

Certificati Mascherine

consegne dal 27/04/2020 al 31/04/2020



UNIFORM SOCIAL CREDIT CODE
91330701699527251P(1/1)

BUSINESS LICENSE



NAME JIN HUA CITY JIN CHUANG LABOR PROTECTION TOOL FACTORY

TYPE PERSONAL OWNED ENTERPRISES

EOR GENERAL LABOR PROTECTION TOOLS, PROCESSING AND SALES OF HRDWARE TOOLS. (The project is approved in accordance with the law, and business activities can be carried out only after approval by relevant government departments)

INVESTOR JIN YONGPING

Established JANUARY 4, 2010

ADDRESS 1353 Linhu Street, Tangxi Town, Wucheng District, Jinhua City, Zhejiang Province 1 building Second floor

BUSINESS LICENSE TRANSLATION

说明

1. 本营业执照于2020年03月31日12时58分03秒由金盾平(法定代表人)留存(打印)

2. 数字签名: ADBFAZEA69FZ/MoXmsdNfVfHAbLM9Q8A9A6LQJFT6SYCIGYSCTNIFwG57F/PwOvZ/VQ8k14o0k475wtuWAgpSg

登记机关 金华市市场监督管理局
经济技术开发区分局

2020年02月13日

国家企业信用信息公示系统网址: <http://www.gsxt.gov.cn>


国家市场监督管理总局监制



Certificati Mascherine

INSPECTION REPORT NUMBER: No.2020(BUST)-058

Non-original

S/N	project アイテム 项目	Terms 規約 条款	English-This mask meets the requirements defined below 日本語-このマスクは、以下に定義された要件を満たしています 中文-此掩码符合以下定义的要求	English-The evaluation results are as follows 日本語-評価結果は次のとおりです 中文-评估结果如下			English-conclusion 日本語-おわりに 中文-评估结论
1	FILTRATION EFFICIENCY	5.3	KN90 ≥ 90.0% KN95 ≥ 95.0% KN100 ≥ 99.97% Test airflow: Single filter element: (85 ± 4) L/min	No advance deal with	Initial filtration efficiency (η)	Load filtration efficiency (η)	meet the standards (KN95)
				Ambient temperature: 24 °C Relative humidity: 32%			
2	INHALATION RESISTANCE	5.5	The total suction resistance of each sample should be ≤ 350Pa	No advance deal with	1#	106 Pa	
					2#	112 Pa	
3	EXPIRATORY RESISTANCE	5.5	The total expiratory resistance of each sample should be ≤ 250Pa	No advance deal with	3#	53 Pa	
					4#	59 Pa	
SAMPLE PHOTO							
NOTE							

Inspection date: February 04, 2020

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CHINA LABOR PROTECTION PRODUCTS QUALITY SUPERVISION AND INSPECTION CENTER(BEIJING)

SHENHUANG SAFE + MASK KN95 INSPECTION REPORT

INSPECTION REPORT NUMBER: No.2020(BUST)-058

Non-original

13	sample name	Self-priming filter type anti-particle respirator	Sample company	Jinchuang
	Specifications	Disposable mask	Protection level	KN95
	Requester name	Jinhua city Jinchuang Labor Protection Tool Factory	Requester contact details	Celabmask@foxmail.com
	Requester address	jinhua.china		
	Production unit name	Jinhua city Jinchuang Labor Protection Tool Factory	manufacturer contact details	Celabmask@foxmail.com
	Manufacturer Address	jinhua.china		
	Number of samples	10	Production Date	-----
	Sample status	intact	Post date	04.02.2020
	Sample characteristics	White folding mask	Send samples	Jinchuang
	Test based on	GB 2626-2006 《Respiratory protection Self-priming filter type anti-particle respirator》		
	Test items	Filtration efficiency、 Inhalation resistance、 Expiratory resistance		
	Test results	<p>Samples tested According to GB 2626-2006 《Respiratory protection Self-priming filter type anti-particle respirator》 It is determined that the test data meets (KN95) standard requirements.</p> <div style="text-align: right;">  <p>Issue Date: February 04, 2020 检验报告专用章</p> </div>		
	Note	Samples are not pretreated		
	Ratify:	陈萍为	Check:	尹超
			Main inspection:	周芸芸



