



TEST REPORT EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking	
Report Number:	XWZR2003090201
Date of issue:	Mar. 19, 2020
Total number of pages:	10
Applicant	
Name:	Zhongshan Zhongxin Gifts Co.,Ltd
Address:	No. 188,Road.5 Donghai , Yongyi Industry Park, Dongfeng Town, Zhongshan City, Guangdong Province
Test specification	
Standard:	EN 149:2001+A1:2009
Test procedure	CE Certification
Procedure deviation:	N/A
Non-standard test method:	N/A
Test item description	
Product description	ZHONGXIN MASK
Trade Mark:	qinyonglai
Model/Type reference:	ZX-168
Manufacturer	
Name:	Zhongshan Zhongxin Gifts Co.,Ltd
Address:	No. 188,Road.5 Donghai , Yongyi Industry Park, Dongfeng Town, Zhongshan City, Guangdong Province
Testing laboratory	
Name:	Shenzhen XinWei Certification Service Co.,Ltd
Address:	501,5th Floor,Xusheng R&D Building,Gonghe Industrial Road, Xixiang Street, Baoan District, Shenzhen



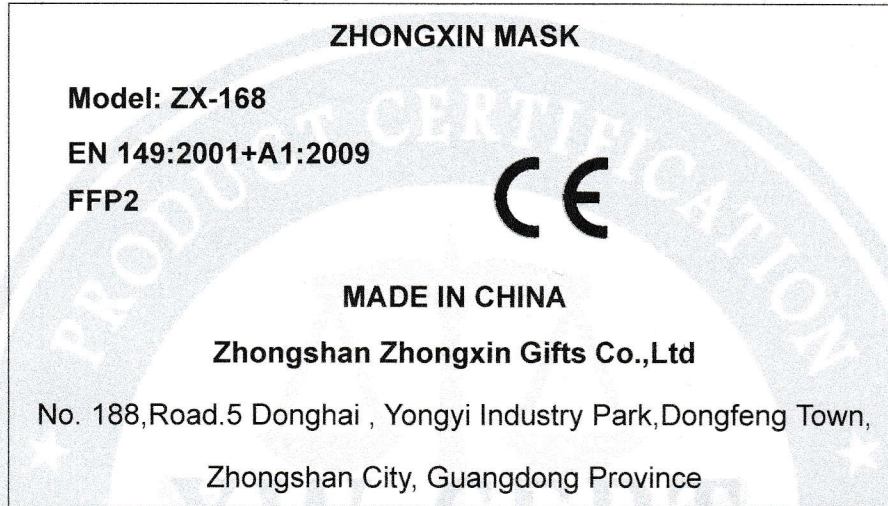
Test case verdicts

Test case does not apply to the test object.....: N(N/A)

Test item does meet the requirement.....: P(Pass)

Test item does not meet the requirement.....: F(Fail)

Copy of marking plate:



The markings above may be only a draft.For the final production samples,the additional markings which do not give rise to misunderstanding may be added.

Testing procedure and testing location:

Testing Laboratory.....: Shenzhen XinWei Certification Service Co.,Ltd

Address.....: 501,5th Floor,Xusheng R&D Building,Gonghe Industrial Road, Xixiang Street, Baoan District, Shenzhen

Date of Test.....: Mar. 09, 2020 to Mar. 19, 2020

Test by (name + signature): Rex Chen *Rex Chen*

Reviewed by (name + signature): Forlan Lu *Forlan Lu*

Approved by (name + signature) ... : Marin Wang *Marin Wang*





EN 149			
Clause	Requirement-Test	Result-Remark	Verdict
5	Classification		P
	Particle filtering half masks are classified according to their filtering efficiency and their maximum total inward leakage. There are three classes of devices: FFP1, FFP2 and FFP3.	FFP2	P
6	Designation		P
	Particle filtering half masks meeting the requirements of this European Standard shall be designated in the following manner: Particle filtering half mask EN 149, year of publication, class, option.		P
7	Requirements		P
7.1	General		p
	In all tests all test samples shall meet the requirements.		P
7.2	Nominal values and tolerances		P
	Unless otherwise specified, the values stated in this European Standard are expressed as nominal values. Except for temperature limits, values which are not stated as maxima or minima shall be subject to a tolerance of $\pm 5\%$. Unless otherwise specified, the ambient temperature for testing shall be $(16 - 32)^\circ\text{C}$, and the temperature limits shall be subject to an accuracy of $\pm 1^\circ\text{C}$.		P
7.3	Visual inspection		P
	The visual inspection shall also include the marking and the information supplied by the manufacturer.		P
7.4	Packaging		P
	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. Testing shall be done in accordance with 8.2.		P
7.5	Material		P



EN 149			
Clause	Requirement-Test	Result-Remark	Verdict
	<p>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. 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. Three particle filtering half masks shall be tested.</p> <p>When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not 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.</p> <p>Testing shall be done in accordance with 8.2.</p>	<p>No mechanical failure of the facepiece or straps.</p> <p>Not constituted a hazard or nuisance for the wearer.</p>	P
7.6	Cleaning and disinfecting		P
	<p>If the particle filtering half mask is designed for to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer.</p> <p>Testing shall be done in accordance with 8.4 and 8.5. 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.</p> <p>Testing shall be done in accordance with 8.1.1.</p>		P
7.7	Practical performance		P
	<p>The particle filtering half mask shall undergo practical performance tests under realistic conditions.</p> <p>These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard. Where practical performance tests show the apparatus has imperfections related to wearer's acceptance, the test house shall provide full details of those parts of the practical performance tests which revealed these imperfections.</p> <p>Testing shall be done in accordance with 8.4.</p>		P



EN 149																	
Clause	Requirement-Test	Result-Remark	Verdict														
7.9	Leakage		P														
7.9.1	Total inward leakage		P														
	<p>The laboratory tests shall indicate that the particle filtering half mask can be used by the wearer to protect with high probability against the potential hazard to be expected.</p> <p>The total inward leakage consists of three components: face seal leakage, exhalation valve Leakage (if exhalation valve fitted) and filter penetration.</p> <p>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 11 % for FFP2 and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than 8 % for FFP2</p>	<p>50 results ≤ 11% 10 averages ≤ 8%</p>	P														
7.9.2	Penetration of filter material		P														
	<p>The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1.</p>	<p>Sodium chloride 95l/min: Max:2.6% Paraffin oil test:95l/m: Max:3.7%</p>	P														
<p>Table 1 — Penetration of filter material</p> <table border="1"> <thead> <tr> <th rowspan="2">Classification</th> <th colspan="2">A1) Maximum penetration of test aerosol A1)</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	A1) Maximum penetration of test aerosol A1)		Sodium chloride test 95 l/min % max.	Paraffin oil test 95 l/min % max.	FFP1	20	20	FFP2	6	6	FFP3	1	1
Classification	A1) Maximum penetration of test aerosol A1)																
	Sodium chloride test 95 l/min % max.	Paraffin oil test 95 l/min % max.															
FFP1	20	20															
FFP2	6	6															
FFP3	1	1															



EN 149			
Clause	Requirement-Test	Result-Remark	Verdict
7.10	Compatibility with skin		P
	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. Testing shall be done in accordance with 8.4 and 8.5.	The materials would not cause irritation or any other adverse effect to health	P
7.11	Flammability		P
	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. The particle filtering half mask does not have to be usable after the test. Testing shall be done in accordance with 8.6.	After removal from the flame, the sample could not burn and could not continue to burn	P
7.12	Carbon dioxide content of the inhalation air		P
	The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume). Testing shall be done in accordance with 8.7.	0.58% (by volume)	P
7.13	Head harness		P
	The head harness shall be designed so that the particle 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 particle filtering half mask firmly in position and be capable of maintaining total inward leakage requirements for the device. Testing shall be done in accordance with 8.4 and 8.5.	The head harness can be donned and removed easily. Enough robust to hold the particle filtering half mask firmly in position and be capable of maintaining total inward leakage requirements for the device.	P



EN 149			
Clause	Requirement-Test	Result-Remark	Verdict
7.14	Field of vision		P
	The field of vision is acceptable if determined so in practical performance tests. Testing shall be done in accordance with 8.4.		P
7.16	Breathing resistance		P
	The breathing resistances apply to valved and valveless particle filtering half masks and shall meet the requirements of Table 2. Testing shall be done in accordance with 8.9.	Inhalation: 30l/min max: 0.6mbar 95l/min max: 1.8mbar Exhalation: 160l/min max: 2.53mbar	P
Table 2 — Breathing resistance			
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
7.17	Clogging		P
7.17.1	General		
	For single shift use devices , the clogging test is an optional test.For reusable devices the test is mandatory. Devices designed to be resistant to clogging, shown by a slow increase of breathing resistance when loaded with dust, shall be subjected to the treatment described in 8.10. The specified breathing resistances shall not be exceeded before the required dust load of 833 mg.h/m3 is reached.	Mean Particle Size (MPS)	P



EN 149			
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7.17.2	Breathing resistance		P
7.17.2.1	Valved particle filtering half masks		N
	After clogging the inhalation resistances shall not exceed FFP1: 2.1 mbar FFP2: 2.4 mbar FFP3: 3 mbar at 95 l/min continuous flow; The exhalation resistance shall not exceed 3 mbar at 160 l/min continuous flow. Testing shall be done in accordance with 8.9.		N
7.17.2.2	Valveless particle filtering half masks		P
	After clogging the inhalation and exhalation resistances shall not exceed FFP1: 2.1 mbar FFP2: 2.4 mbar FFP3: 3 mbar at 95 l/min continuous flow. Testing shall be done in accordance with 8.9	inhalation resistance: 2.38mbar exhalation resistance: 2.31mbar Comply with FFP2 requirement	P
7.17.3	Penetration of filter material		P
	All types (valved and valveless) of particle filtering half masks claimed to meet the clogging requirement shall also meet the requirements given in 7.9.2, for the Penetration test according to EN149, after the clogging treatment. Testing shall be done in accordance with 8.11 using EN149.		P
7.18	Demountable parts		P
	All demountable parts (if fitted) shall be readily connected and secured, where possible by hand. Testing shall be done in accordance with 8.2.	All demountable parts could be readily connected and secured	P
8.2	Visual inspection		----



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	The visual inspection is carried out where appropriate by the test house prior laboratory or practical performance tests		----
8.3.1	Simulated wearing treatment		----
	A breathing machine is adjusted to 25 cycles/min and 2.0l/stroke, the saturator being set at a temperature in excess of 37°C. The air shall be saturated at (37+/-2)°C at the mouth of the dummy head.		----
	During the test time at approx. 20 min intervals the particle filter half mask shall be completely removed from the dummy head and refitted such that during the test period it is fitted ten times to the dummy head.		----
8.3.2	Temperature conditioning		----
	Expose the masks to the following thermal cycle: a) for 24h to a dry atmosphere of (70+/-3)°C b) for 24h to a dry atmosphere of (-30+/-3)°C and allow to return to room temperature for at least 4h between exposures and prior to subsequent testing. The conditioning shall be carried out in a manner which ensures that no thermal shock occurs.		----

Photo Documentation

Fig.1



Fig.2

