





中国认可 国际互认 检测 TESTING CNAS L0599

Test Report SL52035261326001TX Date: July 06,2020 Page 1 of 10

CHENGDE TECHNOLOGY CO., LTD NO.888-1088 SHIJI AVE., LONGGANG CITY, ZHEJIANG PROVINCE

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : (A)Folding protective mask

SGS Internal Ref No. : SHHL2006524691MD

Style No. : CD9501 Sample Color : (A)White

Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Jun 23, 2020

Testing Period : Jun 23, 2020 - Jul 06, 2020

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the

sample(s) tested, for further details, please refer to the following page(s).

Conclusion:

| Sample No. | Recommendation Level |
|------------|----------------------|
| (A) | FFP2 NR |

Signed for and on behalf of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd Testing Center

Sara bin

Sara Guo (Account Executive)



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Test Result

Respiratory Protective Devices — Filtering Half Masks to Protect against Particles — Requirements, Testing, Marking

Date: July 06,2020

(EN 149:2001+A1:2009)

Clause 7.4 Packaging

(EN 149:2001+A1:2009 Clause 8.2)

| Test Requirement | Results | Comment |
|--|---------|---------|
| 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. | Comply | Pass |

Clause 7.5 Material

(EN 149:2001+A1:2009, Clause 8.2 & 8.3.1 & 8.3.2)

| Test Requirement | Results | Comment |
|---|---------|---------|
| 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. | Comply | |
| 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. | Comply | Pass |
| When conditioned in accordance with 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse. | Comply | |
| Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer. | Comply | |

Clause 7.6 Cleaning and Disinfecting

(EN 149:2001+A1:2009, Clause 8.4 & 8.5 & 8.11)

| Test Requirement | Results | Comment |
|--|---|---------|
| 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. | Not applicable (Not designed to be re-usable) | N.A. |

Clause 7.7 Practical Performance

(EN 149:2001+A1:2009, Clause 8.4)

| Test Requirement | Results | Comment |
|---|------------------|---------|
| The particle filtering half mask shall undergo practical performance tests under realistic conditions. These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard. | No imperfections | Pass |



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Clause 7.8 Finish of Parts

(EN 149:2001+A1:2009, Clause 8.2)

| Test Requirement | Results | Comment |
|---|----------------|---------|
| Parts of the device likely to come into contact with the wearer shall have no | No sharp | Pass |
| sharp edges or burrs. | edges or burrs | F d55 |

Clause 7.9.1 Total Inward Leakage

(EN 149:2001+A1:2009, Clause 8.5)

| Test Requirement | Results | Comment |
|---|-------------------------------|-------------------------|
| The total inward leakage consists of three components: face seal leakage, exhalation value leakage(if exhalation value fitted) and filter penetration. 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 | Detail refer to Appendix 1 | Meet FFP1, Meet FFP2 |

Appendix 1: Summarization of Test Data

Inward Leakage Test Data

| inward Le | eakage res | <u>l Dala</u> | | | | | | |
|-----------|------------|---------------|---------|--------------|------------|---------|---------|---------|
| Subject | Sample | Condition | Walk(%) | Head | Head | Talk(%) | Walk(%) | Mean(%) |
| | No. | | | Side/side(%) | up/down(%) | | | |
| Zhou | 1 | A.R. | 5.50 | 5.42 | 7.72 | 5.81 | 6.43 | 6.18 |
| Luo | 2 | A.R. | 7.58 | 7.04 | 6.23 | 7.16 | 7.27 | 7.06 |
| Lu | 3 | A.R. | 7.25 | 6.53 | 4.80 | 6.36 | 6.12 | 6.21 |
| Wang | 4 | A.R. | 6.36 | 4.92 | 6.28 | 4.82 | 4.41 | 5.36 |
| Bao | 5 | A.R. | 7.89 | 8.45 | 6.09 | 6.59 | 6.13 | 7.03 |
| Ding | 6 | T.C. | 5.78 | 5.88 | 6.08 | 5.58 | 4.63 | 5.59 |
| Li | 7 | T.C. | 6.86 | 8.32 | 7.40 | 8.47 | 6.20 | 7.45 |
| Chen | 8 | T.C. | 5.26 | 5.62 | 5.86 | 7.12 | 5.94 | 5.96 |
| Song | 9 | T.C. | 6.39 | 6.88 | 6.94 | 5.84 | 5.53 | 6.32 |
| Ye | 10 | T.C. | 7.07 | 5.74 | 8.30 | 7.27 | 7.91 | 7.26 |