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PRODUCT DESCRIPTION AND CERTIFICATION SHENHUANG SAFE + MASK FFP NR D



English-Instructions for using disposable self-priming filter type anti-particulate respirator
日本語-使い捨て自吸式フィルター型抗微粒子マスクの使用説明書
中文-使用一次性自吸过滤式防颗粒物呼吸器使用说明

ENGLISH

English-Instruction

Comprehensive and evaluation normative indicators according to test reports

-FFP1, FFP2, FFP3 NR D are disposable masks, classified as Class III Personal Protective Equipment (PPE) (prevention of death or permanent damage)

Available for industry professionals

-FFP1 FFP2 FFP3 NR D disposable masks are also classified as Class I Medical Tools (MD). They are available for medical professionals, patients and hospital visitors.

PPE protects the following issues:

- Effective protection against aerosolized (spray) or airborne liquid or solid particles (existing in the air) respiratory diseases
- Protect (mask users) against infectious bacterial infections.

The manufacturer refuses to accept responsibility for damage caused by failure to follow the instructions below.

Instruction for use: refer to Figure 1-2-3-4-5

This mask can only be used by trained people.

Remove the mask from the packaging just before using it immediately.

Before use, make sure the mask is intact.

In order to ensure that the mask fits tightly on the face, check it yourself (Figure 5)

-Put your hand on the mask, block the filter surface as much as possible, and do not move the mask.

-Inhale strongly. If the mask is not recessed, it is not sealed and must be adjusted again:

- * If there is air in the barrel of the nose area, please adjust the mask that fixes the nose area (see Figure 4)
- * If there is air circulation in other parts of the mask, carefully adjust the rope.

If the mask is not tight enough, do not enter where it is needed. Please choose a different type of mask and make sure it is tight enough.

caveat:

Please leave the place immediately if:

- Do you feel dizzy or just feel any pain.
- Feeling trouble breathing

Replace and discard masks:

- Mask damaged
- Masks prevent you from breathing
- Contaminated by blood or other liquids

If used in a medical center, dispose of used masks through the normal channels of the infectious disease hazard unit.

Each mask is for single use only (see Figure 7). As the performance of the mask will decrease, repeated use of the mask can cause contamination and pass the disease on to the wearer or surrounding people.

Use restrictions:

This mask cannot prevent gas or smoke from entering.

This mask does not supply oxygen. Please use it in an environment with at least 17% oxygen.

Do not use in explosive atmospheres.

OEL: Occupational exposure limits.

Maximum concentration: see Figure 11

Storage: According to the recommendations displayed on the package Storage: See Figure 9-10

Shelf life: 2 years after production date

Destruction: as required

Accident notification: Any serious problems caused by the use of the product should be notified to the manufacturer and local authorities.



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一次性使用口罩 DISPOSABLE MASK

产品信息 (2只/袋)

【产品型号】一次性使用口罩

【包装规格】2只/袋

【产品说明】一次性使用口罩（折叠式），由非织造布制作而成。第一层为白色无纺布；第二层为过滤熔喷布；第三层为白色无纺布。适用于普通医疗检查、个人卫生防护、食品加工等。

【注意事项】1、本品为一次性用品，不得重复使用。
2、本品为普通口罩，不可代替医用外科口罩使用。
3、不得在有害粉尘和有毒气体等特殊环境中使用。

【贮存】1、注意防水、防高温、防温和防腐蚀性气体，
2、放置于清洁、干燥和通风良好的环境，避免阳光直射。

【保质期】2年

【生产日期及有效期限】详见喷码

【生产商】金华市金创劳动防护工具厂

【地址】浙江省金华市婺城区汤溪镇琳湖街1353号一栋二楼

【联系方式】0579-82665689

【使用方法】 Use method



选择正面在外，
带上耳挂带。



紧贴脸部，拉伸
面罩至，完全覆
盖口鼻和下巴。



调整鼻梁条并压合，
让面罩与鼻梁、脸
颊紧密贴合。



有破损、异味与
潮湿，应立即更换。

金华市金创劳动防护工具厂
Jin hua Jin Chuang PPE plant

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合格证

QUALIFIED CERTIFICATE

品名 PRODUCT NAME	非医用随弃式口罩 mask
执行标准 PRODUCT STANDARD	GB2626-2006KN95 GB2626-2006 Kn95
生产日期 MANUFACTURING DATE	2020.4月 04-2020
有效期 VALIDITY DATE	三年 3 Years
公司名称 COMPANY	金华市金创劳动防护用品厂 Jinhua Jin Chuang PPE plant
公司地址 COMPANY ADD	中国浙江省金华市婺城区汤溪镇琳湖街1353号一栋二楼 linhu street 1353# 1-2F tangxi village, wucheng district, jinhua zhejiang China
电话 TEL	0579-82665689 0579-82665689

检 01
CHECKER



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شهادة – Certificat – Сертификат – 證明書 – Certificat – شهادة

Form QAT_10-M04, version 00, effective since March 6th, 2020

Certificate of Compliance



No. 3K200407T.SSIUU05

Certificate's Holder: Shenzhen Source Innovation Technologies Co., Ltd
Building A6, No. 87, Tongxin Road, Tongxin Community, Longgang District, Shenzhen City, China

Manufacturer: Shenzhen Source Innovation Technologies Co., Ltd
Building A6, No. 87, Tongxin Road, Tongxin Community, Longgang District, Shenzhen City, China

Certification ECM Mark:



Product: Protect Mask
Model(s): S9401, S9402(XL), S9201, S9202, S9100, S9200, S9300, S9502, S9602

Verification to: Standard:
EN149:2001+A1:2009

related to CE Directive(s):
R 2016/425 (Personal Protective Equipment)

Remark: This document has been issued on a voluntary basis and upon request of the manufacturer. It is our opinion that the technical documentation received from the manufacturer is satisfactory for the requirements of the ECM Certification Mark. The conformity mark above can be affixed on the products accordingly to the ECM regulation about its release and its use.

Additional information and clarification about the Marking:



The manufacturer is responsible for the CE Marking process, and if necessary, must refer to a Notified Body. This document has been issued on the basis of the regulation on ECM Voluntary Mark for the certification of products. RG01_ECM rev.3 available at: www.entecerma.it

Issuance date: 07 April 2020

Expiry date: 06 April 2025

Reviewer
Technical expert
Amanda Payne

Approver
ECM Service Director
Luca Bedonni

Ente Certificazione Macchine Srl

Via Ca' Bella, 243 – Loc. Castello di Serravalle – 40053 Valsamoggia (BO) - ITALY
☎ +39 051 6705141 ☎ +39 051 6705156 ✉ info@entecerma.it 🌐 www.entecerma.it

Applicant: **Yiwu henghao household products Co., Ltd**
Second floor, No.18 Wenhua Road, Chian Town, Yiwu City, Zhejiang, China

Manufacturer: The same as applicant

Test Item.....: **Protective mask**

Mark of origin: N/A

Type Designation(s)..... : **HH-KN95-001 ,HH-KN95-002 , HH-001, HH-002**

Serial No(s).....: Prototype

Test requirements.....: **EN 149:2001+A1:2009**

Test result.....: The test item passed the test requirement(s).

Testing Laboratory.....: Shanghai MICEZ Equipment Testing & Technical Co., LTD

Testing location.....: At manufacturer's premises

Eric. Zhang

Compiled by (+ signature).....: Shanghai MICEZ Equipment Testing & Technical Co., LTD

Thomas

Approved by (+ signature).....: Shanghai MICEZ Equipment Testing & Technical Co., LTD

Date of issue.....: 2020-Mar.-07

Other Aspects:

This report is only valid together with 1 parts which named -01



General remarks:

The test result presented in this report relate only to the object(s) tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

“(see Annex #)” refers to additional information appended to the report.

