


# Test Report Baumusterprüfung



## Test Report

Report No.: [2020] WSZ FHL NO.5734

Product Name Filtering half mask

Applicant NEOLITHIC TECH CO.,LTD.

Manufacturer NEOLITHIC TECH CO.,LTD.

Test Type Entrusted inspection




Jiangsu Guojian Testing Technology Co., Ltd.  
3/F., Unit D, Xingye Building, Taihu International Tech-Park, Wuxi, Jiangsu, China

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## Test Report

Product name	Filtering half mask	Model name	DOC-TNC
		Brand	DOC
Laboratory/ Add.	Jiangsu Guojian Testing Technology Co., Ltd./ 3/F., Unit D, Xingye Building, Taihu International Tech-Park, Wuxi, Jiangsu, China		
Applicant/ Add./Tel	NEOLITHIC TECH CO.,LTD./Room 108, Building 1, No. 13, Shinan Road, Nansha District, Guangzhou, China/18928760666		
Manufacturer/ Add./Tel	NEOLITHIC TECH CO.,LTD./Room 108, Building 1, No. 13, Shinan Road, Nansha District, Guangzhou, China/18928760666		
Sample classification	FFP3	Sample number	GW5734-2020
Sample quantity	110 pcs	Date of receipt of sample	18/05/2020
Test type	Entrusted inspection	Article/Batch/Style number	DOC-TNC
Date (s) of performance of tests	18/05/2020-28/05/2020	Testing location	Same as the Laboratory
Sample state	Meeting the requirements of testing	Sample description	Refer to page 3
Test standard(s)	EN 149:2001+A1:2009 Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking		
Test items	Packaging, material, practical performance, finish of parts, compatibility with skin, flammability, carbon dioxide content of the inhalation air, head harness, field of vision, penetration of filter material, breathing resistance, total inward leakage.		
Test conclusion	The samples upon testing comply with FFP3 classification requirements according to the standard EN 149:2001+A1:2009. The details of test results see on Page 3-11. Date of issue: 14/06/2020		
Note	The test results presented in this report relate only to the submitted sample is received.		



Su Hegen 苏赫根    Wan Heng 万恒    Yanu Ying 晏宇  
 Approver (name, signature)    Reviewer (name, signature)    Chief Tester (name, signature)

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Sample description:	DOC-TNC
<b>Test item particulars:</b>	
Type of use	<input type="checkbox"/> re-usable particle filtering half mask <input checked="" type="checkbox"/> single shift only particle filtering half mask
Classes of devices	<input type="checkbox"/> FFP1 <input type="checkbox"/> FFP2 <input checked="" type="checkbox"/> FFP3
Exhalation valve(s)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Inhalation valve(s)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Designed to protect against both solid & liquid aerosols:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Possible test case verdicts:</b>	
- Test case does not be required to the test object	NRq (Not required)
- Test case does not apply to the test object	N/A (Not Applicable)
- Test object does meet the requirement	P (Pass)
- Test object does not meet the requirement	F (Fail)
<b>General remarks:</b>	
The test results presented in this report relate only to the submitted sample as received. This report shall not be reproduced, except in full, without the written approval of the issuing Laboratory can provide assurance that parts of a report are not taken out of context.	
Determination of the test results includes consideration of measurement uncertainty from the test equipment and methods.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
<b>Environmental condition of the testing in this report:</b>	
1) Unless otherwise specified, the ambient temperature for testing shall be 25 °C;	
2) T.C. Temperature conditioned:	
a) for 24 h to a dry atmosphere of 70 °C;    b) for 24 h to a temperature of -30 °C; and return to room temperature 25 °C for 4 h between exposures and prior to subsequent testing.	

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S.No (CLNo)	Test item	Unit	Technical requirements	Test result	Single item decision
1 (7.3)	Visual inspection	Marking/ information	Marking and the information supplied by the manufacturer, requirements refer to Cl.9 and Cl.10	The clause were not required	NRq
2 (7.4)	Packaging	Visual inspection	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.	Particle filtering half masks packaged and protected against mechanical damage and contamination.	Pass
3 (7.5)	Material	Visual inspection	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.	Materials were suitable withstand handling and wear.	Pass
			After undergoing S.W., none of the particle filtering half masks shall have suffered mechanical failure of the facepiece or straps.	Sample 1: neither facepiece nor straps have mechanical failure Sample 2: neither facepiece nor straps have mechanical failure Sample 3: neither facepiece nor straps have mechanical failure	
			After undergoing S.W. and T.C., none of the particle filtering half masks shall not collapse.	Sample 4: no collapse Sample 5: no collapse Sample 6: no collapse	
			Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer.	Not constitute a hazard or nuisance for the wearer	
4 (7.6)	Cleaning and disinfecting		Particle filtering half mask designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer. Testing shall be done in accordance with 8.4 and 8.5. Wash 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. Testing shall be done in accordance with 8.11.	<input type="checkbox"/> Fulfill the requirements after testing, or <input checked="" type="checkbox"/> The Particle filtering half mask is NOT re-usable according to information supplied by manufacturer	N/A

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Inverkehrbringer

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S.No. (C1No)	Test item	Unit	Technical requirements	Test result	Single item decision
5 (7.7)	Practical performance	Head harness comfort	Head harness should be comfortable.	Sample 1: Has the feeling of comfortable wearing Sample 2: Has the feeling of comfortable wearing	Pass
		Security of fastenings	Fastenings are safe and reliable	Sample 1: All fastenings are firm Sample 2: All fastenings are firm	
		Field of vision	Field of vision is acceptable	Sample 1: Having a wider visual field Sample 2: Having a wider visual field	
6 (7.8)	Finish of parts	Visual inspection	Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.	Pass	Pass
7 (7.9.2)	Leakage—Permeation of filter material	Sodium chloride	≤ 1%	A.R. <sup>1)</sup> 0.1%, 0.1%, 0.1% S.W. <sup>2)</sup> 0.1%, 0.2%, 0.1% M.S. <sup>3)</sup> (C4) 0.2%, 0.2%, 0.3%	Pass
		Paraffin oil	≤ 1%	A.R. <sup>1)</sup> 0.1%, 0.1%, 0.2% S.W. <sup>2)</sup> 0.3%, 0.1%, 0.2% M.S. <sup>3)</sup> (C2) 0.8%, 0.7%, 0.7%	

<sup>1)</sup> average penetration over a time of 30s, beginning 3 min after the start of the test reported  
<sup>2)</sup> max. penetration during exposure test reported.  
<sup>3)</sup> Pass

The penetration of the filter of the particulate filtering half mask shall meet the requirements below:  
 Maximum penetration of sodium chloride aerosol test 75 L/min max. FFP1: 20%, FFP2: 8%, FFP3: 1%  
 Maximum penetration of paraffin oil aerosol test 75 L/min max. FFP1: 20%, FFP2: 6%, FFP3: 1%

S.No. (C1No)	Test item	Unit	Technical requirements	Test result	Single item decision
8 (7.10)	Compatibility with skin		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.	A.R.: 8 pcs did not cause irritation T.C.: 8 pcs did not cause irritation	Pass
9 (7.11)	Flammability		When tested, the particulate filtering half mask shall not burn or fuse to continue to burn (or more than 5s after removal from the flame).	A.R.: The sample is burning. Burning time: 0.1s The sample is burning. Burning time: 0.1s T.C.: The sample is burning. Burning time: 0.1s The sample is burning. Burning time: 0.1s	Pass
10 (7.12)	Carbon dioxide content of the inhalation air		The carbon dioxide content of the inhalation air (total space) shall not exceed an average of 1.0 % (by volume). Remark: 1) half masks (S1, S2 and S3) A.R. tested.	Sample 1: 0.639% Sample 2: 0.6430% Sample 3: 0.6430% average: 0.64%	Pass
11 (7.13)	Head harness		The head harness shall be designed so that the particulate filtering half mask can be donned and removed easily. The head harness shall be adjustable or self-adjusting and shall be sufficiently robust to hold the particulate filtering half mask firmly in position.	A.R.: All of 5 pieces particulate filtering half mask meet the requirements T.C.: All of 5 pieces particulate filtering half mask meet the requirements.	Pass
12 (7.14)	Field of vision		The field of vision is acceptable if determined to so in practical performance tests.	The two samples both have a wider visual field.	Pass

