> <tr> <td>FFP2</td> <td>6</td> <td>6</td> </tr> <tr> <td>FFP3</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			Classification	Maximum penetration of test aerosol		Sodium chloride test 95 l/min % max.	Paraffin oil test 95 l/min % max.	FFP1	20	20	FFP2	6	6	FFP3	1	1
Classification				Maximum penetration of test aerosol												
			Sodium chloride test 95 l/min % max.	Paraffin oil test 95 l/min % max.												
FFP1			20	20												
FFP2	6	6														
FFP3	1	1														

Appendix 2: Summarization of Test Data

Penetration of filter material

Aerosol	Condition	Sample No.	Penetration (%)
Sodium chloride test	As received	1	0.12
		2	0.17
		3	0.17
	Simulated wearing treatment	4	0.28
		5	0.21
		6	0.24
	Mechanical strength +Temperature conditioned	7	0.30
		8	0.38
		9	0.35
Paraffin oil test	As received	10	0.48
		11	0.52
		12	0.54
	Simulated wearing treatment	13	0.59
		14	0.67
		15	0.71
	Mechanical strength +Temperature conditioned	16	0.82
		17	0.92
		18	0.87

Flow conditioning Single filter: 95.0 L/min

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Clause 7.10 Compatibility with Skin

EN 149:2001+A1:2009 (Clause 8.4 & 8.5)

Test Requirement	Results	Comment
Materials that may come into contact with the wearer's skin shall not be known to be likely to cause irritation or any other adverse effect to health.	No irritation or any other adverse effect to health	Pass

Clause 7.11 Flammability

EN 149:2001+A1:2009 (Clause 8.6)

Test Requirement	Results	Comment
The material used shall not present a danger for the wearer and shall not be of highly flammable nature When tested, the particle filtering half mask shall not burn or not to continue to burn for more than 5 s after removal from the flame.	Detail refer to Appendix 3	Pass

Appendix 3: Summarization of Test Data

Flammability

Condition	Sample No.	Result
As received	1	Did not Burn
	2	Did not Burn
Temperature conditioned	3	Did not Burn
	4	Did not Burn

Clause 7.12 Carbon Dioxide Content of The Inhalation Air

EN 149:2001+A1:2009 (Clause 8.7)

Test Requirement	Results	Comment
The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume)	Detail refer to Appendix 4	Pass

Appendix 4: Summarization of Test Data

Carbon Dioxide Content of The Inhalation Air

Condition	Sample No.	Result
As received	1	0.44
	2	0.45
	3	0.43
		Meanvalue: 0.44%

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R E S U L T S

Clause 7.13 Head Harness

EN 149:2001+A1:2009 (Clause 8.4 & 8.5)

Test Requirement	Results	Comment
The head harness shall be designed so that the particle filtering half mask can be donned and removed easily.	Comply	Pass
The head harness shall be adjustable or self-adjusting and shall be sufficiently robust to hold the particle filtering half mask firmly in position and be capable of maintaining total inward leakage requirements for the device.	Comply	

Clause 7.14 Field of Vision

EN 149:2001+A1:2009 (Clause 8.4)

Test Requirement	Results	Comment
The field of vision is acceptable if determined so in practical performance tests.	Comply	Pass

Clause 7.15 Exhalation Valve(s)

EN 149:2001+A1:2009 (Clause 8.2 & 8.9.1 & 8.3.4 & 8.8)

Test Requirement	Results	Comment
(a) A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations.	Not applicable due to exhalation value	N.A
(b) If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.	Not applicable due to exhalation value	
(c) Exhalation valve(s), if fitted, shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s.	Not applicable due to exhalation value	
(d) When the exhalation valve housing is attached to the face blank, it shall withstand axially a tensile force of 10N applied for 10 s.	Not applicable due to exhalation value	

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Clause 7.16 Breathing Resistance

EN 149:2001+A1:2009 (Clause 8.9)

Test Requirement	Results	Comment																							
The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table.	Detail refer to Appendix 5	Meet FFP1 Meet FFP2																							
<table border="1"> <thead> <tr> <th rowspan="2">Classification</th> <th colspan="3">Maximum permitted resistance (mbar)</th> </tr> <tr> <th colspan="2">Inhalation</th> <th>Exhalation</th> </tr> <tr> <td></td> <th>30 l/min</th> <th>95 l/min</th> <th>160 l/min</th> </tr> </thead> <tbody> <tr> <td>FFP1</td> <td>0.6</td> <td>2.1</td> <td>3.0</td> </tr> <tr> <td>FFP2</td> <td>0.7</td> <td>2.4</td> <td>3.0</td> </tr> <tr> <td>FFP3</td> <td>1.0</td> <td>3.0</td> <td>3.0</td> </tr> </tbody> </table>			Classification	Maximum permitted resistance (mbar)			Inhalation		Exhalation		30 l/min	95 l/min	160 l/min	FFP1	0.6	2.1	3.0	FFP2	0.7	2.4	3.0	FFP3	1.0	3.0	3.0
				Classification	Maximum permitted resistance (mbar)																				
Inhalation			Exhalation																						
			30 l/min	95 l/min	160 l/min																				
FFP1	0.6	2.1	3.0																						
FFP2	0.7	2.4	3.0																						
FFP3	1.0	3.0	3.0																						

Appendix 5: Summarization of Test Data

Breathing resistance (mbar)

Specimen	Condition	Inhalation resistance (mbar)		Exhalation resistance (mbar)				
		At 30 l/min	At 95 l/min	At 160 l/min				
		Facing directly ahead	Facing directly ahead	Facing directly ahead	Facing vertically upwards	Facing vertically downwards	Lying on the left side	Lying on the right side
1	As Received	0.53	2.02	2.79	2.70	2.73	2.75	2.74
2		0.54	2.03	2.77	2.79	2.81	2.75	2.80
3		0.53	2.01	2.73	2.71	2.75	2.74	2.76
1	After temperature conditioning	0.45	1.86	2.61	2.55	2.57	2.60	2.56
2		0.43	1.84	2.51	2.57	2.59	2.53	2.55
3		0.43	1.84	2.50	2.58	2.54	2.57	2.53
1	After Simulated wearing	0.48	1.91	2.62	2.64	2.60	2.65	2.63
2		0.50	1.94	2.69	2.66	2.61	2.64	2.67
3		0.51	1.96	2.65	2.69	2.71	2.64	2.70

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Clause 7.17 Clogging

EN 149:2001+A1:2009 (Clause 8.9 & 8.10)

Test Requirement	Results	Comment																			
<p><u>Clause 7.17.2 Breathing resistance Valved particle filtering half masks:</u> After clogging the inhalation resistances shall not exceed: FFP1: 4 mbar, FFP2: 5 mbar, FFP3: 7 mbar at 95L/min continuous flow The exhalation resistance shall not exceed 3 mbar at 160 L/min continuous flow.</p> <p><u>Valve less particle filtering half masks:</u> After clogging the inhalation and exhalation resistances shall not exceed: FFP1: 3 mbar, FFP2: 4 mbar, FFP3: 5 mbar at 95L/min continuous flow</p>	Optional for single shift device only	N.A																			
<p><u>Clause 7.17.3 Penetration of filter material</u> All types (valved and valve less) of particle filtering half masks claimed to meet the clogging requirement shall also meet the requirements.</p> <table border="1"> <thead> <tr> <th rowspan="3">Classification</th> <th colspan="2">Maximum penetration of test aerosol</th> </tr> <tr> <th>Sodium chloride test 95 l/min</th> <th>Paraffin oil test 95 l/min</th> </tr> <tr> <th>%</th> <th>%</th> </tr> </thead> <tbody> <tr> <td></td> <td>max.</td> <td>max.</td> </tr> <tr> <td>FFP1</td> <td>20</td> <td>20</td> </tr> <tr> <td>FFP2</td> <td>6</td> <td>6</td> </tr> <tr> <td>FFP3</td> <td>1</td> <td>1</td> </tr> </tbody> </table>	Classification	Maximum penetration of test aerosol		Sodium chloride test 95 l/min	Paraffin oil test 95 l/min	%	%		max.	max.	FFP1	20	20	FFP2	6	6	FFP3	1	1	Optional for single shift device only	N.A
Classification		Maximum penetration of test aerosol																			
		Sodium chloride test 95 l/min	Paraffin oil test 95 l/min																		
	%	%																			
	max.	max.																			
FFP1	20	20																			
FFP2	6	6																			
FFP3	1	1																			

Clause 7.18 Demountable Parts

EN 149:2001+A1:2009 (Clause 8.2)

Test Requirement	Results	Comment
All demountable parts (if fitted) shall be readily connected and secured, where possible by hand	No demountable parts present in the mask	N.A

***** End of Report *****