Facial Dimension(mm)

| Subject | Face length | Face Width | Face Depth | Mouth Width |
|---------|-------------|------------|------------|-------------|
| Chen | 125 | 150 | 120 | 58 |
| Lu | 115 | 132 | 107 | 48 |
| Zhou | 115 | 135 | 106 | 52 |
| Li | 125 | 130 | 107 | 46 |
| Luo | 125 | 136 | 100 | 43 |
| Zheng | 128 | 140 | 112 | 55 |
| Wang | 120 | 147 | 103 | 48 |
| Song | 120 | 140 | 100 | 50 |
| Bao | 130 | 134 | 104 | 50 |
| Ding | 134 | 150 | 110 | 52 |



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|---------|------------|----------------|--------------------|--------------|
| Liu | 120 | 135 | 117 | 50 |
| Ye | 126 | 137 | 105 | 52 |

Clause 7.9.2 Penetration of Filter Material

(EN 149:2001+A1:2009, Clause 8.11 & EN 13274-7:2019)

| | | Test Requirement | | Results | Comment | |
|------|----------------|-------------------------------------|----------------------------|---------|-----------------|------------|
| | | of the filter of the particle filte | the | | | |
| requ | uirements of t | the following table. | | | | |
| | Classifica | Maximum penetration | on of test aerosol | | | |
| | tion | Sodium chloride test 95 | Paraffin oil test 95 l/min | | | |
| | | l/min | | | Detail refer to | Meet FFP1, |
| | | % | % | | Appendix 2 | Meet FFP2 |
| | | max. | max. | | | |
| | FFP1 | 20 | 20 | | | |
| | FFP2 | 6 | 6 | | | |
| | FFP3 | 1 | 1 | | | |

Appendix 2: Summarization of Test Data

Penetration of filter material

| Aerosol | Condition | Sample No. | Penetration (%) | | | |
|--|--|------------|--------------------|--|--|--|
| | | 1 | 0.866 | | | |
| | As received | 2 | 0.885 | | | |
| | | 3 | 0.873 | | | |
| | | 4 | 0.875 | | | |
| Sodium chloride test | Simulated wearing treatment | 5 | 0.837 | | | |
| | | 6 | 0.852 | | | |
| | Mechanical strength +Temperature conditioned | 7 | 1.255 | | | |
| | | 8 | 1.207 | | | |
| | Conditioned | 9 | 1.229 | | | |
| | | 10 | 0.967 | | | |
| | As received | 11 | 0.985 | | | |
| | | 12 | 0.993 | | | |
| | | 13 | 0.962 | | | |
| Paraffin oil test | Simulated wearing treatment | 14 | 0.985 | | | |
| | | 15 | 0.899 | | | |
| | Machanical atranath (Tamparatura | 16 | 5.703 | | | |
| | Mechanical strength +Temperature conditioned | 17 | 5.029 | | | |
| | Conditioned | 18 | 5.327 | | | |
| Flow conditioning: Single filter: 95.0 L/min | | | | | | |



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Clause 7.10 Compatibility with Skin

(EN 149:2001+A1:2009, Clause 8.4 & 8.5)

| Test Requirement | Results | Comment |
|--|---|---------|
| 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. | No irritation or any other adverse effect to health | Pass |

Clause 7.11 Flammability

(EN 149:2001+A1:2009, