



## Module B EU Type-Examination Certificate

For the requirements of PPE Regulation 2016/425

Certificate No.: CE-PC-200530-449-01-9B

<b>Certificate holder:</b>	<b>Anhui Zhongnan Air Defence Works Protective Co., Ltd.</b> Qianshan Comprehensive Economic Development Zone, Anhui Province, China
<b>Product:</b>	<b>Particle filtering half mask</b> Detailed product description listed in the Annex
<b>Model(s):</b>	ZN9501
<b>Standard(s):</b>	EN 149:2001+A1:2009 Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking
<b>Issue date:</b>	2020-06-15
<b>Revision date:</b>	2020-09-14
<b>Expiry date:</b>	2021-06-14

The product(s) on this certificate and the Technical File have been assessed and found to be in conformance with the applicable Essential Health and Safety Requirements in Annex II of the PPE regulation 2016/425.

Any changes to the design, manufacturing location or manufacture of the PPE product certified here must be advised to CCQS Certification Services Limited for review.

CE marking shall not be applied until the requirements of all the PPE Regulation 2016/425 and relevant EN Harmonised standards and/or Technical specifications have been met.

If the certified product is Category III then this certificate is only valid if used in conjunction with Conformity Assessment against Module C2 or Module D.

This certificate remains the property of CCQS and maybe withdrawn at any time if it is considered that the equipment is no longer in conformity with the requirements of the PPE Regulation 2016/425.



Approved by Ireland  
Government  
as a Notified Body  
for CE Marking No.2834



### CCQS Certification Services Limited

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Tel: +00 353 1 588 6920 Website: [www.ccqs.co.uk](http://www.ccqs.co.uk) E-mail: [verify@ccqs.ie](mailto:verify@ccqs.ie)

If in any doubt about the integrity of this certificate, please contact CCQS by email to verify.



# Module B EU Type-Examination Certificate

## Annex

For the requirements of PPE Regulation 2016/425

Certificate No.: CE-PC-200530-449-01-9B

**Applicable standards and specification:**

EN 149:2001+A1:2009 Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking

Model reference	Product description
ZN9501	Folding filtering half mask fitted with ear loops with head harness clip, no valves, internal metal nose clip Mask body color: White, Black, Gray, Blue, Pink Classification: FFP2 NR Test report No.: WLH0241-2020, WLH0515-2020

Certificate Revision	Revision date	Revision details
A	2020-06-15	Initial issue
B	2020-09-14	Certificate validity extended to one year



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## Certificate of Module C2 production monitoring for equipment within the scope of Personal Protective Equipment Regulation (EU) 2016/425 Category III

FPC Certificate No.: CE-PC-200530-449-FPC-B

<b>Certificate holder:</b>	<b>Anhui Zhongnan Air Defence Works Protective Co., Ltd.</b> Qianshan Comprehensive Economic Development Zone, Anhui Province, China
<b>Manufacturing Location:</b>	Qianshan Comprehensive Economic Development Zone, Anhui Province, China
<b>The scope of the certification for:</b>	<b>The manufacture of respiratory protective device</b> See annex for articles covered by this certificate
<b>Validity from:</b>	2020-06-15
<b>Revision date:</b>	2020-09-14
<b>To:</b>	2021-06-14

CCQS Certification Services Limited in its role as a Notified Body for PPE Regulation, is monitoring that the manufacturer is producing PPE in conformity with the type described in the EU type-examination certificate and associated technical file and which satisfies the Essential Health and Safety Requirements of the Regulation. The equipment covered by this certificate is listed in the accompanying schedule. This certificate is not complete and has no validity without the accompanying schedule and revision index. The manufacturer is hereby authorized to affix our Notified Body number, 2834, to each item of PPE mentioned in the schedule which accompanies this certificate whilst this certificate remains valid. This certificate and the accompanying schedule remain the property of CCQS and maybe withdrawn or revised at any time if CCQS considers that the equipment is no longer in conformity with the requirements of the Regulation.



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## Schedule of Module C2 production monitoring for equipment within the scope of Personal Protective Equipment Regulation (EU) 2016/425 Category III

Schedule to CCQS FPC Certificate No.: CE-PC-200530-449-FPC-B

Product reference and description		Reference standard
Particle Filtering Half Mask	Model: ZN9501	EN 149:2001+A1:2009

Certificate Revision	Revision date	Revision details
A	2020-06-15	Initial issue
B	2020-09-14	Certificate validity extended to one year

This schedule has no validity without the accompanying certificate.

This schedule and the accompanying certificate remain the property of CCQS and maybe withdrawn or revised at any time if CCQS considers that the equipment is no longer in conformity with the requirements of the Regulation.



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**EU Declaration of Conformity**  
**Annex IX PPE Regulation (EU) 2016/425**

This EU Declaration of conformity refers to the following products:

1. Product info

Name: Particle filtering half mask

Model: ZN9501

Classification: FFP2

Serial No.: ---

2. The Manufacturer's name and address is as follows:

Name: Anhui Zhongnan Air Defence Works Protective Co., Ltd.

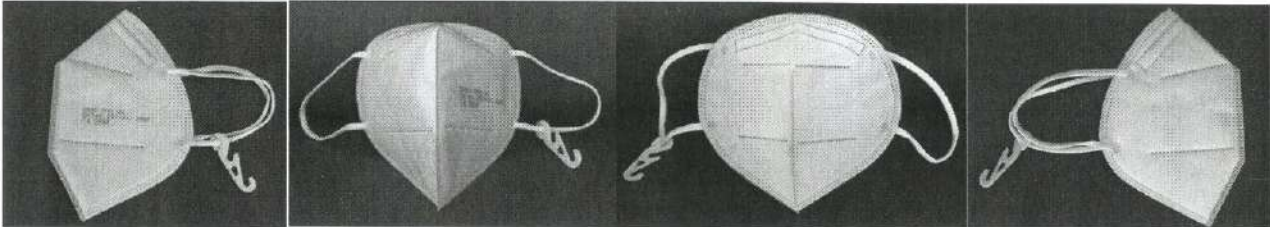
Address: Qianshan Comprehensive Economic Development Zone, Anhui Province, China

3. This Declaration of Conformity is issued under the sole responsibility of the Manufacturer.

4. Detailed description of the PPE to allow traceability/identification of the PPE.

ZN9501

Folding particle filtering half mask without valve (Color: white,black,gray,pink,bule) , internal metal nose clip,the following shows only white samples



The article identified in (4) above is in conformance with the relevant Union Harmonization Legislation Regulation (EU) 2016/425.

References to the relevant harmonized standards used, including the date of the standard, or references to the other technical specifications, including the date of the specification, in relation to which conformity is declared:

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

CCQS Certification Services Limited. (NB 2834) performed the EU Type Examination (Module B) and issued the Type Examination Certificate Number: Module B

No.	EU Type Examination (Module B) Certificate Number
1	CE-PC-200530-449-01-9B

Product Category:

This product is Category III and is subject to Module C2 internal production control plus supervised product checks at random intervals and is under the surveillance of CCQS Certification Services Limited. (NB 2834)

This product is Category III and is subject to Module D Conformity to type based on quality assurance of the production process and is under the surveillance of CCQS Certification Services Limited. (NB 2834)

Signature: Bin Ge

Date: 2020-9-4

Company stamp and/or legal signature





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The results of tests, calibrations and/or measurements included in this document are traceable to Chinese/national standards.

CNAS is a signatory to the ILAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

# TEST REPORT

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

**Filtering half masks to protect against particles**

**Report no:** WLH0241-2020  
**Product:** KN95 Protective Mask (Non-Medical)  
**Model (s):** ZN9501  
**Main components:** Mask body, without exhalation valve  
**Date(s) of tests:** 18<sup>th</sup> Apr~8<sup>th</sup> May 2020

<p><b>Client</b></p> <p><b>Anhui Zhongnan Air Dedence Works Protective Co., Ltd.</b></p> <p>Client order: / Order(s) received: Apr, 2020</p>	<p><b>Manufacturer</b></p> <p><b>Anhui Zhongnan Air Dedence Works Protective Co., Ltd.</b></p> <p>Qianshan Comprehensive Economic Development Zone, Anhui Province, China</p> <p>Contact: Mr. Chu E-mail: / Phone: +8618956915566</p>
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**Conditions:**

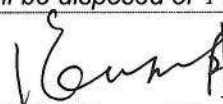
*This report shall not be reproduced except in full, without the written approval of CASST.*

*The results described in this test report refer to the mentioned test samples, exclusively. A copy of the test report, complete or in extracts, is not allowed without any written permission of the CASST.*

*Any objection should be submitted within 2 weeks from the date of receipt of the report, and it will not be accepted after the deadline.*

*Specimens will be disposed of 4 weeks from the date of this report, unless otherwise instructed.*

**Signed:**

  
张明明/Zhang Mingming, Authorized Signatory

**Issued:** 2020-05-09



**Summary of assessment\***

Clause		Assessment
Model:		ZN9501
7.4	Packaging	Pass
7.5	Material	Pass
7.6	Cleaning and disinfecting	NAp
7.7	Practical performance	Pass
7.8	Finish of parts	Pass
7.9.1	Total inward leakage	Pass
7.9.2	Penetration of filter material: Sodium chloride	Pass
7.9.2	Penetration of filter material: Paraffin oil	Pass
7.10	Compatibility with skin	Pass
7.11	Flammability	Pass
7.12	Carbon dioxide content of the inhalation air	Pass
7.13	Head harness	Pass
7.14	Field of vision	Pass
7.15	Exhalation valve(s)	NAp
7.16	Breathing resistance	Pass
7.17	Clogging	NRq
7.18	Demountable parts	NAp
9	Marking	NRq
10	Information to be supplied by the manufacturer	NRq

**Key**

	Shading shows the clauses requested.
NRq	The clauses were not requested.
Pass	Requirement satisfied.
Ltd	Testing requested was insufficient completely to verify compliance with the clause. Refer to the "Result details" section for more information.
Fail	Requirement not satisfied. Refer to the "Result details" section for more information.
NAs	Assessment not carried out.
NAp	Requirement not applicable.
NT	Requested but not tested due to early termination following failure.

