



# KN95 Protective Mask

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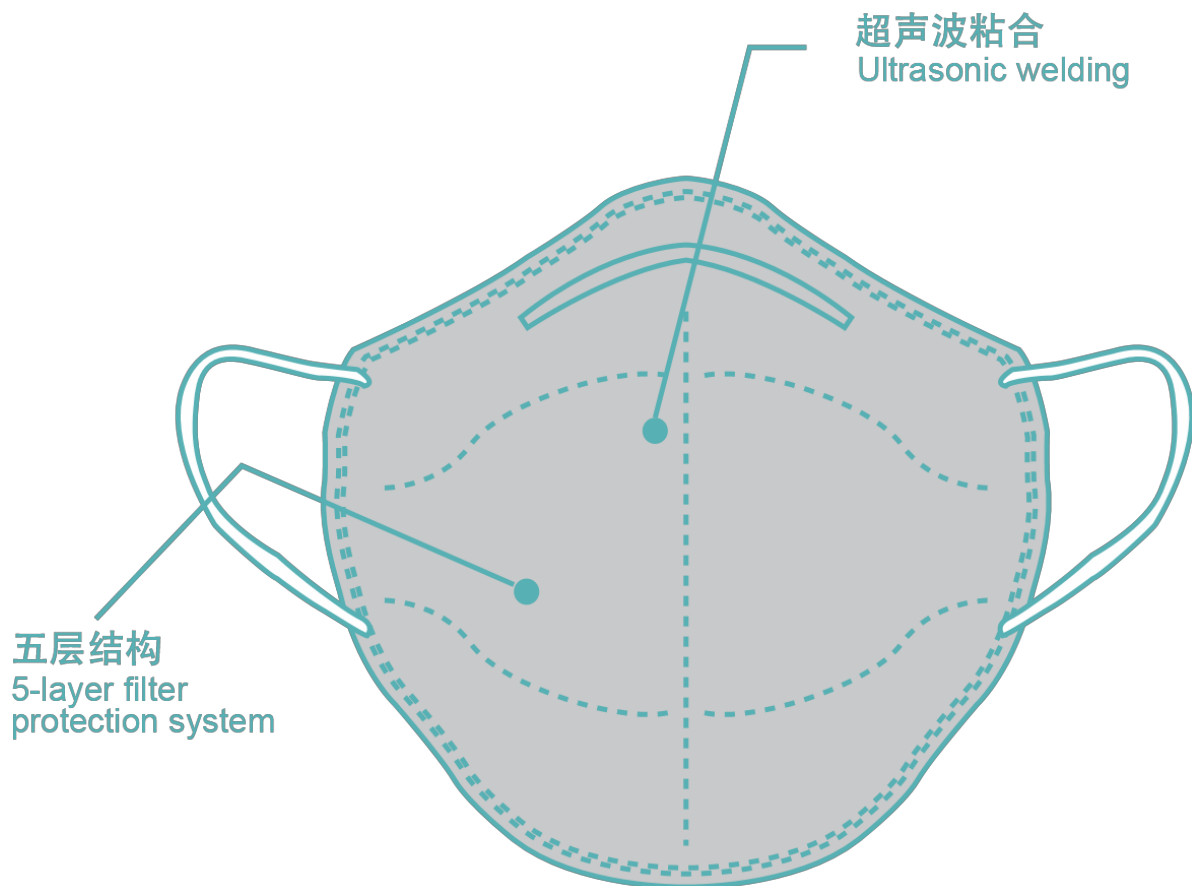
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莆田市维利恩工贸有限公司  
Putian Villian Industry and Trade Co., LTD