“(see appended table)” refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Additional Information :

Abbreviations used in this report :

None

Others:

None

Brief description of the test item:

/

Technical Specifications:



EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
1	Scope		P
	This European Standard specifies minimum requirements for filtering half masks as respiratory protective devices to protect against particles except for escape purposes.		P
2	Normative references		P
3	Terms and definitions		P
4	Description		P
	A particle filtering half mask covers the nose and mouth and the chin and may have inhalation and/or exhalation valve(s). The half mask consists entirely or substantially of filter material or comprises a facepiece in which the main filter(s) form an inseparable part of the device		P
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. The protection provided by an FFP2 - or FFP3 - device includes that provided by the device of lower class or classes.		P
6	Designation		P
	Particle filtering half masks meeting the requirements of this European Standard shall be designated in the following manner: [A] Particle filtering half mask EN 149, year of publication, classification, option (where "D" is an option for a non re-useable particle filtering half mask and mandatory for re-useable particle filtering half mask). [A] [A] EXAMPLE Particle filtering half mask EN 149:2001 FFP1 NR D [A]		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

EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
	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
	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. 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. Testing shall be done in accordance with 8.2.		P
7.6	Cleaning and disinfecting		P
	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. Testing shall be done in accordance with 8.4 and 8.5.		P
7.7	Practical performance		P
	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. 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. Testing shall be done in accordance with 8.4.		P
7.8	Finish of parts		P
	Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs. Testing shall be done in accordance with 8.2.		P
7.9	Leakage		P
7.9.1	Total inward leakage		P

EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
	<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>Testing shall be done in accordance with 8.5.</p>		P
7.9.2	Penetration of filter material		P
	The penetration of the filter of the particle filtering half mask shall meet the requirements of Table 1.		P
7.10	Compatibility with skin		P
	<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.</p> <p>Testing shall be done in accordance with 8.4 and 8.5.</p>		P
7.11	Flammability		P
	<p>The material used shall not present a danger for the wearer and shall not be of highly flammable nature.</p> <p>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.</p> <p>The particle filtering half mask does not have to be usable after the test. Testing shall be done in accordance with 8.6.</p>		P
7.12	Carbon dioxide content of the inhalation air		P
	<p>The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume).</p> <p>Testing shall be done in accordance with 8.7.</p>		P
7.13	Head harness		P
	<p>The head harness shall be designed so that the particle filtering half mask can be donned and removed easily.</p> <p>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.</p> <p>Testing shall be done in accordance with 8.4 and 8.5.</p>		P
7.14	Field of vision		P
	<p>The field of vision is acceptable if determined so in practical performance tests.</p> <p>Testing shall be done in accordance with 8.4.</p>		P
7.15	Exhalation valve(s)		P

EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
	A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. Testing shall be done in accordance with 8.2 and 8.9.1.		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.		P
7.17	Clogging		P
7.17.1	General		P
	For single shift use devices, the clogging test is an optional test. For re-usable 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/m ³ is reached.		P
7.17.2	Breathing resistance		P
	After clogging the inhalation resistances shall not exceed — FFP1: 4 mbar — FFP2: 5 mbar — FFP3: 7 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.		P
	After clogging the inhalation and exhalation resistances shall not exceed — FFP1: 3 mbar — FFP2: 4 mbar — FFP3: 5 mbar at 95 l/min continuous flow. Testing shall be done in accordance with 8.9.		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 EN 13274-7, after the clogging treatment. Testing shall be done in accordance with 8.11 using EN 13274-7		P
7.18	Demountable parts		P

EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
	All demountable parts (if fitted) shall be readily connected and secured, where possible by hand. Testing shall be done in accordance with 8.2.		P
8	Testing		P
8.1	General		P
	If no special measuring devices and methods are specified, commonly used devices and methods shall be used.		P
8.2	Visual inspection		P
	The visual inspection is carried out where appropriate by the test house prior to laboratory or practical performance tests.		P
8.3	Conditioning		P
8.3.1	Simulated wearing treatment		P
	Conditioning by simulated wearing treatment shall be carried out by the following process. A breathing machine is adjusted to 25 cycles/min and 2,0 l/stroke. The particle filtering half mask is mounted on a Sheffield dummy head. For testing, a saturator is incorporated in the exhalation line between the breathing machine and the dummy head, the saturator being set at a temperature in excess of 37 °C to allow for the cooling of the air before it reaches the mouth of the dummy head. The air shall be saturated at $(37 \pm 2) ^\circ \text{C}$ at the mouth of the dummy head. In order to prevent excess water spilling out of the dummy's mouth and contaminating the particle filtering half mask the head shall be inclined so that the water runs away from the mouth and is collected in a trap. The breathing machine is brought into operation, the saturator switched on and the apparatus allowed to stabilize. The particle filtering half mask under test shall then be mounted on the dummy head. During the test time at approximately 20 min intervals the particle filtering 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.		P
8.3.2	Temperature conditioning		P
	Expose the particle filtering half masks to the following thermal cycle: a) for 24 h to a dry atmosphere of $(70 \pm 3) ^\circ \text{C}$; b) for 24 h to a temperature of $(-30 \pm 3) ^\circ \text{C}$; and allow to return to room temperature for at least 4 h between exposures and prior to subsequent testing. The conditioning shall be carried out in a manner which ensures that no thermal shock occurs.		P
8.3.3	Mechanical strength		P
	Conditioning shall be done in accordance with EN 143.		P
8.3.4	Flow conditioning		P

EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
	A total of 3 valved particle filtering half masks shall be tested, one as received and two temperature conditioned in accordance with 8.3.2.		P
8.4	Practical performance		P
8.4.1	General		P
	<p>A total of 2 particle filtering half masks shall be tested: both as received.</p> <p>All tests shall be carried out by two test subjects at ambient temperature and the test temperature and humidity shall be recorded.</p> <p>Prior to the test there shall be an examination to assure that the particle filtering half mask is in good working condition and that it can be used without hazard.</p> <p>Examination shall be done in accordance with 8.2.</p> <p>For the test, persons shall be selected who are familiar with using such or similar equipment.</p>		P
	<p>During the tests the particle filtering half mask shall be subjectively assessed by the wearer and after the test, comments on the following shall be recorded:</p> <p>a) head harness comfort;</p> <p>b) security of fastenings;</p> <p>c) field of vision;</p> <p>d) any other comments reported by the wearer on request.</p>		P
8.4.2	Walking test		P
	The subjects wearing normal working clothes and wearing the particle filtering half mask shall walk at a regular rate of 6 km/h on a level course. The test shall be continuous, without removal of the particle filtering half mask, for a period of 10 min.		P
8.4.3	Work simulation test		P
	<p>The particle filtering half mask shall be tested under conditions which can be expected during normal use. During this test the following activities shall be carried out in simulation of the practical use of the particle filtering half mask. The test shall be completed within a total working time of 20 min.</p> <p>The sequence of activities is at the discretion of the test house. The individual activities shall be arranged so that sufficient time is left for the comments prescribed.</p>		P
8.5	Leakage		P
8.5.1	General test procedure		P
	<p>A total of 10 test specimens shall be tested: 5 as received and 5 after temperature conditioning in accordance with 8.3.2.</p> <p>The total inward leakage shall be tested using sodium chloride aerosol.</p> <p>Prior to the test there shall be an examination to ensure that the particle filtering half mask is in good working condition and that it can be used without hazard.</p>		P

EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
	<p>The test atmosphere shall preferably enter the top of the enclosure through a flow distributor, and be directed downwards over the head of the test subject at a minimum flow rate of 0,12 m/s. The concentration of the test agent inside the effective working volume shall be checked to be homogeneous. The flow rate should be measured close to the subject's head.</p> <p>A level treadmill is required capable of working at 6 km/h.</p>		P
	<p>Ask the test subjects to read the manufacturer's fitting information and if more than one size of particle filtering half mask is manufactured, ask the test subject to select the size deemed by him to be the most appropriate. If necessary the test supervisor shall show the test subjects how to fit the particle filtering half mask correctly in accordance with the fitting information.</p>		P
	<p>The test sequence shall be as follows:</p> <ul style="list-style-type: none"> a) Ensure the test atmosphere is OFF. b) Place the test subject in the enclosure. Connect up the facepiece sampling probe. Have the test subject walk at 6 km/h for 2 min. Measure the test agent concentration inside the particle filtering half mask to establish the background level. c) Obtain a stable reading. d) Turn the test atmosphere ON. e) The subject shall continue to walk for a further 2 min or until the test atmosphere has stabilized. f) Whilst still walking the subject shall perform the following exercises: <ul style="list-style-type: none"> 1) walking for 2 min without head movement or talking; 2) turning head from side to side (approx. 15 times), as if inspecting the walls of a tunnel for 2 min; 3) moving the head up and down (approx. 15 times), as if inspecting the roof and floor for 2 min; 4) reciting the alphabet or an agreed text out loud as if communicating with a colleague for 2 min; 5) walking for 2 min without head movement or talking. g) Record <ul style="list-style-type: none"> 1) enclosure concentration; 2) the leakage over each exercise period. h) Turn off the test atmosphere and when the test agent has cleared from the enclosure remove the subject. <p>After each test, replace the particle filtering half mask by a new sample.</p>		P
8.5.2	Method		P
	<p>The subject wearing the particle filtering half mask under test walks on a treadmill over which is an enclosure.</p> <p>Through this enclosure flows a constant concentration of NaCl aerosol. The air inside the particle filtering half mask is sampled and analysed during the inhalation phase of the respiratory cycle to determine the NaCl content. The sample is extracted by punching a hole in the particle filtering half mask and inserting a probe through which the sample is drawn. The pressure variation inside the particle filtering half mask is used to actuate a change-over valve so that inhaled air only is sampled. A second probe is inserted for this purpose.</p>		P

EN 149:2001+A1:2009 Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking			
Clause	Requirements - Test	Result - Remark	Verdict
	<p>A flame photometer shall be used to measure the concentration of NaCl inside the particle filtering half mask. Essential performance characteristics for a suitable instrument are:</p> <p>a) It should be a flame photometer specifically designed for the direct analysis of NaCl aerosol;</p> <p>b) It should be capable of measuring concentrations of NaCl aerosol between 15 mg/m³ and 5 ng/m³;</p> <p>c) The total aerosol sample required by the photometer should not be greater than 15 l/min;</p> <p>d) The response time of the photometer, excluding the sampling system, should not be greater than 500 ms;</p> <p>e) It is necessary to reduce the response to other elements, particularly carbon, the concentration of which will vary during the breathing cycle. This will be achieved by ensuring that the band pass width of the interference filter is no greater than 3 nm and that all necessary side-band filters are included.</p>		P
	<p>A system is required which will switch the sample to the photometer only during the inhalation phase of the respiratory cycle. During the exhalation phase clean air shall be fed to the photometer. The essential elements of such a system are:</p> <p>a) An electrically operated valve with a response time of the order of 100 ms. The valve should have the minimum possible dead space compatible with straight-through, unrestricted flow when open;</p> <p>b) A pressure sensor which is capable of detecting a minimum pressure change of approx. 0,05 mbar and which can be connected to a probe inserted in the cavity of the particle filtering half mask. The sensor shall have an adjustable threshold and be capable of differential signalling when the threshold is crossed in either direction. The sensor shall work reliably when subjected to the accelerations produced by the head movements of the subject;</p> <p>c) An interfacing system to actuate the valve in response to a signal from the pressure sensor;</p> <p>d) timing device to record the proportion of the total respiratory cycle during which sampling took place.</p>		P
8.6	Flammability		P
	A total of four particle filtering half masks shall be tested: two in the state as received and two after temperature conditioning in accordance with 8.3.2.		P
8.7	Carbon dioxide content of the inhalation air		P
	<p>A total of 3 particle filtering half masks shall be tested: all 3 as received.</p> <p>The apparatus consists essentially of a breathing machine with solenoid valves controlled by the breathing machine, a connector, a CO2 flowmeter and a CO2 analyser.</p>		P
8.8	Strength of attachment of exhalation valve housing		P
	<p>A total of three particle filtering half masks shall be tested: one as received, one temperature conditioned in accordance with 8.3.2 and one after the test described for mechanical strength in EN 143.</p> <p>Mount the particle filtering half mask securely to a fixture as shown in Figure 9. Apply an axial tensile force of 10 N to the valve (housing) for 10 s, and note the results.</p>		P
8.9	Breathing Resistance		P
8.9.1	Test samples and fixture		P
	<p>The particle filtering half mask shall be fitted securely in a leak tight manner but without deformation on the Sheffield dummy head.</p> <p>The flow rate at which the resistance is measured shall be corrected to 23°C and 1 bar absolute.</p>		P