\* Assessment relates only to those specimens which were tested and are the subject of this report.

**Product characteristics**

Property	Characteristic
Model	ZN9501
Classification claimed	FFP2 NR
Exhalation valve(s)	-

**Submission details**

Product	Quantity	Date received	Specimen No.
ZN9501 KN95 Protective Mask (Non-Medical)	86	18 <sup>th</sup> April 2020	WLH0241-2020-01 to -86

**Photographs of the products tested**

Anhui Zhongnan Air Dedence Works Protective Co., Ltd.'s model ZN9501 KN95 Protective Mask (Non-Medical)



CASST specimen number WLH0241-2020-09

**Procedures**

Specimens were selected at random from the submission(s) detailed above.

Testing was performed in accordance with EN 149:2001 incorporating Corrigendum No. 1 (January 2003), and amendment A1 (2009) unless otherwise specified below. Reference should be made to the standard when reading this report.

Unless stated otherwise, specimens were tested in the condition as received.



**Result details****7.4 Packaging****Pass<sup>1</sup>**

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.

**Note 1: In accordance with the requirement.**

**7.5 Material****Pass<sup>2</sup>**

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.

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.

**Note 2: In accordance with the requirement.**

**Specimens -03, -04, -05 were conditioned in accordance with 8.3.1, None of the specimens conditioned suffered mechanical failure or collapse.**

**Specimens -06, -07, -08 were conditioned in accordance with 8.3.2, None of the specimens conditioned suffered collapse.**

**7.6 Cleaning and disinfecting****NAp<sup>3</sup>**

If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer.

With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.

**Note 3: Single shift use only.**

**7.7 Practical performance****Pass<sup>4</sup>**

The particle filtering half mask shall undergo practical performance tests under realistic conditions.

**Note 4: No imperfections.**

**Specimen and subject details:**

Specimen	Subject
-01	TJ
-02	SM

**7.8 Finish of parts****Pass<sup>5</sup>**

Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.

**Note 5: None of the specimens used in limited laboratory testing undertaken showed the evidence of sharp edges or burrs.**

**7.9.1 Total inward leakage (%)****Pass<sup>6</sup>**

For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25 % for FFP1, **11 % for FFP2**, 5 % for FFP3;

and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22 % for FFP1, **8 % for FFP2**, 2 % for FFP3.

**Note 6: 47 out of the 50 individual exercise results were not greater than 11%; 8 out of the 10 individual wearer arithmetic means were not greater than 8%. Detailed data are showed below..**

Subject	Specimen	Cond	Walk	Head side/ side	Head up/down	Talk	Walk	Mean
TS	-11	AR	4.9	12.1	8.3	7.5	5.9	7.7
ZMM	-12	AR	4.8	6.1	5.4	5.9	3.8	5.2
YZF	-13	AR	7.2	7.8	7.4	8.3	7.5	7.6
LCF	-14	AR	5.4	9.9	6.2	6.4	5.6	6.7
NXL	-15	AR	4.4	8.2	5.0	5.3	4.6	5.5
TJ	-40	TC	7.7	7.8	9.5	6.8	7.3	7.8
SM	-41	TC	6.5	10.9	10.3	6.8	7.5	8.4
WCS	-42	TC	4.3	5.5	4.8	5.3	3.4	4.6
YB	-43	TC	4.1	7.0	10.8	6.1	3.6	6.3
GJB	-44	TC	8.0	13.4	12.6	8.3	9.2	10.3
Maximum permitted			11					8

**Subject facial dimensions:**

Subject	Face Length (mm)	Face Width (mm)	Face Depth (mm)	Mouth Width (mm)
ZMM	114	157	119	50
WCS	109	136	105	56
YZF	113	151	106	48
TS	97	146	102	51
TJ	105	151	110	52
SM	116	144	109	49
LCF	119	165	121	56
YB	112	150	119	66
NXL	113	147	108	53
GJB	109	154	109	57

## 7.9.2 Penetration of filter material

Pass

The penetration of the filter of the particle filtering half mask shall meet the requirements:

Classification	Maximum penetration of test aerosol	
	Sodium chloride test 95 l/min, %, Max	Paraffin oil test 95 l/min, %, Max
FFP1	20	20
<b>FFP2</b>	<b>6</b>	<b>6</b>
FFP3	1	1

## Sodium chloride test results: (Pass)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-16	A.R.	0.59	
-17		0.17	
-18		1.62	
-66	S.W.	1.89	
-67		1.11	
-68		1.34	
-45	M.S. + T.C.	3.96	4.88
-46		2.99	3.16
-47		2.91	4.28
<b>Maximum permitted</b>		<b>6</b>	

## Paraffin oil test results: (Pass)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-19	A.R.	0.73	
-20		0.66	
-21		1.36	
-69	S.W.	0.79	
-70		0.71	
-71		0.91	
-48	M.S. + T.C.	3.87	5.82
-49		2.64	4.93
-50		1.66	4.01
<b>Maximum permitted</b>		<b>6</b>	

**7.10 Compatibility with skin****Pass<sup>7</sup>**

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.

**Note 7: Specimens from -22 to -26 (A.R.) and from -51 to -55 (T.C.) were tested. No irritation or any other adverse effect to health.**

**7.11 Flammability****Pass**

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.

Specimen	Condition	Results
-27	A.R.	burn for 0.5 s
-28		burn for 0.8 s
-56	T.C.	burn for 0.5 s
-57		burn for 0.4 s

**7.12 Carbon dioxide content of the inhalation air****Pass**

The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume).

Specimen	CO <sub>2</sub> (%)
-29	0.37
-30	0.41
-31	0.36
<b>Maximum permitted</b>	<b>1.0</b>

**7.13 Head harness****Pass<sup>8</sup>**

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.

**Note 8: Specimens from -32 to -36 (A.R.) and from -58 to -62 (T.C.) were tested. Head harness can be donned and removed easily, adjustable or self-adjusting and have sufficiently robust to hold the face mask firmly. The product satisfied the total inward leakage requirements. See 7.9.1 for results.**

**7.14 Field of vision****Pass<sup>9</sup>**

The field of vision is acceptable if determined so in practical performance tests.

**Note 9: Specimens from -09 and -10 (A.R.) were tested. Pass the practical performance tests and no adverse comments.**

**7.15 Exhalation valve****NAp**

A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations.

If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.

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.

When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s.

**7.16 Breathing resistance****Pass<sup>10</sup>**

Classification	Maximum permitted resistance (mbar)		
	inhalation		exhalation
	30 l/min	95 l/min	160 l/min or (25 cycles/min×2.0 l/stroke)
FFP1	0.6	2.1	3.0
<b>FFP2</b>	<b>0.7</b>	<b>2.4</b>	<b>3.0</b>
FFP3	1.0	3.0	3.0

**Note 10: FFP2 Filtering face mask. Test results are detailed below.**

Specimen	Condition	Inhalation resistance (mbar)		Exhalation resistance (mbar)				
		At 30 l/min	At 95 l/min	Breathing machine (25 cycles/min × 2.0 l/stroke)				
				A	B	C	D	E
-37	A.R.	0.23	0.84	1.99	1.91	1.98	1.90	1.94
-38		0.23	0.84	1.99	2.04	2.01	1.96	1.98
-39		0.24	0.86	1.94	1.90	1.91	1.87	1.89
-63	T.C.	0.22	0.85	1.85	1.84	1.81	1.76	1.79
-64		0.21	0.80	1.94	1.92	1.87	1.89	1.90
-65		0.23	0.86	1.91	2.00	1.96	1.91	1.99
-72	S.W.	0.21	0.82	2.07	2.01	1.98	1.96	1.98
-73		0.23	0.89	1.94	1.94	1.91	1.90	1.96
-74		0.21	0.86	1.95	1.98	1.91	1.91	1.96
	A.R. + F.C.							
	T.C. + F.C.							
<b>Maximum permitted</b>		<b>0.7</b>	<b>2.4</b>	<b>3.0</b>				

A: facing directly ahead; B: facing vertically upwards; C: facing vertically downwards; D: lying on the left side; E: lying on the right side.

## 7.17 Clogging

NRq<sup>11</sup>

### 7.17.2 Breathing resistance

Valved particle filtering half masks:

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.

Valveless particle filtering half masks:

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.

### 7.17.3 Penetration of filter material

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.

**Note 11: Single shift use only.**

## 7.18 Demountable parts

All demountable parts (if fitted) shall be readily connected and secured, where possible by hand.

**Note 12: No demountable parts were used.**

## 9 Marking

NRq

### 9.1 Packaging

The following information shall be clearly and durably marked on the smallest commercially available packaging or legible through it if the packaging is transparent.

9.1.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.1.2 Type-identifying marking.

9.1.3 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.1.4 The number and year of publication of this European Standard.

9.1.5 At least the year of end of shelf life. The end of shelf life may be informed by a pictogram as shown in Figure 12a, where yyyy/mm indicates the year and month.

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.

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.

9.1.8 The packaging of those particle filtering half masks passing the dolomite clogging test shall be additionally marked with the letter "D". This letter shall follow the classification marking preceded by a single space.

### 9.2 Particle filtering half mask

Particle filtering half masks complying with this European Standard shall be clearly and durably marked with the following:

9.2.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.2.2 Type-identifying marking.

9.2.3 The number and year of publication of this European Standard.

9.2.4 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.2.5 If appropriate the letter D (dolomite) in accordance with clogging performance. This letter shall follow the classification marking preceded by a single space (see 9.2.4).

Examples FFP3 NR D, FFP2 R D"

9.2.6 Sub-assemblies and components with considerable bearing on safety shall be marked so that they can be identified

## 10 Information to be supplied by the manufacturer

NRq

- 10.1 Information supplied by the manufacturer shall accompany every smallest commercial available package.
- 10.2 Information supplied by the manufacturer shall be at least in the official language(s) of the country of destination.
- 10.3 The information supplied by the manufacturer shall contain all information necessary for trained and qualified persons on:
- 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.
- 10.4 The information shall be clear and comprehensible. If helpful, illustrations, part numbers, marking shall be added.
- 10.5 Warning shall be given against problems likely to be encountered, for example:
- ☒ fit of particle filtering half mask (check prior to use);
  - ☒ it is unlikely that the requirements for leakage will be achieved if facial hair passes under the face seal;
  - ☒ air quality (contaminants, oxygen deficiency);
  - ☒ use of equipment in explosive atmosphere.
- 10.6 The information shall provide recommendations as to when the particle filtering half mask shall be discarded.
- 10.7 For devices marked "NR", a warning shall be given that the particle filtering half mask shall not be used for more than one shift."

End of Test Report.

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China academy of safety science and technology (CASST) is accredited for compliance with ISO/IEC 17025.

The results of tests, calibrations and/or measurements included in this document are traceable to Chinese/national standards.

CNAS is a signatory to the ILAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

# TEST REPORT

## EN 149:2001+A1:2009

### Filtering half masks to protect against particles

**Report no:** WLH0515-2020  
**Product:** KN95 Protective Mask (Non-Medical)  
**Model (s):** ZN9501  
**Main components:** Mask body, without exhalation valve  
**Date(s) of tests:** 19<sup>th</sup> May ~ 28<sup>th</sup> May 2020

#### Client

Anhui Zhongnan Air Dedence Works Protective Co., Ltd.

Contact: /

Client order: /

Order(s) received: May, 2020

#### Manufacturer

Anhui Zhongnan Air Dedence Works Protective Co., Ltd.

Qianshan Comprehensive Economic Development Zone, Anhui Province, China

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#### Conditions:


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*The results described in this test report refer to the mentioned test samples, exclusively. A copy of the test report, complete or in extracts, is not allowed without any written permission of the CASST.*

*Any objection should be submitted within 2 weeks from the date of receipt of the report, and it will not be accepted after the deadline.*

*Specimens will be disposed of 4 weeks from the date of this report, unless otherwise instructed.*

**Signed:**

  
张明明/Zhang Mingming, Authorized Signatory

**Issued:** 2020-05-28

Page 1 of 10

中国安全生产科学研究院/China Academy of Safety Science and Technology

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Sino-Japanese Cooperative Respiratory Protection Laboratory

Designated Testing Laboratory of the Certification of LA Mark in China

**Summary of assessment\***

Clause		Assessment
<b>Model:</b>		<b>ZN9501</b>
7.4	Packaging	NRq
7.5	Material	NRq
7.6	Cleaning and disinfecting	NAp
7.7	Practical performance	NRq
7.8	Finish of parts	NRq
7.9.1	Total inward leakage	Pass
7.9.2	Penetration of filter material: Sodium chloride	NRq
7.9.2	Penetration of filter material: Paraffin oil	NRq
7.10	Compatibility with skin	NRq
7.11	Flammability	NRq
7.12	Carbon dioxide content of the inhalation air	NRq
7.13	Head harness	NRq
7.14	Field of vision	NRq
7.15	Exhalation valve(s)	NAp
7.16	Breathing resistance	NRq
7.17	Clogging	NRq
7.18	Demountable parts	Pass
9	Marking	NRq
10	Information to be supplied by the manufacturer	NRq

**Key**

	Shading shows the clauses requested.
NRq	The clauses were not requested.
Pass	Requirement satisfied.
Ltd	Testing requested was insufficient completely to verify compliance with the clause. Refer to the "Result details" section for more information.
Fail	Requirement not satisfied. Refer to the "Result details" section for more information.
NAs	Assessment not carried out.
NAp	Requirement not applicable.
NT	Requested but not tested due to early termination following failure.

\* Assessment relates only to those specimens which were tested and are the subject of this report.

**Product characteristics**

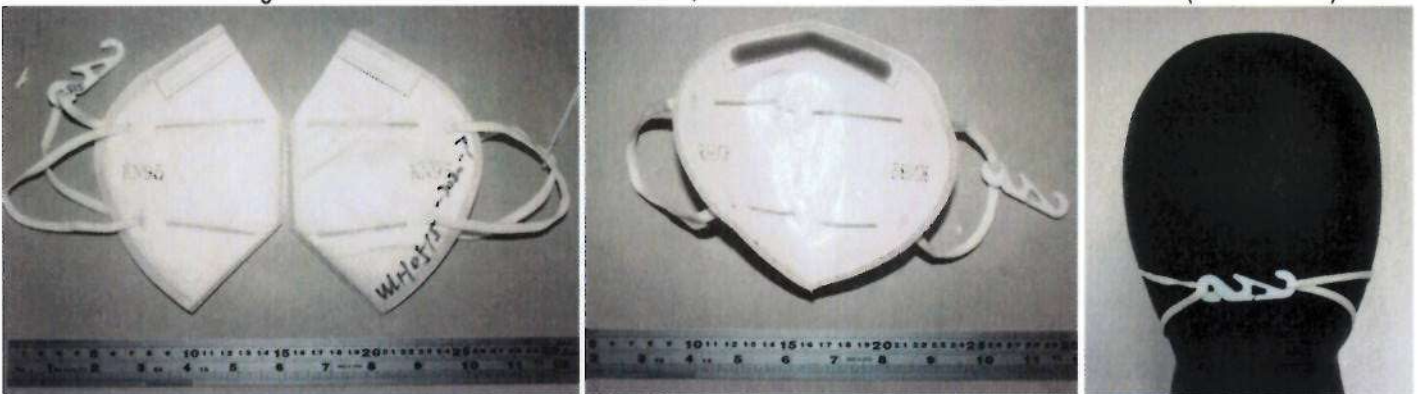
Property	Characteristic
Model	ZN9501
Classification claimed	FFP2 NR
Exhalation valve(s)	-

**Submission details**

Product	Quantity	Date received	Specimen No.
ZN9501 KN95 Protective Mask (Non-Medical)	20	19 <sup>th</sup> May 2020	WLH0515-2020-01 to -20

**Photographs of the products tested**

Anhui Zhongnan Air Dedence Works Protective Co., Ltd.'s model ZN9501 KN95 Protective Mask (Non-Medical)



CASST specimen number WLH0515-2020-07

**Procedures**

Specimens were selected at random from the submission(s) detailed above.

Testing was performed in accordance with EN 149:2001 incorporating Corrigendum No. 1 (January 2003), and amendment A1 (2009) unless otherwise specified below. Reference should be made to the standard when reading this report.

Unless stated otherwise, specimens were tested in the condition as received.

**Result details****7.4 Packaging****NRq**

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.

**7.5 Material****NRq**

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.

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.

**7.6 Cleaning and disinfecting****NAp<sup>1</sup>**

If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer.

With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.

**Note 1: Single shift use only.**

**7.7 Practical performance****NRq**

The particle filtering half mask shall undergo practical performance tests under realistic conditions.

**Specimen and subject details:**

<b>Specimen</b>	<b>Subject</b>
-	-
-	-

**7.8 Finish of parts****NRq**

Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.

**7.9.1 Total inward leakage (%)****Pass<sup>2</sup>**

For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25 % for FFP1, 11 % for FFP2, 5 % for FFP3;

and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22 % for FFP1, 8 % for FFP2, 2 % for FFP3.

**Note 2: All 50 individual exercise results were not greater than 11%; All 10 individual wearer arithmetic means were not greater than 8%. Detailed data are showed below.**

Subject	Specimen	Cond	Walk	Head side/ side	Head up/down	Talk	Walk	Mean
LCF	-01	AR	10.7	9.2	5.5	3.6	5.1	6.8
SM	-02	AR	3.4	6.0	9.4	5.6	3.3	5.5
LZM	-03	AR	5.1	6.2	7.6	7.9	5.3	6.4
YZF	-04	AR	2.6	6.8	8.1	8.0	3.8	5.9
GJB	-05	AR	2.5	6.4	7.3	4.3	3.8	4.9
ZH	-06	TC	6.0	7.2	8.6	9.3	6.3	7.5
YB	-07	TC	6.8	8.2	9.8	10.5	4.1	7.9
JLX	-08	TC	4.4	5.4	9.3	6.9	4.7	6.1
TLX	-09	TC	2.9	5.2	8.3	4.9	4.4	5.1
TS	-10	TC	3.0	7.8	4.6	9.2	4.3	5.8
<b>Maximum permitted</b>			<b>11</b>					<b>8</b>

**Subject facial dimensions:**

Subject	Face Length (mm)	Face Width (mm)	Face Depth (mm)	Mouth Width (mm)
SM	116	144	109	49
TLX	104	153	112	40
YZF	113	151	106	48
TS	97	146	102	51
JLX	119	152	109	59
LCF	119	165	121	56
ZH	102	152	113	55
GJB	109	154	109	57
YB	112	150	119	66
LZM	118	157	124	44

## 7.9.2 Penetration of filter material

NRq

The penetration of the filter of the particle filtering half mask shall meet the requirements:

Classification	Maximum penetration of test aerosol	
	Sodium chloride test 95 l/min, %, Max	Paraffin oil test 95 l/min, %, Max
FFP1	20	20
<b>FFP2</b>	<b>6</b>	<b>6</b>
FFP3	1	1

## Sodium chloride test results: (NRq)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-	A.R.	-	
-		-	
-		-	
-	S.W.	-	
-		-	
-		-	
-	M.S. + T.C.	-	-
-		-	-
-		-	-
<b>Maximum permitted</b>		<b>6</b>	

## Paraffin oil test results: (NRq)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-	A.R.	-	
-		-	
-		-	
-	S.W.	-	
-		-	
-		-	
-	M.S. + T.C.	-	-
-		-	-
-		-	-
<b>Maximum permitted</b>		<b>6</b>	

**7.10 Compatibility with skin**

NRq

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.

**7.11 Flammability**

NRq

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.

Specimen	Condition	Results
-	A.R.	-
-		-
-	T.C.	-
-		-

**7.12 Carbon dioxide content of the inhalation air**

NRq

The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume).

Specimen	CO <sub>2</sub> (%)
-	-
-	-
-	-
<b>Maximum permitted</b>	<b>1.0</b>

**7.13 Head harness**

NRq

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.

**7.14 Field of vision**

NRq

The field of vision is acceptable if determined so in practical performance tests.

**7.15 Exhalation valve****NAp**

A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations.

If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.

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.

When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s.

**7.16 Breathing resistance****NRq**

Classification	Maximum permitted resistance (mbar)		
	inhalation		exhalation
	30 l/min	95 l/min	160 l/min or (25 cycles/min×2.0 l/stroke)
FFP1	0.6	2.1	3.0
<b>FFP2</b>	<b>0.7</b>	<b>2.4</b>	<b>3.0</b>
FFP3	1.0	3.0	3.0



Specimen	Condition	Inhalation resistance (mbar)		Exhalation resistance (mbar)				
		At 30 l/min	At 95 l/min	Breathing machine (25 cycles/min × 2.0 l/stroke)				
				A	B	C	D	E
-	A.R.	-	-	-	-	-	-	-
-		-	-	-	-	-	-	
-		-	-	-	-	-	-	
-	T.C.	-	-	-	-	-	-	-
-		-	-	-	-	-	-	
-		-	-	-	-	-	-	
-	S.W.	-	-	-	-	-	-	-
-		-	-	-	-	-	-	
-		-	-	-	-	-	-	
	A.R. + F.C.							
	T.C. + F.C.							
<b>Maximum permitted</b>		<b>0.7</b>	<b>2.4</b>	<b>3.0</b>				

A: facing directly ahead; B: facing vertically upwards; C: facing vertically downwards; D: lying on the left side; E: lying on the right side.

**7.17 Clogging**

NAP<sup>3</sup>

**7.17.2 Breathing resistance**

Valved particle filtering half masks:

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.

Valveless particle filtering half masks:

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.

**7.17.3 Penetration of filter material**

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.

**Note 3: Single shift use only.**

## 7.18 Demountable parts

Pass<sup>4</sup>

All demountable parts (if fitted) shall be readily connected and secured, where possible by hand.

**Note 4: Head harness auxiliary hook were used, and in accordance with the requirement.**

## 9 Marking

NRq

### 9.1 Packaging

The following information shall be clearly and durably marked on the smallest commercially available packaging or legible through it if the packaging is transparent.

9.1.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.1.2 Type-identifying marking.

9.1.3 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.1.4 The number and year of publication of this European Standard.

9.1.5 At least the year of end of shelf life. The end of shelf life may be informed by a pictogram as shown in Figure 12a, where yyyy/mm indicates the year and month.

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.

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.

9.1.8 The packaging of those particle filtering half masks passing the dolomite clogging test shall be additionally marked with the letter "D". This letter shall follow the classification marking preceded by a single space.

### 9.2 Particle filtering half mask

Particle filtering half masks complying with this European Standard shall be clearly and durably marked with the following:

9.2.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.2.2 Type-identifying marking.

9.2.3 The number and year of publication of this European Standard.

9.2.4 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.2.5 If appropriate the letter D (dolomite) in accordance with clogging performance. This letter shall follow the classification marking preceded by a single space (see 9.2.4).

Examples FFP3 NR D, FFP2 R D"

9.2.6 Sub-assemblies and components with considerable bearing on safety shall be marked so that they can be identified

**10 Information to be supplied by the manufacturer**

**NRq**

- 10.1 Information supplied by the manufacturer shall accompany every smallest commercial available package.
- 10.2 Information supplied by the manufacturer shall be at least in the official language(s) of the country of destination.
  
- 10.3 The information supplied by the manufacturer shall contain all information necessary for trained and qualified persons on:
  - 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.
- 10.4 The information shall be clear and comprehensible. If helpful, illustrations, part numbers, marking shall be added.
- 10.5 Warning shall be given against problems likely to be encountered, for example:
  - fit of particle filtering half mask (check prior to use);
  - it is unlikely that the requirements for leakage will be achieved if facial hair passes under the face seal;
  - air quality (contaminants, oxygen deficiency);
  - use of equipment in explosive atmosphere.
- 10.6 The information shall provide recommendations as to when the particle filtering half mask shall be discarded.
- 10.7 For devices marked "NR", a warning shall be given that the particle filtering half mask shall not be used for more than one shift."

End of Test Report.



**MASCARILLA AUTOFILTRANTE FFP2**  
**Referencia del importador: 6751 Mascarilla Autofiltrante FFP2 Tensil** **CE 2834**  
**Referencia del fabricante: ZN9501 FFP2 NR**

Mascarilla Autofiltrante FFP2 no reutilizable según EN 149:2001+A1:2009.

**EQUIPO DE PROTECCIÓN INDIVIDUAL.**

Este producto ha sido fabricado siguiendo las exigencias del Reglamento (UE) 2016/425 para su uso básico.

Siga las instrucciones de uso y tenga en cuenta estas advertencias. En caso contrario, la efectividad de la mascarilla durante su exposición se vería reducida, lo que puede provocar un riesgo serio para su salud.

El usuario debe asegurarse de que sabe cómo usar y colocarse la mascarilla previamente. Asegúrese de que la mascarilla se encuentra en buenas condiciones antes de usarla: no está sucia, dañada, algún arnés se encuentra suelto, etc.

**Limitaciones:**

Asegúrese de no usar la mascarilla en estas condiciones:

- En una atmósfera que contenga menos del 19.5% de oxígeno.
- Si huele o saborea el contaminante.
- Si pretende protección contra gases o vapores.
- Si los contaminantes o sus concentraciones son desconocidos o inmediatamente peligrosos para la vida o la salud.
- En operaciones de arenado, pintura en spray o tratamientos con asbestos.
- En atmósferas explosivas.

**Advertencias:**

- El marcado NR sobre esta mascarilla significa que no es reutilizable, deséchala tras su uso.
- No sustituya, modifique, añada u omita componentes de la mascarilla original.
- Esta mascarilla ayuda a la protección contra ciertas partículas contaminantes, pero no elimina completamente la exposición al riesgo de contraer enfermedades o infecciones.
- Es poco probable que se alcancen los requisitos de hermeticidad si, bajo el sello facial, pasan vellos faciales.
- Cambie la mascarilla de forma inmediata si siente dificultad respiratoria o si la mascarilla se daña o se deforma.
- Cambie la mascarilla si no consigue un correcto ajuste facial.
- Cambie la mascarilla si se la quita en áreas contaminadas.

**Instrucciones de colocación:**

1. Colóquese la mascarilla en la cara en la posición correcta cubriendo nariz y boca.
2. Lleve los arneses laterales de sujeción tras las orejas, sujete los arneses con el clip adicional para mejorar la comodidad y evitar fugas.
3. Pellizque la pinza nasal para moldearla a su nariz. Asegúrese de que sus extremos apoyan contra las mejillas para obtener un buen sellado.
4. Para comprobar que el ajuste es correcto, coloque ambas manos sobre la mascarilla y exhale vigorosamente. Si el aire se filtra por el borde, reajuste la pinza hasta un sellado apropiado. Si el aire sale alrededor del borde, recolóque los arneses para un mejor ajuste.
5. Repita los pasos de ajuste hasta que la mascarilla esté sellada correctamente.
6. Si no consigue un ajuste apropiado, no se exponga a un ambiente contaminado, ya que existe riesgo para su salud.



**Almacenamiento:**

La mascarilla no debería sacarse de la bolsa hasta su uso y debe desecharse tras su uso.

Organismo Notificado: CCQS Certification Services Limited, Block 1 Blanchardstown Corporate Park, Ballycoolin Road, Blanchardstown, Dublin 15, D15 AKK1, Irlanda (ON 2834).

Declaración de conformidad: Está disponible en [www.makito.es](http://www.makito.es) (consulte por referencia).

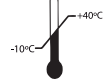
Fabricado por: Anhui Zhongnan Air Defence Works Protective Co., Ltd.  
 Qinshan Comprehensive Economic Development Zone, Anhui Province, China.  
 Marca: Zhongnan  
 Lote: V0110



Véase la información suministrada por el fabricante/importador.



2023/10 Caducidad



Rango de temperatura de almacenamiento



Máxima humedad relativa para almacenamiento < 80%

Importado por: Mkto Catal Importaciones S.L.  
 Ctra. Huércal-Overa S/N 04640 Pulpi, Almería, España

Fabricado en: China

**FFP2 AUTO FILTERING MASK**  
**Importer's model: 6751 FFP2 Auto filtering mask Tensil** **CE 2834**  
**Manufacturer's model: ZN9501 FFP2 NR**

Non-reusable FFP2 filtering mask according to EN 149:2001+A1:2009.