## 产品介绍

## Introduction

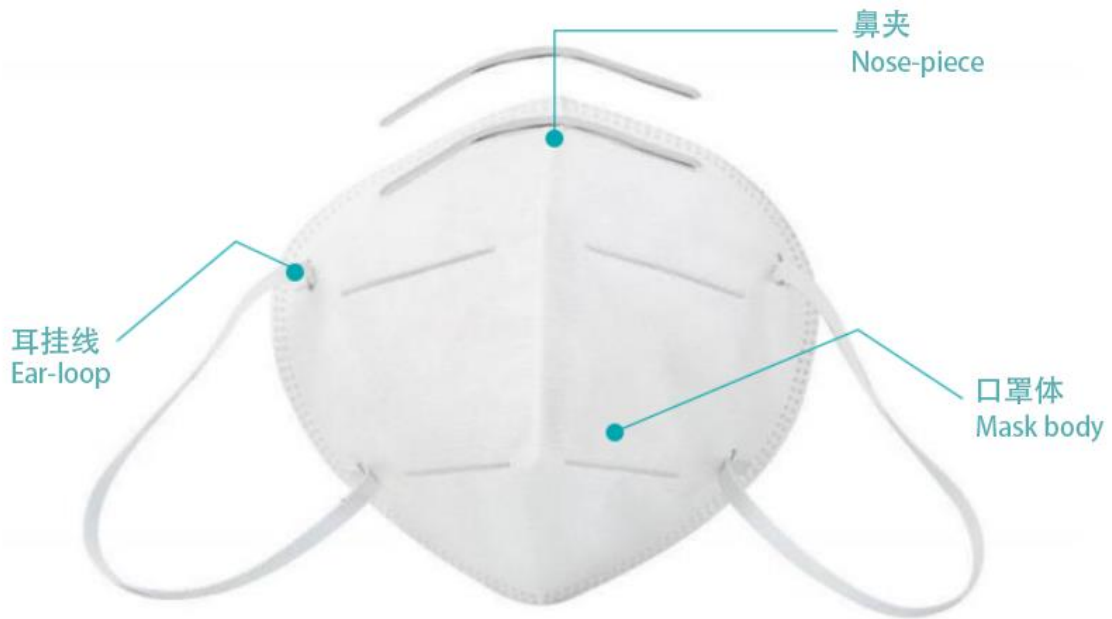


我们的口罩包含 5 层材料: 2 层无纺布、两层熔喷布和一层热风棉。提供了至少 95%对于不含油的固体和液体气溶胶的过滤效率。我们使用超声波粘合方式来密封口罩, 它可产生高质量的粘合力 and 清洁, 紧密的密封。没有其他填充材料, 也没有过多的热量, 这意味着不会潜在地引入污染物或热变形。表面非常的光滑, 不同过滤层之间没有可见的接缝。

This mask has 5 layers of filter which contains 2 layers of spunbond non-woven fabric, 2 layers of meltblown non-woven fabric and 1 layer of wadding. It will protect you from at least 95% filtration efficiency against solid and liquid aerosols that do not contain oil. produces a high-quality bond and a clean, tight seal. Using ultrasonic welding produces a high-quality bond and a clean, tight seal for the mask. No

## Villian KN95 Protective Mask

filler materials and no excessive heat means that there is no potential introduction of contaminants or thermal distortion. There are no visible seams where the parts are joined, creating a smooth, visually appealing finish. The result is a durable bond, superior to many other methods of joining parts.



### 口罩特征

- 专为成人面部轮廓而设计
- 遵循 CDC 结核分枝杆菌暴露控制指南
- FDA 批准用作防护口罩
- 符合 GB2626-2006 和 EN 149: 2001 + A1: 2009 的 95%BFE (细菌过滤效率)
- 非天然橡胶乳胶制品
- 防塌设计
- 轻巧的结构，穿着舒适

### Features of This Mask

- Designed for adult facial profiles
- Meets CDC guidelines for Mycobacterium tuberculosis exposure control
- FDA cleared for use as a protective mask
- 95% BFE (Bacterial Filtration Efficiency) according to GB2626-

## Villian KN95 Protective Mask

2006 and EN 149:2001+A1:2009

- Not made from natural rubber latex
- Collapse resistant design
- Light weight construction for comfortable wear

### **GB2626-2006 KN95 标准**

1. 合成血液穿透: 2ml 合成血液以 10.7KPa (80mmHg) 压力喷向口罩样品外侧面后, 口罩内侧面不应出现渗透
2. 过滤效率: 口罩的细菌过滤率应不小于 95%
3. 过滤效率: 口罩对直径是 0.3 微米的非油性颗粒的过滤效率不小于 95%
4. 阻燃性能: 口罩材料应采用不易燃材料。口罩离开火焰后燃烧不大于 5 秒
5. 每根口罩带与口罩连接点处的断裂强力应不小于 10N
6. 压力差( $\Delta P$ ): 口罩两侧面进行气体交换的压力差 $\Delta P$  应不大于 49Pa

### **GB2626-2006 KN95 Standard**

1. Anti-synthetic blood penetrability: After 2ml of synthetic blood is sprayed at a pressure of 10.7Kpa (80mmHg) to the outer side of the mask, no infiltration should occur to the inner side of the mask
2. Filtration efficiency: The filtration efficiency of mask on gems filtration is not less than 95%
3. Filtration efficiency: The filtration efficiency of mask for non-oily particles with diameter of 0.3 micron is not less than 95%
4. Flame retardant performance: The materials of the mask must use apyrous fabric. The burning time is less than 5 seconds
5. The breaking force at the connection point between each mask belt and the mask body is not less than 10N
6. The pressure difference for gas exchange between two sides of the mask should not be bigger than 49Pa

# Villian KN95 Protective Mask

## 包装

单个口罩重 5.5 克

50 个口罩每盒，用透明塑料袋包装，每袋 5 个，每盒重 288 克

40 盒每箱 (2000 个口罩)，每箱重 13020 克



## Packing

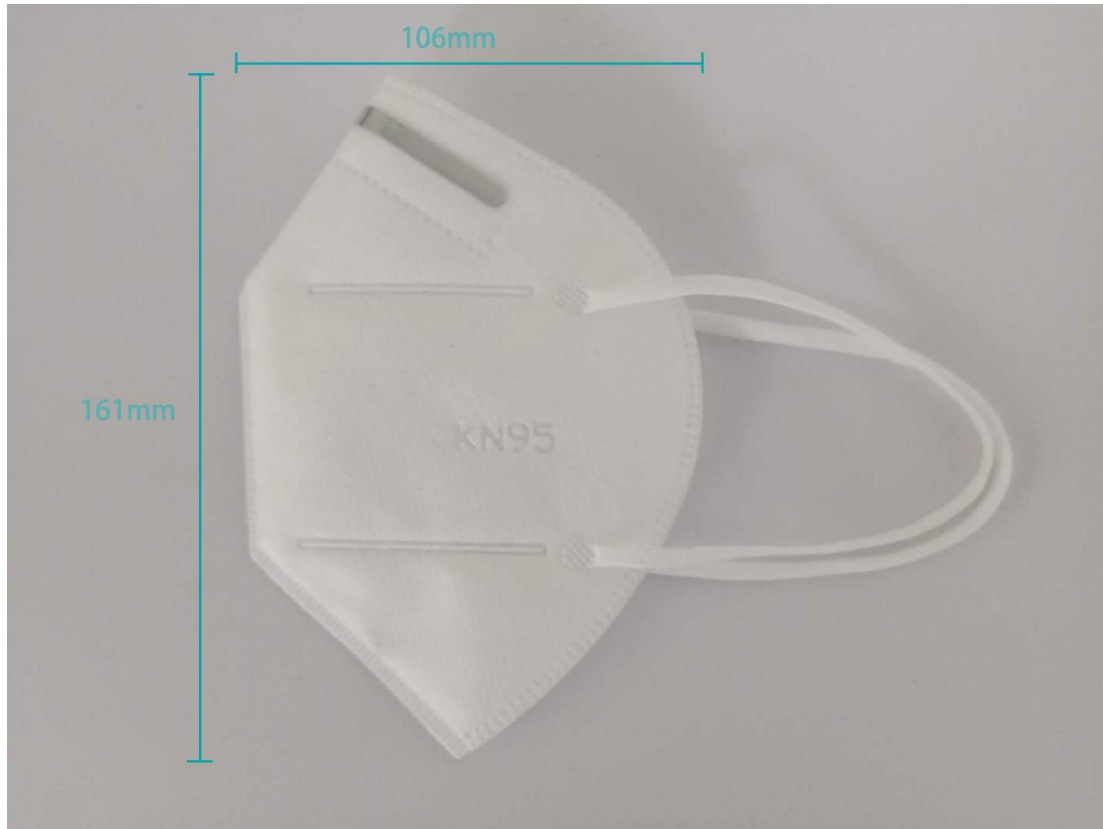
Each mask weighs 5.5 grams



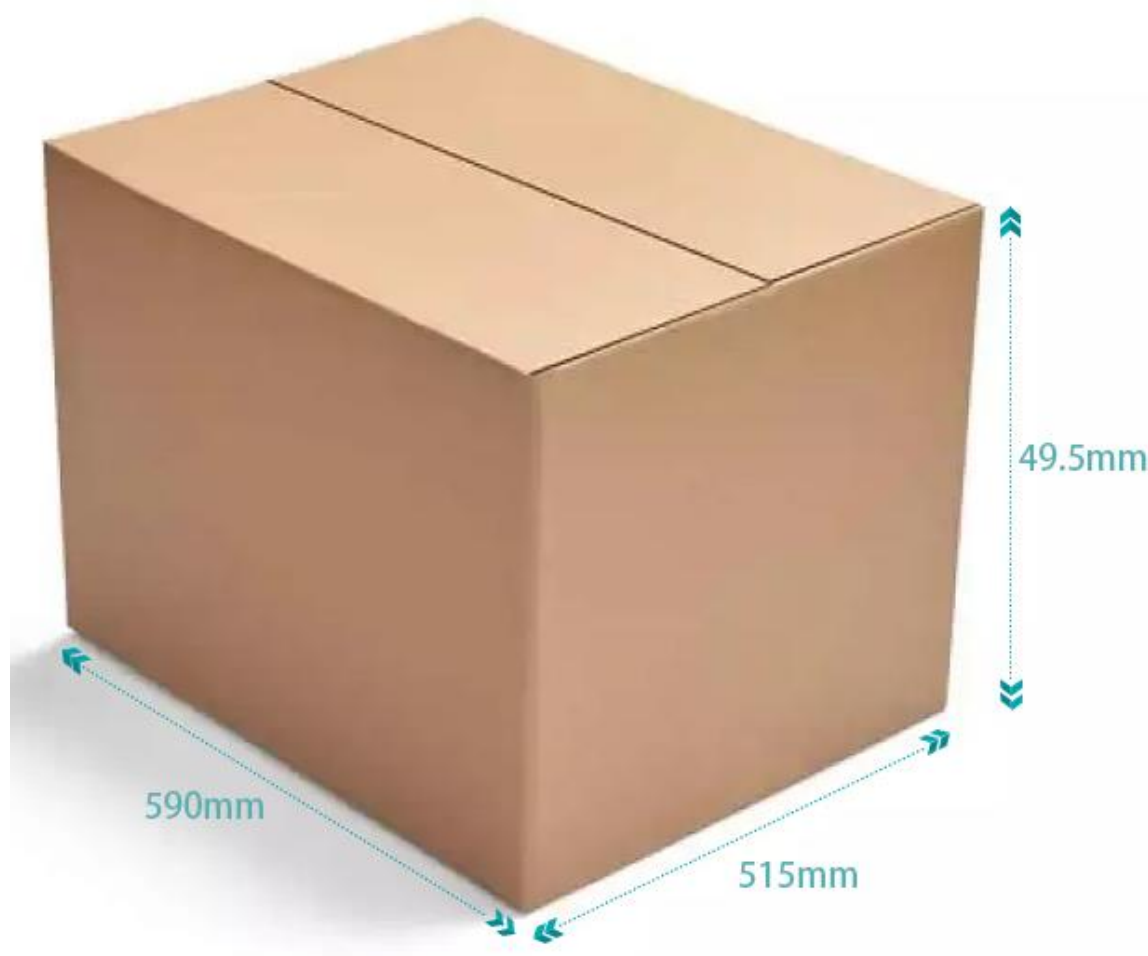
5 masks per plastic bag, 10 bags per box (50 masks), each box weighs 288 grams

40 boxes per carton (2000 masks), each carton weighs 13020 grams

# Villian KN95 Protective Mask



## Villian KN95 Protective Mask





## 营业执照

## Business License



统一社会信用代码  
91350300MA33NUHJ6C

 扫描二维码登录“国家企业信用信息公示系统”了解更多登记、备案、许可、监管信息。

# 营 业 执 照

<p>名 称 莆田市维利恩工贸有限公司</p> <p>类 型 有限责任公司</p> <p>法定代表人 郭钊</p> <p>经营范围 其他未列明产品制造；非医用防护口罩生产、销售；其他未列明批发业；其他未列明零售业；日用杂货批发；货物或技术进出口（国家禁止或涉及行政审批的货物和技术进出口除外）。（依法须经批准的项目，经相关部门批准后方可开展经营活动）</p>	<p>注册 资 本 壹仟伍佰万圆整</p> <p>成 立 日 期 2020年03月27日</p> <p>营 业 期 限 2020年03月27日 至 2040年03月26日</p> <p>住 所 福建省仙游县郊尾镇圣岭街1938号</p>
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登记机关 

2020 年 4 月 14 日



## 相关证书

## Certification

  
ISP CERTIFICATION

**UK INSPEC INTERNATIONAL CO.,LTD**  
The query url: [Http://www.isp-uk.com](http://www.isp-uk.com)

### Declaration Of Conformity

**Applicant** : Putian Villian Industry and Trade Co., Ltd  
**Address** : No.1938 Shengling Street, Jiaowei Town, Xianyou County, Fujian

**Manufacturer**: Putian Villian Industry and Trade Co., Ltd  
**Address** : No.1938 Shengling Street, Jiaowei Town, Xianyou County, Fujian

**DECLARE ON OUR SOLE RESPONSIBILITY THAT THE PRODUCT**

**Product Name** : Mask  
**Main Test Model** : WLE-FFP1  
**Additional Model** : WLE-FFP2, WLE-FFP3

**Test Standard** : EN 149:2001+A1:2009

The EUT described above has been tested by us with the listed standards and found in compliance with the council PPE directive (EU) 2016/425 . It is possible to use CE marking to demonstrate the compliance with this PPE Directive.  
The certificate applies to the tested sample above mentioned only and shall not imply an assessment of the whole production.

Date of issue: Mar 27,2020      Expiry Date: Mar 26,2025

**Detailed Specification of the tested product shown in the following test**  
Certificate No. : 

Issued by:   
**Laboratory Manager**

**CE**

The statement is based on a single evaluation of the sample of abovementioned products.  
It does not imply an assessment of the whole production.

Form QAT\_10-M04, version 00, effective since March 6th, 2020

## Certificate of Compliance



No. **10000000000000000000**

Technical Construction File no. BTS-2363P

Certificate's Holder: **Fujian Villian Industry and Trade Co., Ltd.**  
No.1938 Shengling Street, Jiawei Town,  
Xianyou County, Fujian

Certification ECM  
Mark:



Product: **Protective Face Mask**

Model(s): **WLE-FFP1, WLE-FFP2, WLE-FFP3**

Verification to: **Standard:**  
**EN 149:2001+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](http://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**

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**Fiscal Year 2020**

## **CERTIFICATION OF REGISTRATION**

This certifies that:

**Putian Villian Industry and Trade Co., Ltd**

**No.1938 Shengling Street, Jiaowei Town, Xianyou**

**County, Putian, Fujian, 351200, CHINA**

has completed the FDA Establishment Registration and Device Listing with the US Food & Drug Administration, through

**Shanghai JAT Enterprise Management Consultation Co., Ltd.**

**Owner Operator Number:** [REDACTED]

**Device Listing#:**

Listing No	Code	Device Name	Proprietary Name
D387591	MSH	Respirator, surgical	Protective Face Mask, WLE001, WLE002, WLE003, WLE004, WLE005, KN95, N95

**Device Listing#: See annex**

*JAT will confirm that such registration remains effective upon request and presentation of this certificate until the end of the calendar year stated above, unless said registration is terminated after issuance of this certificate. JAT makes no other representations or warranties, nor does this certificate make any representations or warranties to any person or entity other than the named certificate holder, for whose sole benefit it is issued. This certificate does not denote endorsement or approval of the certificate-holder's device or establishment by the U.S. Food and Drug Administration. JAT assumes no liability to any person or entity in connection with the foregoing.*