S.No. (C1No)	Test item	Unit	Technical requirements	Test result	Single item decision
13 (7.15)	Exhalation valve(s)	Visual inspection	A particulate filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. If an inhalation 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 particulate filtering half mask to comply with 7.9.	No exhalation valve(s) No exhalation valve(s)	N/A
		Flow conditioning	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.	No exhalation valve(s)	
		Strength of exhalation valve housing	When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s.	No exhalation valve(s)	
14 (7.17)	Clogging—Breathing resistance & Penetration of filter material		Optional for single shift use devices, mandatory for re-usable devices. Tested by Cl. 7.17.1/2/3.	Test results refer to Table C&D, or Test not requested for single shift use face mask	N/A
15 (7.18)	Demountable parts		All demountable parts (if fitted) shall be easily connected and secured, where possible by hand.	No demountable parts	N/A

Table A. Leakage—Total Inward Leakage

S.No. (C1No)	Test item	Unit	Technical requirements <sup>1)</sup>	Test result							Single item decision
				Exercise	I1 (%)	I2 (%)	I3 (%)	I4 (%)	I5 (%)	TUL (%)	
11 (7.9.1)	Leakage—Total inward leakage		At least 46 out of the 50 individual exercise results shall be not greater than 2%. And in addition, at least 8 out of the 10 individual wearers arithmetic means for the total inward leakage shall be not greater than 2%.	A.R.	1.0	1.0	1.7	1.7	0.0	1.4	
					1.3	1.0	2.1	1.9	1.4	1.7	
					1.1	2.1	1.9	1.8	1.4	1.7	
					1.2	1.7	1.7	1.9	1.2	1.5	
					0.9	1.2	1.3	1.3	0.8	1.1	
					0.9	1.4	1.9	1.8	1.3	1.3	
					1.2	1.3	1.8	1.4	1.4	1.4	
					1.5	2.0	2.1	2.0	1.5	1.9	
					0.8	1.0	1.4	1.0	1.2	1.4	
					T.C.						

Note 1  
At least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for the total inward leakage shall be not greater than 2% for FFP1, 11% for FFP2, 5% for FFP3, in addition, at least 8 out of the 10 individual wearers arithmetic means for the total inward leakage shall be not greater than 2% for FFP1, 8% for FFP2, 2% for FFP3.

Table A-1. Test subjects—Facial dimension

Test Subject No.	Length of face (mm)	Width of face (mm)	Depth of face (mm)	Width of mouth (mm)
1	120	130	108	58
2	122	140	115	60
3	119	160	119	55
4	112	122	110	63
5	110	130	110	68
6	113	119	110	59
7	112	123	113	53
8	101	130	100	66
9	118	139	110	63
10	120	125	125	50