**PERSONAL PROTECTIVE EQUIPMENT.**

This item has been manufactured following the requirements of Regulation (EU) 2016/425 for basic use.

Failure to follow the instructions and warnings on the use of this mask during all times of exposure can reduce the effectiveness of the mask and could result in illness or disability.

As with any respiratory device, the wearer must be adequately trained prior to use. Before use, the wearer should always check the mask is in good condition- no dirt, no damage to headharness attachment, etc.

**Limitation:**

Do not use the respirator or enter or stay in a contaminated area under the following circumstances:

- Atmosphere contains less than 19.5% oxygen.
- If you smell or taste contaminant.
- For protection against gases or vapors.
- Contaminants or their concentrations are unknown or immediately dangerous to life or health.
- For sandblasting, paint-spray operations and asbestos treatment.
- In explosive atmospheres.

**Warnings:**

- This mask marked "NR", shall not be used for more than one shift.
- Never substitute, modify, add or omit parts in the configuration as specified by the manufacturer.
- This mask helps protect against certain particle contaminants but does not completely eliminate exposure to the risk of contracting disease or infection.
- It is unlikely that the requirements for leakage will be achieved if facial hair passes under the face seal.
- Change the mask immediately if breathing becomes difficult or the mask becomes damaged or distorted.
- Change the mask if a proper face seal cannot be achieved.
- Change the mask if it is removed while in the contaminated areas.

**Fitting instructions:**

1. Hold the particle filtering half mask in position over the nose and mouth.
2. Pull the headharness behind to ears, attach the headharness to the retaining clip, improve comfort and prevent leakage.
3. Ensure the nose clip is securely moulded around the nose, resting the ends against the cheek to obtain a good seal.
4. To check a proper fit, cup both hands over the mask and exhale vigorously. If air leaks around the nose, tighten the nose clip, if air leaks around the edge, reposition the headharness for better fit.
5. Repeat adjustments until the mask is sealed properly.
6. If a proper seal cannot be achieved, do not enter the contaminated area or it may cause illness.



**Storage:**

The mask should not be removed from its package unless it is required and should be discarded after use.

Notified Body: CCQS Certification Services Limited, Block 1 Blanchardstown Corporate Park, Ballycoolin Road, Blanchardstown, Dublin 15, D15 AKK1, Ireland (NB 2834).

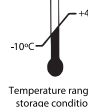
Declaration of conformity: It is available at: [www.makito.eu](http://www.makito.eu) (search for item number).



See information supplied by the manufacturer/importer.



2023/10 End of shelf life



Temperature range of storage conditions



Maximum relative humidity of storage conditions < 80%

Manufactured by: Anhui Zhongnan Air Defence Works Protective Co., Ltd.  
 Qinshan Comprehensive Economic Development Zone, Anhui Province, China.  
 Trade mark: Zhongnan  
 Batch: V0110

Imported by: Mkto Catal Importaciones S.L.  
 Ctra. Huércal-Overa S/N 04640 Pulpi, Almería, Spain

Made in: China



## Module B EU Type-Examination Certificate

For the requirements of PPE Regulation 2016/425

Certificate No.: CE-PC-200530-449-01-9B

<b>Certificate holder:</b>	<b>Anhui Zhongnan Air Defence Works Protective Co., Ltd.</b> Qianshan Comprehensive Economic Development Zone, Anhui Province, China
<b>Product:</b>	<b>Particle filtering half mask</b> Detailed product description listed in the Annex
<b>Model(s):</b>	ZN9501
<b>Standard(s):</b>	EN 149:2001+A1:2009 Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking
<b>Issue date:</b>	2020-06-15
<b>Revision date:</b>	2020-09-14
<b>Expiry date:</b>	2021-06-14

The product(s) on this certificate and the Technical File have been assessed and found to be in conformance with the applicable Essential Health and Safety Requirements in Annex II of the PPE regulation 2016/425.

Any changes to the design, manufacturing location or manufacture of the PPE product certified here must be advised to CCQS Certification Services Limited for review.

CE marking shall not be applied until the requirements of all the PPE Regulation 2016/425 and relevant EN Harmonised standards and/or Technical specifications have been met.

If the certified product is Category III then this certificate is only valid if used in conjunction with Conformity Assessment against Module C2 or Module D.

This certificate remains the property of CCQS and maybe withdrawn at any time if it is considered that the equipment is no longer in conformity with the requirements of the PPE Regulation 2016/425.



Approved by Ireland  
Government  
as a Notified Body  
for CE Marking No.2834



### CCQS Certification Services Limited

Block 1 Blanchardstown Corporate Park, Ballycoolin Road, Blanchardstown, Dublin15,  
D15 AKK1, Ireland

Tel: +00 353 1 588 6920 Website: [www.ccqs.co.uk](http://www.ccqs.co.uk) E-mail: [verify@ccqs.ie](mailto:verify@ccqs.ie)

If in any doubt about the integrity of this certificate, please contact CCQS by email to verify.



# Module B EU Type-Examination Certificate

## Annex

For the requirements of PPE Regulation 2016/425

Certificate No.: CE-PC-200530-449-01-9B

**Applicable standards and specification:**

EN 149:2001+A1:2009 Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking

Model reference	Product description
ZN9501	Folding filtering half mask fitted with ear loops with head harness clip, no valves, internal metal nose clip Mask body color: White, Black, Gray, Blue, Pink Classification: FFP2 NR Test report No.: WLH0241-2020, WLH0515-2020

Certificate Revision	Revision date	Revision details
A	2020-06-15	Initial issue
B	2020-09-14	Certificate validity extended to one year



**CCQS Certification Services Limited**

Block 1 Blanchardstown Corporate Park, Ballycoolin Road, Blanchardstown, Dublin15, D15 AKK1, Ireland

Tel: +00 353 1 588 6920 Website: [www.ccqs.co.uk](http://www.ccqs.co.uk) E-mail: [verify@ccqs.ie](mailto:verify@ccqs.ie)

If in any doubt about the integrity of this certificate, please contact CCQS by email to verify.



# Certificate of Module C2 production monitoring for equipment within the scope of Personal Protective Equipment Regulation (EU) 2016/425 Category III

FPC Certificate No.: CE-PC-200530-449-FPC-B

<b>Certificate holder:</b>	<b>Anhui Zhongnan Air Defence Works Protective Co., Ltd.</b> Qianshan Comprehensive Economic Development Zone, Anhui Province, China
<b>Manufacturing Location:</b>	Qianshan Comprehensive Economic Development Zone, Anhui Province, China
<b>The scope of the certification for:</b>	<b>The manufacture of respiratory protective device</b> See annex for articles covered by this certificate
<b>Validity from:</b>	2020-06-15
<b>Revision date:</b>	2020-09-14
<b>To:</b>	2021-06-14

CCQS Certification Services Limited in its role as a Notified Body for PPE Regulation, is monitoring that the manufacturer is producing PPE in conformity with the type described in the EU type-examination certificate and associated technical file and which satisfies the Essential Health and Safety Requirements of the Regulation. The equipment covered by this certificate is listed in the accompanying schedule. This certificate is not complete and has no validity without the accompanying schedule and revision index. The manufacturer is hereby authorized to affix our Notified Body number, 2834, to each item of PPE mentioned in the schedule which accompanies this certificate whilst this certificate remains valid. This certificate and the accompanying schedule remain the property of CCQS and maybe withdrawn or revised at any time if CCQS considers that the equipment is no longer in conformity with the requirements of the Regulation.



Approved by Ireland  
Government  
as a Notified Body  
for CE Marking No.2834



## CCQS Certification Services Limited

Block 1 Blanchardstown Corporate Park, Ballycoolin Road, Blanchardstown, Dublin15,  
D15 AKK1, Ireland

Tel: +00 353 1 588 6920 Website: [www.ccqs.co.uk](http://www.ccqs.co.uk) E-mail: [verify@ccqs.ie](mailto:verify@ccqs.ie)

If in any doubt about the integrity of this certificate, please contact CCQS by email to verify.



## Schedule of Module C2 production monitoring for equipment within the scope of Personal Protective Equipment Regulation (EU) 2016/425 Category III

Schedule to CCQS FPC Certificate No.: CE-PC-200530-449-FPC-B

Product reference and description		Reference standard
Particle Filtering Half Mask	Model: ZN9501	EN 149:2001+A1:2009

Certificate Revision	Revision date	Revision details
A	2020-06-15	Initial issue
B	2020-09-14	Certificate validity extended to one year

This schedule has no validity without the accompanying certificate.

This schedule and the accompanying certificate remain the property of CCQS and maybe withdrawn or revised at any time if CCQS considers that the equipment is no longer in conformity with the requirements of the Regulation.



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**EU Declaration of Conformity**  
**Annex IX PPE Regulation (EU) 2016/425**

This EU Declaration of conformity refers to the following products:

1. Product info

Name: Particle filtering half mask

Model: ZN9501

Classification: FFP2

Serial No.: ---

2. The Manufacturer's name and address is as follows:

Name: Anhui Zhongnan Air Defence Works Protective Co., Ltd.

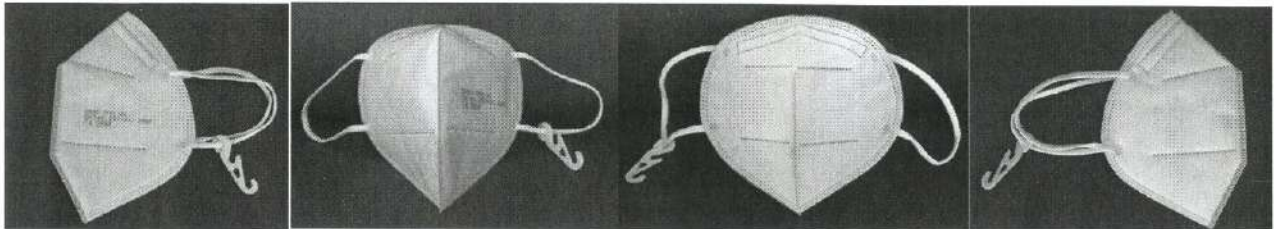
Address: Qianshan Comprehensive Economic Development Zone, Anhui Province, China

3. This Declaration of Conformity is issued under the sole responsibility of the Manufacturer.

4. Detailed description of the PPE to allow traceability/identification of the PPE.

ZN9501

Folding particle filtering half mask without valve (Color: white,black,gray,pink,bule) , internal metal nose clip,the following shows only white samples



The article identified in (4) above is in conformance with the relevant Union Harmonization Legislation Regulation (EU) 2016/425.

References to the relevant harmonized standards used, including the date of the standard, or references to the other technical specifications, including the date of the specification, in relation to which conformity is declared:

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

CCQS Certification Services Limited. (NB 2834) performed the EU Type Examination (Module B) and issued the Type Examination Certificate Number: Module B

No.	EU Type Examination (Module B) Certificate Number
1	CE-PC-200530-449-01-9B

Product Category:

This product is Category III and is subject to Module C2 internal production control plus supervised product checks at random intervals and is under the surveillance of CCQS Certification Services Limited. (NB 2834)

This product is Category III and is subject to Module D Conformity to type based on quality assurance of the production process and is under the surveillance of CCQS Certification Services Limited. (NB 2834)

Signature: Bin Ge

Date: 2020-9-4

Company stamp and/or legal signature





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The results of tests, calibrations and/or measurements included in this document are traceable to Chinese/national standards.

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# TEST REPORT

EN 149:2001+A1:2009

Filtering half masks to protect against particles

**Report no:** WLH0241-2020  
**Product:** KN95 Protective Mask (Non-Medical)  
**Model (s):** ZN9501  
**Main components:** Mask body, without exhalation valve  
**Date(s) of tests:** 18<sup>th</sup> Apr~8<sup>th</sup> May 2020

<p><b>Client</b></p> <p>Anhui Zhongnan Air Dedence Works Protective Co., Ltd.</p> <p>Client order: / Order(s) received: Apr, 2020</p>	<p><b>Manufacturer</b></p> <p>Anhui Zhongnan Air Dedence Works Protective Co., Ltd.</p> <p>Qianshan Comprehensive Economic Development Zone, Anhui Province, China</p> <p>Contact: Mr. Chu E-mail: / Phone: +8618956915566</p>
---	--

**Conditions:**

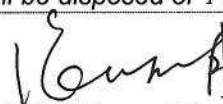
*This report shall not be reproduced except in full, without the written approval of CASST.*

*The results described in this test report refer to the mentioned test samples, exclusively. A copy of the test report, complete or in extracts, is not allowed without any written permission of the CASST.*

*Any objection should be submitted within 2 weeks from the date of receipt of the report, and it will not be accepted after the deadline.*

*Specimens will be disposed of 4 weeks from the date of this report, unless otherwise instructed.*

**Signed:**

  
张明明/Zhang Mingming, Authorized Signatory

**Issued:** 2020-05-09



**Summary of assessment\***

Clause		Assessment
	<b>Model:</b>	<b>ZN9501</b>
7.4	Packaging	Pass
7.5	Material	Pass
7.6	Cleaning and disinfecting	NAp
7.7	Practical performance	Pass
7.8	Finish of parts	Pass
7.9.1	Total inward leakage	Pass
7.9.2	Penetration of filter material: Sodium chloride	Pass
7.9.2	Penetration of filter material: Paraffin oil	Pass
7.10	Compatibility with skin	Pass
7.11	Flammability	Pass
7.12	Carbon dioxide content of the inhalation air	Pass
7.13	Head harness	Pass
7.14	Field of vision	Pass
7.15	Exhalation valve(s)	NAp
7.16	Breathing resistance	Pass
7.17	Clogging	NRq
7.18	Demountable parts	NAp
9	Marking	NRq
10	Information to be supplied by the manufacturer	NRq

**Key**

	Shading shows the clauses requested.
NRq	The clauses were not requested.
Pass	Requirement satisfied.
Ltd	Testing requested was insufficient completely to verify compliance with the clause. Refer to the "Result details" section for more information.
Fail	Requirement not satisfied. Refer to the "Result details" section for more information.
NAs	Assessment not carried out.
NAp	Requirement not applicable.
NT	Requested but not tested due to early termination following failure.

\* Assessment relates only to those specimens which were tested and are the subject of this report.

**Product characteristics**

Property	Characteristic
Model	ZN9501
Classification claimed	FFP2 NR
Exhalation valve(s)	-

**Submission details**

Product	Quantity	Date received	Specimen No.
ZN9501 KN95 Protective Mask (Non-Medical)	86	18 <sup>th</sup> April 2020	WLH0241-2020-01 to -86

**Photographs of the products tested**

Anhui Zhongnan Air Dedence Works Protective Co., Ltd.'s model ZN9501 KN95 Protective Mask (Non-Medical)



CASST specimen number WLH0241-2020-09

**Procedures**

Specimens were selected at random from the submission(s) detailed above.

Testing was performed in accordance with EN 149:2001 incorporating Corrigendum No. 1 (January 2003), and amendment A1 (2009) unless otherwise specified below. Reference should be made to the standard when reading this report.

Unless stated otherwise, specimens were tested in the condition as received.

**Result details****7.4 Packaging****Pass<sup>1</sup>**

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.

**Note 1: In accordance with the requirement.**

**7.5 Material****Pass<sup>2</sup>**

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.

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.

**Note 2: In accordance with the requirement.**

**Specimens -03, -04, -05 were conditioned in accordance with 8.3.1, None of the specimens conditioned suffered mechanical failure or collapse.**

**Specimens -06, -07, -08 were conditioned in accordance with 8.3.2, None of the specimens conditioned suffered collapse.**

**7.6 Cleaning and disinfecting****NAp<sup>3</sup>**

If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer.

With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.

**Note 3: Single shift use only.**

**7.7 Practical performance****Pass<sup>4</sup>**

The particle filtering half mask shall undergo practical performance tests under realistic conditions.

**Note 4: No imperfections.**

**Specimen and subject details:**

Specimen	Subject
-01	TJ
-02	SM

**7.8 Finish of parts****Pass<sup>5</sup>**

Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.

**Note 5: None of the specimens used in limited laboratory testing undertaken showed the evidence of sharp edges or burrs.**

**7.9.1 Total inward leakage (%)****Pass<sup>6</sup>**

For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25 % for FFP1, **11 % for FFP2**, 5 % for FFP3;

and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22 % for FFP1, **8 % for FFP2**, 2 % for FFP3.

**Note 6: 47 out of the 50 individual exercise results were not greater than 11%; 8 out of the 10 individual wearer arithmetic means were not greater than 8%. Detailed data are showed below..**

Subject	Specimen	Cond	Walk	Head side/ side	Head up/down	Talk	Walk	Mean
TS	-11	AR	4.9	12.1	8.3	7.5	5.9	7.7
ZMM	-12	AR	4.8	6.1	5.4	5.9	3.8	5.2
YZF	-13	AR	7.2	7.8	7.4	8.3	7.5	7.6
LCF	-14	AR	5.4	9.9	6.2	6.4	5.6	6.7
NXL	-15	AR	4.4	8.2	5.0	5.3	4.6	5.5
TJ	-40	TC	7.7	7.8	9.5	6.8	7.3	7.8
SM	-41	TC	6.5	10.9	10.3	6.8	7.5	8.4
WCS	-42	TC	4.3	5.5	4.8	5.3	3.4	4.6
YB	-43	TC	4.1	7.0	10.8	6.1	3.6	6.3
GJB	-44	TC	8.0	13.4	12.6	8.3	9.2	10.3
Maximum permitted			11					8

**Subject facial dimensions:**

Subject	Face Length (mm)	Face Width (mm)	Face Depth (mm)	Mouth Width (mm)
ZMM	114	157	119	50
WCS	109	136	105	56
YZF	113	151	106	48
TS	97	146	102	51
TJ	105	151	110	52
SM	116	144	109	49
LCF	119	165	121	56
YB	112	150	119	66
NXL	113	147	108	53
GJB	109	154	109	57

## 7.9.2 Penetration of filter material

Pass

The penetration of the filter of the particle filtering half mask shall meet the requirements:

Classification	Maximum penetration of test aerosol	
	Sodium chloride test 95 l/min, %, Max	Paraffin oil test 95 l/min, %, Max
FFP1	20	20
<b>FFP2</b>	<b>6</b>	<b>6</b>
FFP3	1	1

## Sodium chloride test results: (Pass)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-16	A.R.	0.59	
-17		0.17	
-18		1.62	
-66	S.W.	1.89	
-67		1.11	
-68		1.34	
-45	M.S. + T.C.	3.96	4.88
-46		2.99	3.16
-47		2.91	4.28
<b>Maximum permitted</b>		<b>6</b>	

## Paraffin oil test results: (Pass)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-19	A.R.	0.73	
-20		0.66	
-21		1.36	
-69	S.W.	0.79	
-70		0.71	
-71		0.91	
-48	M.S. + T.C.	3.87	5.82
-49		2.64	4.93
-50		1.66	4.01
<b>Maximum permitted</b>		<b>6</b>	

**7.10 Compatibility with skin****Pass<sup>7</sup>**

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.