*Pursuant to 21 CFR 807.39, "Registration of a device establishment or assignment of a registration number does not in any way denote approval of the establishment or its products. Any representation that creates an impression of official approval because of registration or possession of a registration number is misleading and constitutes misbranding." The U.S. Food and Drug Administration does not issue a certificate of registration, nor does the U.S. Food and Drug Administration recognize a certificate of registration. JAT is not affiliated with the U.S. Food and Drug Administration.*

**JAT**



Chief engineer

Issued: 04/08/2020

Expiration Date: 12/31/2020

检测报告


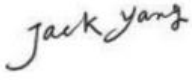
Test Report

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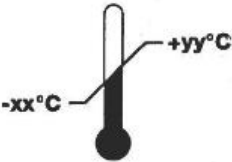




**Disposable protective  
mask  
PPE Test Report**

(File No.:HWT0D1166)

<b>TEST REPORT</b> <b>EN 149</b> <b>Respiratory protective devices — Filtering half masks to protect against particles — Requirements, testing, marking</b>	
Report Number.....:	HWT0D1166
Tested by.....:	Apollo 
Approved by.....:	Jack Yang 
Date of issue.....:	Mar. 30, 2020
Total number of pages.....:	18 pages
Name of Testing Laboratory preparing the Report.....:	Shanghai Biaotong Testing Technology Service Co., Ltd
Applicant's name.....:	Putian Villian Industry and Trade Co., Ltd
Address.....:	No.1938 Shengling Street, Jiaowei Town, Xianyou County, Fujian
<b>Test specification:</b> <b>Standard.....:</b> EN 149:2001+A1:2009 <b>Test procedure.....:</b> Test Report	
<b>General disclaimer:</b> The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing Testing Laboratory.	
<b>Test item description.....:</b> Disposable protective mask <b>Trade Mark.....:</b> / <b>Manufacturer.....:</b> Putian Villian Industry and Trade Co., Ltd <b>Model.....:</b> WLE-FFP2 <b>Classification.....:</b> FFP2 NR D	

Summary of testing:	
<b>Tests performed (name of test and test clause):</b> Full tests	<b>Testing location:</b> Shanghai Biaotong Testing Technology Service Co., Ltd Building 1, liangu Science Park, Lane 2899, Lianhua South Road, Minhang District, Shanghai

Copy of marking plate: The artwork below may be only a draft.	
	Trade mark or name Model: EN 149:2001+A1:2009 FFP2 NR D
<p>yyyy/mm</p> <p>Year      Month      yyyy/mm</p> <p>Code for Dates</p>	 <p>Temperature range of storage conditions</p>
 <p>See information supplied by the manufacturer</p>	 <p>Maximum relative humidity of storage conditions</p>

<b>Possible test case verdicts:</b> <ul style="list-style-type: none"><li>- test case does not apply to the test object... : N/A</li><li>- test object does meet the requirement..... : P (Pass)</li><li>- test object does not meet the requirement... : F (Fail)</li></ul>	
<b>Testing:</b> <b>Date of receipt of test item.....:</b> Mar.31,2020 <b>Date (s) of performance of tests.....:</b> Mar.30,2020	
<b>General remarks:</b>	
<b>Name and address of factory.....:</b>	Putian Villian Industry and Trade Co., Ltd No.1938 Shengling Street, Jiaowei Town, Xianyou County, Fujian
<b>General product information:</b> Disposable protective mask WLE-FFP2	



EN 149:2001+A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
<b>5</b>	<b>Classification</b>		<b>P</b>
	Particle filtering half masks are classified according to their filtering efficiency and their maximum total inward leakage. There are three classes of devices:	Complied	<b>P</b>
	- FFP1	FFP1	<b>N</b>
	- FFP2	FFP2	<b>P</b>
	- FFP3	FFP3	<b>N</b>
<b>6</b>	<b>Designation</b>		<b>P</b>
	Particle filtering half masks meeting the requirements of this European Standard. Year of publication, classification		<b>P</b>
<b>7</b>	<b>Requirements</b>		<b>P</b>
7.1	In all tests all test samples shall meet the requirements	Complied	<b>P</b>
7.2	Nomial values and tolerances		<b>P</b>
	Unless otherwise specified, the values stated in this European Standard are expressed as normal values.	Actual using value is clear	<b>P</b>
7.3	Visual inspection		<b>P</b>
	The visual inspection shall also include the marking and the information supplied by the manufacturer.	Clear marking is provided, see sample body	<b>P</b>
7.4	Packaging		<b>P</b>
	Masks shall be offered for sale packaged in such a way that they are protected against mechanical damage and contamination before use.	Distinct design and warning are made on packaging, see packaging.	<b>P</b>
7.5	Material		<b>P</b>
	Materials used shall be suitable to withstand handling and wear over the period. Any material from the filter media released shall not constitute a hazard or nuisance for the wearer.	Comfortable wearing, when releasing no hazards is produced	<b>P</b>
7.6	Cleaning and disinfecting		<b>N</b>
	The materials used shall withstand the cleaning and disinfecting	Single-use equipment	<b>N</b>
7.7	Practical performance		<b>P</b>
	The particle filtering half mask shall undergo practical performance tests under realistic conditions.		<b>P</b>
7.8	Finish of parts	Soft equipment	<b>N</b>