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Clause	Requirements - Test	Result - Remark	Verdict
8.9.2	Exhalation resistance		P
	Seal the particle filtering half mask on the Sheffield dummy head. Measure the exhalation resistance at the opening for mouth of the dummy head using the adapter shown in Figure 6 and a breathing machine adjusted to 25 cycles/min and 2.0 l/stroke or a continuous flow 160 l/min. Use a suitable pressure transducer.		P
8.9.3	Inhalation resistance		P
	Test the inhalation resistance at 30 l/min and 95 l/min continuous flow.		P
8.10	Clogging		P
8.10.1	Principle		P
	<p>The test aerosol shall be dolomite. A total of 3 particle filtering half masks shall be tested: 1 as received and 2 after temperature conditioning in accordance with 8.3.2.</p> <p>The test consists of subjecting the particle filtering half mask to a sinusoidal breathing simulation, whilst the sample is surrounded by a known concentration of dolomite dust in air. Following the exposure, the breathing resistance and the filter penetration of the sample particle filtering half mask are measured.</p>		P
8.10.2	Test equipment		P
	<p>A scheme of a typical apparatus is given in Figure 10. The working area of the test chamber has a suggested square section of 650 mm x 650 mm.</p> <p>The breathing machine has a displacement of 2,0 l/stroke. The exhaled air shall pass a humidifier in the exhaled air circuit, such that the exhaled air temperature, measured at the position of the sample particle filtering half mask is $(37 \pm 2) ^\circ \text{C}$ and 95 % R.H. minimum.</p>		P
8.10.3	Test conditions		P
8.10.4	Test procedure		P
8.10.5	Assessment of clogging		P
8.11	Penetration of filter material		P
	The device shall be mounted in a leak tight manner on a suitable adaptor and subjected to the test(s), ensuring that components of the device that could affect filter penetration values such as valves and harness attachment points are exposed to the challenge aerosol.		P
9	Marking		P
9.1	Packaging		P

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Clause	Requirements - Test	Result - Remark	Verdict
9.2	Particle filtering half mask		P
10	Information to be supplied by the manufacturer		P
	Information supplied by the manufacturer shall accompany every smallest commercial available package.		P
	Information supplied by the manufacturer shall be at least in the official language(s) of the country of destination.		P
	The information supplied by the manufacturer shall contain all information necessary for trained and qualified persons on <ul style="list-style-type: none"> — application/limitations; — the meaning of any colour coding; — checks prior to use; — donning, fitting; — use; — maintenance (e.g. cleaning, disinfecting), if applicable; — storage; — the meaning of any symbols/pictograms used of the equipment. 		P
	The information shall be clear and comprehensible. If helpful, illustrations, part numbers, marking shall be added.		P
	Warning shall be given against problems likely to be encountered		P
	The information shall provide recommendations as to when the particle filtering half mask shall be discarded.		P
	For devices marked "NR", a warning shall be given that the particle filtering half mask shall not be used for more than one shift.		P

End of report