**Note 7: Specimens from -22 to -26 (A.R.) and from -51 to -55 (T.C.) were tested. No irritation or any other adverse effect to health.**

**7.11 Flammability****Pass**

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.

Specimen	Condition	Results
-27	A.R.	burn for 0.5 s
-28		burn for 0.8 s
-56	T.C.	burn for 0.5 s
-57		burn for 0.4 s

**7.12 Carbon dioxide content of the inhalation air****Pass**

The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume).

Specimen	CO <sub>2</sub> (%)
-29	0.37
-30	0.41
-31	0.36
<b>Maximum permitted</b>	<b>1.0</b>

**7.13 Head harness****Pass<sup>8</sup>**

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.

**Note 8: Specimens from -32 to -36 (A.R.) and from -58 to -62 (T.C.) were tested. Head harness can be donned and removed easily, adjustable or self-adjusting and have sufficiently robust to hold the face mask firmly. The product satisfied the total inward leakage requirements. See 7.9.1 for results.**

**7.14 Field of vision****Pass<sup>9</sup>**

The field of vision is acceptable if determined so in practical performance tests.

**Note 9: Specimens from -09 and -10 (A.R.) were tested. Pass the practical performance tests and no adverse comments.**



**7.15 Exhalation valve****NAP**

A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations.

If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.

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.

When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s.

**7.16 Breathing resistance****Pass<sup>10</sup>**

Classification	Maximum permitted resistance (mbar)		
	inhalation		exhalation
	30 l/min	95 l/min	160 l/min or (25 cycles/min×2.0 l/stroke)
FFP1	0.6	2.1	3.0
<b>FFP2</b>	<b>0.7</b>	<b>2.4</b>	<b>3.0</b>
FFP3	1.0	3.0	3.0

**Note 10: FFP2 Filtering face mask. Test results are detailed below.**

Specimen	Condition	Inhalation resistance (mbar)		Exhalation resistance (mbar)				
		At 30 l/min	At 95 l/min	Breathing machine (25 cycles/min × 2.0 l/stroke)				
				A	B	C	D	E
-37	A.R.	0.23	0.84	1.99	1.91	1.98	1.90	1.94
-38		0.23	0.84	1.99	2.04	2.01	1.96	1.98
-39		0.24	0.86	1.94	1.90	1.91	1.87	1.89
-63	T.C.	0.22	0.85	1.85	1.84	1.81	1.76	1.79
-64		0.21	0.80	1.94	1.92	1.87	1.89	1.90
-65		0.23	0.86	1.91	2.00	1.96	1.91	1.99
-72	S.W.	0.21	0.82	2.07	2.01	1.98	1.96	1.98
-73		0.23	0.89	1.94	1.94	1.91	1.90	1.96
-74		0.21	0.86	1.95	1.98	1.91	1.91	1.96
	A.R. + F.C.							
	T.C. + F.C.							
<b>Maximum permitted</b>		<b>0.7</b>	<b>2.4</b>	<b>3.0</b>				

A: facing directly ahead; B: facing vertically upwards; C: facing vertically downwards; D: lying on the left side; E: lying on the right side.

## 7.17 Clogging

NRq<sup>11</sup>

### 7.17.2 Breathing resistance

Valved particle filtering half masks:

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.

Valveless particle filtering half masks:

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.

### 7.17.3 Penetration of filter material

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.

**Note 11: Single shift use only.**

## 7.18 Demountable parts

All demountable parts (if fitted) shall be readily connected and secured, where possible by hand.

**Note 12: No demountable parts were used.**

## 9 Marking

NRq

### 9.1 Packaging

The following information shall be clearly and durably marked on the smallest commercially available packaging or legible through it if the packaging is transparent.

9.1.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.1.2 Type-identifying marking.

9.1.3 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.1.4 The number and year of publication of this European Standard.

9.1.5 At least the year of end of shelf life. The end of shelf life may be informed by a pictogram as shown in Figure 12a, where yyyy/mm indicates the year and month.

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.

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.

9.1.8 The packaging of those particle filtering half masks passing the dolomite clogging test shall be additionally marked with the letter "D". This letter shall follow the classification marking preceded by a single space.

### 9.2 Particle filtering half mask

Particle filtering half masks complying with this European Standard shall be clearly and durably marked with the following:

9.2.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.2.2 Type-identifying marking.

9.2.3 The number and year of publication of this European Standard.

9.2.4 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.2.5 If appropriate the letter D (dolomite) in accordance with clogging performance. This letter shall follow the classification marking preceded by a single space (see 9.2.4).

Examples FFP3 NR D, FFP2 R D"

9.2.6 Sub-assemblies and components with considerable bearing on safety shall be marked so that they can be identified

## 10 Information to be supplied by the manufacturer

NRq

- 10.1 Information supplied by the manufacturer shall accompany every smallest commercial available package.
- 10.2 Information supplied by the manufacturer shall be at least in the official language(s) of the country of destination.
- 10.3 The information supplied by the manufacturer shall contain all information necessary for trained and qualified persons on:
- 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.
- 10.4 The information shall be clear and comprehensible. If helpful, illustrations, part numbers, marking shall be added.
- 10.5 Warning shall be given against problems likely to be encountered, for example:
- ☒ fit of particle filtering half mask (check prior to use);
  - ☒ it is unlikely that the requirements for leakage will be achieved if facial hair passes under the face seal;
  - ☒ air quality (contaminants, oxygen deficiency);
  - ☒ use of equipment in explosive atmosphere.
- 10.6 The information shall provide recommendations as to when the particle filtering half mask shall be discarded.
- 10.7 For devices marked "NR", a warning shall be given that the particle filtering half mask shall not be used for more than one shift."

End of Test Report.

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The results of tests, calibrations and/or measurements included in this document are traceable to Chinese/national standards.

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# TEST REPORT

## EN 149:2001+A1:2009

### Filtering half masks to protect against particles

**Report no:** WLH0515-2020  
**Product:** KN95 Protective Mask (Non-Medical)  
**Model (s):** ZN9501  
**Main components:** Mask body, without exhalation valve  
**Date(s) of tests:** 19<sup>th</sup> May ~ 28<sup>th</sup> May 2020

<p><b>Client</b>  <b>Anhui Zhongnan Air Dedence Works Protective Co., Ltd.</b></p> <p>Contact: /  Client order: /  Order(s) received: May, 2020</p>	<p><b>Manufacturer</b>  <b>Anhui Zhongnan Air Dedence Works Protective Co., Ltd.</b></p> <p>Qianshan Comprehensive Economic Development Zone, Anhui Province, China  Contact: Mr. Chu  E-mail: /  Phone: +8618956915566</p>
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*The results described in this test report refer to the mentioned test samples, exclusively. A copy of the test report, complete or in extracts, is not allowed without any written permission of the CASST.*

*Any objection should be submitted within 2 weeks from the date of receipt of the report, and it will not be accepted after the deadline.*

*Specimens will be disposed of 4 weeks from the date of this report, unless otherwise instructed.*

**Signed:**

张明明/Zhang Mingming, Authorized Signatory

**Issued:** 2020-05-28

Page 1 of 10

**Summary of assessment\***

Clause		Assessment
<b>Model:</b>		<b>ZN9501</b>
7.4	Packaging	NRq
7.5	Material	NRq
7.6	Cleaning and disinfecting	NAp
7.7	Practical performance	NRq
7.8	Finish of parts	NRq
7.9.1	Total inward leakage	Pass
7.9.2	Penetration of filter material: Sodium chloride	NRq
7.9.2	Penetration of filter material: Paraffin oil	NRq
7.10	Compatibility with skin	NRq
7.11	Flammability	NRq
7.12	Carbon dioxide content of the inhalation air	NRq
7.13	Head harness	NRq
7.14	Field of vision	NRq
7.15	Exhalation valve(s)	NAp
7.16	Breathing resistance	NRq
7.17	Clogging	NRq
7.18	Demountable parts	Pass
9	Marking	NRq
10	Information to be supplied by the manufacturer	NRq

**Key**

	Shading shows the clauses requested.
NRq	The clauses were not requested.
Pass	Requirement satisfied.
Ltd	Testing requested was insufficient completely to verify compliance with the clause. Refer to the "Result details" section for more information.
Fail	Requirement not satisfied. Refer to the "Result details" section for more information.
NAs	Assessment not carried out.
NAp	Requirement not applicable.
NT	Requested but not tested due to early termination following failure.

\* Assessment relates only to those specimens which were tested and are the subject of this report.