EN 149:2001+A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	Parts likely to come into contact with the wearer shall have no sharp edges or burrs		N
7.9	Leakage		P
7.9.1	Total inward leakage		P
	The laboratory tests shall wearer to protect with high probability against the potential hazard to be expected.	Enough safe condition is provide	P
	Exercise results for total inward leakage shall be not greater than		P
	25% for FFP1		N
	11% for FFP2	FFP2 Measured P(%)=6.5%	P
	5% for FFP3		N
7.9.2	Penetration of filter material		P
	Meet the requirements of Table 1	FFP2 Sodium chloride test: 4.5%	P
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.	Have no irritation or adverse effect to skin and 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.		P
7.12	Carbon dioxide content of the inhalation air		N
	The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume).	<1.0%	P
7.13	Head harness		P
	Head harness shall be designed so that mask can be donned and removed easily.	The design is considered	P
	Head harness shall be adjustable or self-adjusting and sufficiently robust to hold the mask firmly in position.	The design is considered	P
7.14	Field of vision		P
	The field of vision is acceptable if determined so in practical performance tests.	Clear field of vision when wearing	P
7.15	Exhalation valve(s)	No exhalation valve	N
	A particle filtering half mask may have one or more exhalation valve(s) and shall function correctly in all orientations.		N

EN 149:2001+A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N
	Exhalation valve(s) shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s.		N
	Exhalation valve housing is attached to the faceblank, and withstand axially a tensile force of 10 N applied for 10 s.		N
7.16	Breathing resistance		P
	The breathing resistances apply to valved and valveless and shall meet the requirements	See 8.9	P
7.17	Clogging		P
7.17.1	General		P
	For single-use devices clogging test is an optional test.	Single-use device	P
	Devices designed to be resistant to clogging, shown by a slow increase		P
	The specified breathing resistances shall not be exceeded before the required dust load of 833 mg·h/m <sup>3</sup> .		P
7.17.2	Breathing resistance		P
7.17.2.1	Valved particle filtering half masks		N
7.17.2.2	Valveless particle filtering half masks	See 8.9	P
	After clogging the inhalation and exhalation resistances shall not exceed <ul style="list-style-type: none"> <li>- FFP1: 3 mbar</li> <li>- FFP2: 4 mbar</li> <li>- FFP3: 5 mbar</li> </ul>	Measured less than 4mbar Meet the requirement of FFP2	P
	at 95 l/min continuous flow.		P
7.17.3	Penetration of filter materia		P
	All types claimed to meet the clogging requirement shall also meet the penetration requirements given in 7.9.2 after the treatment.		P
7.18	Demountable parts	No any such part	N
	All demountable parts (if fitted) shall be readily connected and secured, where possible by hand.		N
<b>8</b>	<b>Testing</b>		<b>P</b>
8.1	General		P

EN 149:2001+A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	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 appropriate by the test house prior to laboratory or practical performance tests.		P
8.3	Conditioning		P
8.3.1	Simulated wearing treatment		P
	A breathing machine is adjusted to 25 cycles/min and 2,0 l/stroke.	25 cycles/min 2,0 l/stroke.	P
	For testing, a saturator is incorporated in the exhalation line between the breathing machine and the dummy head,	a saturator incorporated by breathing machine and the dummy head	P
	The spilling out of the dummy's mouth and contaminating the particle filtering half mask the head shall be incline	Incline considered	P
8.3.2	Temperature conditioning		P
	Exposet masks to the following thermal cycle:		P
	a) for 24 h to a dry atmosphere of $(70 \pm 3) ^\circ\text{C}$ ;		P
	b) for 24 h to a temperature of $(-30 \pm 3) ^\circ\text{C}$ ;		P
	Allow to return to room temperature for at least 4 h between exposures and prior to subsequent testing.	4h	P
8.3.3	<b>Mechanical strength</b>		P
	Conditioning shall be done in accordance with EN 143.		P
8.3.4	<b>Flow conditioning</b>		P
	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	<b>Practical performance</b>		P
8.4.1	<b>General</b>		P
	A total of 2 particle filtering half masks shall be tested: both as received.		P
	All tests shall be carried out by two test subjects at ambient temperature and the test temperature and humidity shall be recorded.		P

EN 149:2001+A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	Examination shall be done in accordance with 8.2.		P
	For the test, persons shall be selected who are familiar with using such or similar equipment.		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
	a) head harness comfort;		P
	b) security of fastenings;		P
	c) field of vision;		P
	d) any other comments reported by the wearer on request.		P
8.4.2	<b>Walking test</b>		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	<b>Work simulation test</b>		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
	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
	a) walking on the level with headroom of $(1,3 \pm 0,2)$ m for 5 min;		P
	b) crawling on the level with headroom of $(0,70 \pm 0,05)$ m for 5 min;		P