Table B- Breathing Resistance

S.No. (CLNo)	Test item	Unit	Technical requirements <sup>(1)</sup>	Test result						Single item decision		
				Exercises	Facing directly ahead	Facing vertically upwards	Facing vertically downwards	Lying on the left side	Lying on the right side			
17 (7.16)	Breathing resistance	Subsistence 30 L/min	≤1.0	mbar	A.R.	0.6	0.7	0.6	0.6	0.7	0.7	Pass
						0.7	0.6	0.7	0.7	0.6	0.6	
						0.6	0.6	0.7	0.6	0.6	0.6	
						0.6	0.6	0.6	0.7	0.7	0.7	
						0.7	0.7	0.6	0.6	0.6	0.6	
						0.6	0.6	0.7	0.7	0.7	0.7	
		T.C.	0.7	0.6	0.6	0.6	0.7	0.7				
			0.6	0.6	0.6	0.6	0.6	0.7				
			2.0	2.1	1.9	1.9	1.9	1.9				
			1.8	1.9	1.9	2.0	2.0	2.0				
			2.0	2.0	2.1	1.9	1.9	1.9				
			1.9	2.0	2.0	2.0	1.9	1.9				
	S.W.	1.9	1.9	2.0	2.0	1.9	1.9					
		1.9	1.9	1.8	1.9	1.9	1.9					
		1.9	1.8	1.8	1.7	1.8	1.8					
		1.8	1.8	1.9	1.9	1.9	1.9					
		1.8	1.8	1.8	1.9	1.9	1.9					
		2.5	2.4	2.4	2.4	2.4	2.4					
	Subsistence 160 L/min	≤1.0	mbar	A.R.	2.5	2.4	2.4	2.4	2.4	2.4	Pass	
					2.4	2.4	2.4	2.4	2.5	2.4		
					2.4	2.4	2.5	2.4	2.4	2.4		
					2.4	2.4	2.4	2.4	2.4	2.4		
					2.4	2.4	2.4	2.4	2.4	2.4		
					2.4	2.4	2.4	2.4	2.4	2.4		
S.W.		2.4	2.4	2.4	2.4	2.4	2.4					
		2.4	2.4	2.4	2.4	2.4	2.4					
		2.4	2.3	2.3	2.4	2.4	2.4					
		2.5	2.5	2.4	2.4	2.4	2.4					
		2.4	2.4	2.4	2.4	2.4	2.4					
		2.4	2.4	2.4	2.4	2.4	2.4					
T.C.	2.5	2.5	2.4	2.4	2.4	2.4						
	2.4	2.4	2.4	2.4	2.4	2.4						

Note 1: Limitation may need be changed according to classification, refer in Table 2 — Breathing resistance of EN 149:2001  
 NA:12809 for the Technical requirements

Table C- Clogging Test — Breathing resistance

S.No. (CLNo)	Test item <sup>(1)</sup>	Unit	Technical requirements <sup>(2)</sup> (mbar)	Test result						Single item decision		
				Exercises	Facing directly ahead	Facing vertically upwards	Facing vertically downwards	Lying on the left side	Lying on the right side			
18 (7.17)	Clogging test — Breathing resistance 22 L/min	mbar	—	A.R.	—	—	—	—	—	—	N/A	
					T.C.	—	—	—	—	—		—
					A.R.	—	—	—	—	—		—
					T.C.	—	—	—	—	—		—
					Y.C.	—	—	—	—	—		—
					Y.C.	—	—	—	—	—		—

Note 1: Valved particle filtering half masks  
 After clogging the inhalation resistances should not exceed FFP1: 14 mbar, FFP2: 5 mbar, FFP3: 7 mbar @ 95 L/min continuous flow.  
 The exhalation resistance shall not exceed 3 mbar at 160 L/min continuous flow.  
 Note 2: Valveless particle filtering half masks  
 After clogging the inhalation and exhalation resistances shall not exceed FFP1: 3 mbar, FFP2: 4 mbar, FFP3: 5 mbar @ 95 L/min continuous flow.

Table D- Clogging Test — Penetration of filter material

S.No. (CLNo)	Test item	Unit	Technical requirements	Test result	Single item decision
19 (7.17)	Clogging test — Penetration of filter material	Paraffin oil	—	A.R. — T.C. — Y.C. —	N/A

Note: Maximum penetration of test aerosol test: 95 L/min max. FFP1: 20%, FFP2: 6%, FFP3: 1%

Abbreviations:  
 A.R. As received M.S. Mechanical strength S.W. Simulated wearing treatment  
 T.C. Temperature conditioned F.C. Filter conditioned C.D. Cleaning and Disinfecting

Annex A- Estimates of the uncertainty of measurement

Test item	Uncertainty
Total inward leakage	2.98%
Penetration of filter material	1.00%
Flammability	1.00%
Carbon dioxide content of the inhalation air	0.32%
Breathing resistance	1.00%

Annex B- Sample Photo



The end