**Product characteristics**

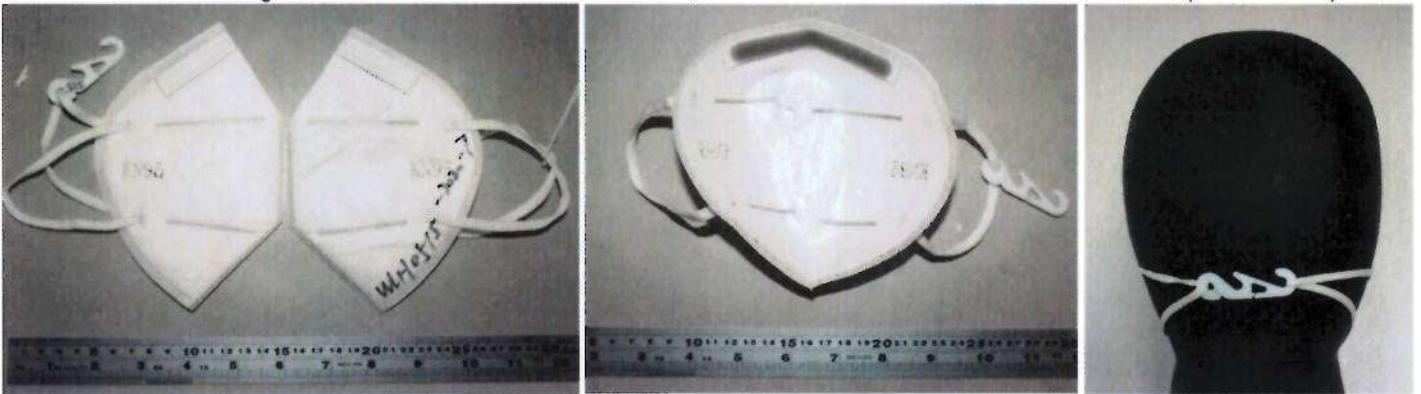
Property	Characteristic
Model	ZN9501
Classification claimed	FFP2 NR
Exhalation valve(s)	-

**Submission details**

Product	Quantity	Date received	Specimen No.
ZN9501 KN95 Protective Mask (Non-Medical)	20	19 <sup>th</sup> May 2020	WLH0515-2020-01 to -20

**Photographs of the products tested**

Anhui Zhongnan Air Dedence Works Protective Co., Ltd.'s model ZN9501 KN95 Protective Mask (Non-Medical)



CASST specimen number WLH0515-2020-07

**Procedures**

Specimens were selected at random from the submission(s) detailed above.

Testing was performed in accordance with EN 149:2001 incorporating Corrigendum No. 1 (January 2003), and amendment A1 (2009) unless otherwise specified below. Reference should be made to the standard when reading this report.

Unless stated otherwise, specimens were tested in the condition as received.

**Result details****7.4 Packaging****NRq**

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.

**7.5 Material****NRq**

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.

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.

**7.6 Cleaning and disinfecting****NAp<sup>1</sup>**

If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer.

With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.

**Note 1: Single shift use only.**

**7.7 Practical performance****NRq**

The particle filtering half mask shall undergo practical performance tests under realistic conditions.

**Specimen and subject details:**

<b>Specimen</b>	<b>Subject</b>
-	-
-	-

**7.8 Finish of parts****NRq**

Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs.



**7.9.1 Total inward leakage (%)****Pass<sup>2</sup>**

For particle filtering half masks fitted in accordance with the manufacturer's information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than: 25 % for FFP1, 11 % for FFP2, 5 % for FFP3;

and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than: 22 % for FFP1, 8 % for FFP2, 2 % for FFP3.

**Note 2: All 50 individual exercise results were not greater than 11%; All 10 individual wearer arithmetic means were not greater than 8%. Detailed data are showed below.**

Subject	Specimen	Cond	Walk	Head side/ side	Head up/down	Talk	Walk	Mean
LCF	-01	AR	10.7	9.2	5.5	3.6	5.1	6.8
SM	-02	AR	3.4	6.0	9.4	5.6	3.3	5.5
LZM	-03	AR	5.1	6.2	7.6	7.9	5.3	6.4
YZF	-04	AR	2.6	6.8	8.1	8.0	3.8	5.9
GJB	-05	AR	2.5	6.4	7.3	4.3	3.8	4.9
ZH	-06	TC	6.0	7.2	8.6	9.3	6.3	7.5
YB	-07	TC	6.8	8.2	9.8	10.5	4.1	7.9
JLX	-08	TC	4.4	5.4	9.3	6.9	4.7	6.1
TLX	-09	TC	2.9	5.2	8.3	4.9	4.4	5.1
TS	-10	TC	3.0	7.8	4.6	9.2	4.3	5.8
<b>Maximum permitted</b>			<b>11</b>					<b>8</b>

**Subject facial dimensions:**

Subject	Face Length (mm)	Face Width (mm)	Face Depth (mm)	Mouth Width (mm)
SM	116	144	109	49
TLX	104	153	112	40
YZF	113	151	106	48
TS	97	146	102	51
JLX	119	152	109	59
LCF	119	165	121	56
ZH	102	152	113	55
GJB	109	154	109	57
YB	112	150	119	66
LZM	118	157	124	44

## 7.9.2 Penetration of filter material

NRq

The penetration of the filter of the particle filtering half mask shall meet the requirements:

Classification	Maximum penetration of test aerosol	
	Sodium chloride test 95 l/min, %, Max	Paraffin oil test 95 l/min, %, Max
FFP1	20	20
<b>FFP2</b>	<b>6</b>	<b>6</b>
FFP3	1	1

## Sodium chloride test results: (NRq)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-	A.R.	-	
-		-	
-		-	
-	S.W.	-	
-		-	
-		-	
-	M.S. + T.C.	-	-
-		-	-
-		-	-
<b>Maximum permitted</b>		<b>6</b>	

## Paraffin oil test results: (NRq)

Specimen	Condition	Penetration (%)	
		After 3 minutes	Max. during exposure
-	A.R.	-	
-		-	
-		-	
-	S.W.	-	
-		-	
-		-	
-	M.S. + T.C.	-	-
-		-	-
-		-	-
<b>Maximum permitted</b>		<b>6</b>	

**7.10 Compatibility with skin**

**NRq**

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.

**7.11 Flammability**

**NRq**

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.

Specimen	Condition	Results
-	A.R.	-
-		-
-	T.C.	-
-		-

**7.12 Carbon dioxide content of the inhalation air**

**NRq**

The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume).

Specimen	CO <sub>2</sub> (%)
-	-
-	-
-	-
<b>Maximum permitted</b>	<b>1.0</b>

**7.13 Head harness**

**NRq**

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.

**7.14 Field of vision**

**NRq**

The field of vision is acceptable if determined so in practical performance tests.

**7.15 Exhalation valve****NAp**

A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations.

If an exhalation valve is provided it shall be protected against or be resistant to dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9.

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.

When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s.

**7.16 Breathing resistance****NRq**

Classification	Maximum permitted resistance (mbar)		
	inhalation		exhalation
	30 l/min	95 l/min	160 l/min or (25 cycles/min×2.0 l/stroke)
FFP1	0.6	2.1	3.0
<b>FFP2</b>	<b>0.7</b>	<b>2.4</b>	<b>3.0</b>
FFP3	1.0	3.0	3.0

Specimen	Condition	Inhalation resistance (mbar)		Exhalation resistance (mbar)				
		At 30 l/min	At 95 l/min	Breathing machine (25 cycles/min × 2.0 l/stroke)				
				A	B	C	D	E
-	A.R.	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-
-		-	-	-	-	-	-	-
-	T.C.	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-
-		-	-	-	-	-	-	-
-	S.W.	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-
-		-	-	-	-	-	-	-
	A.R. + F.C.							
	T.C. + F.C.							
<b>Maximum permitted</b>		<b>0.7</b>	<b>2.4</b>	<b>3.0</b>				

A: facing directly ahead; B: facing vertically upwards; C: facing vertically downwards; D: lying on the left side; E: lying on the right side.

**7.17 Clogging**

NAP<sup>3</sup>

**7.17.2 Breathing resistance**

Valved particle filtering half masks:

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.

Valveless particle filtering half masks:

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.

**7.17.3 Penetration of filter material**

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.

**Note 3: Single shift use only.**

## 7.18 Demountable parts

Pass<sup>4</sup>

All demountable parts (if fitted) shall be readily connected and secured, where possible by hand.

**Note 4: Head harness auxiliary hook were used, and in accordance with the requirement.**

## 9 Marking

NRq

### 9.1 Packaging

The following information shall be clearly and durably marked on the smallest commercially available packaging or legible through it if the packaging is transparent.

9.1.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.1.2 Type-identifying marking.

9.1.3 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.1.4 The number and year of publication of this European Standard.

9.1.5 At least the year of end of shelf life. The end of shelf life may be informed by a pictogram as shown in Figure 12a, where yyyy/mm indicates the year and month.

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.

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.

9.1.8 The packaging of those particle filtering half masks passing the dolomite clogging test shall be additionally marked with the letter "D". This letter shall follow the classification marking preceded by a single space.

### 9.2 Particle filtering half mask

Particle filtering half masks complying with this European Standard shall be clearly and durably marked with the following:

9.2.1 The name, trademark or other means of identification of the manufacturer or supplier.

9.2.2 Type-identifying marking.

9.2.3 The number and year of publication of this European Standard.

9.2.4 Classification

The appropriate class (FFP1, FFP2 or FFP3) followed by a single space and then:

"NR" if the particle filtering half mask is limited to single shift use only. Example: FFP3 NR, or

"R" if the particle filtering half mask is re-usable. Example: FFP2 R D."

9.2.5 If appropriate the letter D (dolomite) in accordance with clogging performance. This letter shall follow the classification marking preceded by a single space (see 9.2.4).

Examples FFP3 NR D, FFP2 R D"

9.2.6 Sub-assemblies and components with considerable bearing on safety shall be marked so that they can be identified

**10 Information to be supplied by the manufacturer**

**NRq**

10.1 Information supplied by the manufacturer shall accompany every smallest commercial available package.

10.2 Information supplied by the manufacturer shall be at least in the official language(s) of the country of destination.

10.3 The information supplied by the manufacturer shall contain all information necessary for trained and qualified persons on:

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.

10.4 The information shall be clear and comprehensible. If helpful, illustrations, part numbers, marking shall be added.

10.5 Warning shall be given against problems likely to be encountered, for example:

- fit of particle filtering half mask (check prior to use);
- it is unlikely that the requirements for leakage will be achieved if facial hair passes under the face seal;
- air quality (contaminants, oxygen deficiency);
- use of equipment in explosive atmosphere.

10.6 The information shall provide recommendations as to when the particle filtering half mask shall be discarded.

10.7 For devices marked "NR", a warning shall be given that the particle filtering half mask shall not be used for more than one shift."

End of Test Report.