EN 149:2001+A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	c) filling a small basket (see Figure 1, approximate volume = 8 l) with chippings or other suitable material from a hopper which stands 1,5 m high and has an opening at the bottom to allow the contents to be shovelled out and a further opening at the top where the basket full of chippings is returned.		P
	The subject shall stoop or kneel as he wishes and fill the basket with chippings. He shall then lift the basket and empty the contents back into the hopper. This shall be done 20 times in 10 min.		P
8.5	<b>Leakage</b>		P
8.5.1	<b>General test procedure</b>		P
8.5.1.1	<b>Total inward leakage</b>		P
	A total of 10 test specimens shall be tested: 5 as received and 5 after temperature conditioning in accordance with 8.3.2.	10 samples	P
	The total inward leakage shall be tested using sodium chloride aerosol.		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
	Examination shall be done in accordance with 8.2.		P
	For the test, persons shall be selected who are familiar with using such or similar equipment.		P
	A panel of ten clean-shaven persons (without beards or sideburns) shall be selected covering the spectrum of facial characteristics of typical users (excluding significant abnormalities). It is to be expected that exceptionally some persons cannot be satisfactorily fitted with a particle filtering half mask. Such exceptional subjects shall not be used for testing particle filtering half masks.		P
8.5.1.2	<b>Test equipment</b>		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

EN 149:2001+A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	A level treadmill is required capable of working at 6 km/h.	6 km/h	P
8.5.1.3	Test procedure		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
	Inform the test subjects that if they wish to adjust the particle filtering half mask during the test they may do so. However if this is done, repeat the relevant section of the test, having allowed the system to resetttle.		P
	The test subjects shall have no indication of the results as the test proceeds.		P
	After fitting the particle filtering half mask, ask each test subject 'Does the mask fit?'. If the answer is 'Yes', continue the test. If the answer is 'No', take the test subject off the panel, report the fact and replace with another test subject.		P
	The test sequence shall be as follows:		P
	a) Ensure the test atmosphere is OFF.		P
	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.		P
	c) Obtain a stable reading.		P
	d) Turn the test atmosphere ON.		P
	e) The subject shall continue to walk for a further 2 min or until the test atmosphere has stabilized.		P
	f) Whilst still walking the subject shall perform the following exercises:		P
	1) walking for 2 min without head movement or talking;		P
	2) turning head from side to side (approx. 15 times), as if inspecting the walls of a tunnel for 2 min;		P



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Clause	Requirement + Test	Result - Remark	Verdict
	3) moving the head up and down (approx. 15 times), as if inspecting the roof and floor for 2 min;		P
	4) reciting the alphabet or an agreed text out loud as if communicating with a colleague for 2 min;		P
	5) walking for 2 min without head movement or talking.		P
	g) Record		P
	1) enclosure concentration;		P
	2) the leakage over each exercise period.		P
	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
8.5.2	<b>Method</b>		P
8.5.2.1	<b>Principle</b>		P
	The subject wearing the particle filtering half mask under test walks on a treadmill over which is an enclosure.		P
8.5.2.2	<b>Test equipment</b>	Meet the requirements specified	P
8.5.2.3	<b>Expression of results</b>		P
	<p>The leakage P shall be calculated from measurements made over the last 100 s of each of the exercise periods to avoid carry over of results from one exercise to the other.</p> $P(\%) = \frac{C_2}{C_1} \times \left( \frac{t_{IN} + t_{EX}}{t_{IN}} \right) \times 100$	<p>Measured P(%)=6.5%&lt;11% Meet the requirement for FFP2</p>	P
8.6	<b>Flammability</b>		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.	Two samples as received, and other two samples conditioned	P
	The single burner test is carried out according to the following procedure.		P
	The facepiece is put on a metallic dummy head which is motorized such that it describes a horizontal circle with a linear speed, measured at the tip of the nose, of (60 ± 5) mm/s.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The head is arranged to pass over a propane burner the position of which can be adjusted. By means of a suitable gauge, the distance between the top of the burner, and the lowest part of the facepiece (when positioned directly over the burner) shall be set to $(20 \pm 2)$ mm.		P
	The test shall be repeated to enable an assessment to be made of all materials on the exterior of the device. Any one component shall be passed through the flame once only.		P
8.7	<b>Carbon dioxide content of the inhalation air</b>		P
	A total of 3 particle filtering half masks shall be tested: all 3 as received.	3 samples as received	P
	To measure the CO <sub>2</sub> content of the inhaled air, 5 % of the stroke volume of the inhalation phase of the breathing machine is drawn off at the marked place by an auxiliary lung and fed to a CO <sub>2</sub> analyser. The total dead space of the gas path (excluding the breathing machine) of the test installation should not exceed 2000 ml.		P
	Measure the carbon dioxide content of the inhaled air and record continuously.	Less than an average of 1,0 % (by volume).	P
	The test shall be performed until a constant carbon dioxide content in the inhalation air is achieved.		P
8.8	<b>Strength of attachment of exhalation valve housing</b>	No exhalation valve	N
	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.		N
	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.		N
8.9	<b>Breathing Resistance</b>		P
8.9.1	Test samples and fixture		P
8.9.1.1	Valveless particle filtering half masks		P
	A total of 9 valveless particle filtering half masks shall be tested:		P
	3 as received, 3 after temperature conditioning in accordance with 8.3.2 and 3 after the test for simulated wearing in accordance with 8.3.1		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.9.1.2	Valved particle filtering half mask	Not such mask	N
	A total of 12 valved particle filtering half masks shall be tested: 3 as received, 3 after temperature conditioning in accordance with 8.3.2, 3 after the test for simulated wearing in accordance with 8.3.1 and 3 after the flow conditioning in accordance with 8.3.4.		N
	The particle filtering half mask shall be fitted securely in a leaktight manner but without deformation on the Sheffield dummy head.		N
	The flow rate at which the resistance is measured shall be corrected to 23°C and 1 bar absolute.		N
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
	Measure the exhalation resistance with the dummy head successively placed in 5 defined positions:	Measured 2.0 mbar at 160 l/min.	P
	- facing directly ahead		P
	- facing vertically upwards		P
	- facing vertically downwards		P
	- lying on the left side		P
	- lying on the right side		P
8.9.3	Inhalation resistance		P
	Test the inhalation resistance at 30 l/min and 95 l/min continuous flow.	Measured 0.6 mbar at 30 l/min, and 2.2 mbar at 95 l/min.	P
8.10	Clogging		P
8.10.1	Principle		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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
8.10.2	Test equipment	Meet the requirements specified	P
8.10.3	Test conditions		P
	Dust: DRB 4/15 dolomite		P
	The size distribution of dolomite dust is given in Table 3 of this standard.		P
8.10.4	Test procedure		P
	Convey dust from the distributor to the dust chamber where it is dispersed into the air stream of 60 m <sup>3</sup> /h.		P
	Fit the sample particle filtering half mask in a leaktight manner to a dummy head or a suitable filter holder located in the dust chamber. Connect the breathing machine and humidifier to the sample and operate for the specified testing time.		P
	The concentration of dust in the test chamber may be measured by drawing air at 2 l/min through a sampling probe equipped with a pre-weighed, high efficiency filter (open face, diameter 37 mm) located near the test sample		P
	Calculate the dust concentration from the weight of dust collected, the flow rate through the filter and the time of collection.		P
8.10.5	Assessment of clogging		P
	Following the exposure, measure the breathing resistance of the particle filtering half mask using clean air. Then measure the filter penetration in accordance with 8.11.	Measured 2.5 mbar at 95 l/min, and 1.8 mbar at 160 l/min	P
8.11	Penetration of filter material		P
	The device shall be mounted in a leaktight 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



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Clause	Requirement + Test	Result - Remark	Verdict
	Testing of penetration, exposure and storage shall be done in accordance with EN 13274-7.		P
<b>9</b>	<b>Marking</b>		P
9.1	Packaging		P
	The following information shall be clearly and durably marked on the smallest commercially available packaging or legible through it if the packaging is transparent.	Complied, clearly marked	P
9.1.1	The name, trademark or other means of identification of the manufacturer or supplier.	See packaging	P
9.1.2	Type-identifying marking.		P
9.1.3	Classification: FFP1, FFP2, FFP3.	FFP2	P
9.1.4	The number and year of publication of this European Standard.		P
9.1.5	At least the year of end of shelf life.		P
9.1.6	The sentence 'see information supplied by the manufacturer', at least in the official language(s) of the country of destination, or by using the pictogram as shown in Figure 12b.	English used	P
9.1.7	The manufacturer's recommended conditions of storage (at least the temperature and humidity) or equivalent pictogram, as shown in Figures 12c and 12d.	See packaging	P
9.1.8	The packaging of those particle filtering half masks passing the dolomite clogging test shall be additionally marked with the letter "D".		P
9.2	Particle filtering half mask		P
	Particle filtering half masks		P
	Complying with this European Standard shall be clearly and durably marked with the following:		P
9.2.1	The name, trademark or other means of identification of the manufacturer or supplier.		P
9.2.2	Type-identifying marking.		P
9.2.3	The number and year of publication of this European Standard.	EN 149:2001+A1:2009	P
9.2.4	The symbols FFP1, FFP2 or FFP3 according to class.	FFP2 NR	P
9.2.5	If appropriate the letter D (dolomite) in accordance with clogging performance. This letter shall follow the class designation (see 9.2.4).	FFP2 NR D	P

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Clause	Requirement + Test	Result - Remark	Verdict
9.2.6	Sub-assemblies and components with considerable bearing on safety shall be marked so that they can be identified.		P

<b>10</b>	<b>Information to be supplied by the manufacturer</b>		<b>P</b>
10.1	Information supplied by the manufacturer shall be at least in the official language(s) of the country of destination.	English	P
10.3	The information supplied by the manufacturer shall contain all information necessary for trained and qualified persons on <ul style="list-style-type: none"> <li>- application/limitations;</li> <li>- the meaning of any colour coding;</li> <li>- checks prior to use;</li> <li>- donning, fitting;</li> <li>- use;</li> <li>- maintenance (e.g. cleaning, disinfecting), if applicable;</li> <li>- storage;</li> <li>- the meaning of any symbols/pictograms used of the equipment.</li> </ul>	See packaging	P
10.4	The information shall be clear and comprehensible. If helpful, illustrations, part numbers, marking shall be added.	Clearly considered	P
10.5	Warning shall be given against problems likely to be encountered, for example: <ul style="list-style-type: none"> <li>- fit of particle filtering half mask (check prior to use);</li> <li>- it is unlikely that the requirements for leakage will be achieved if facial hair passes under the face seal;</li> <li>- air quality (contaminants, oxygen deficiency);</li> <li>- use of equipment in explosive atmosphere.</li> </ul>	See packaging	P
10.6	The information shall provide recommendations as to when the particle filtering half mask shall be discarded.		P

# Villian KN95 Protective Mask

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## Photos:



## Model:



=====END=====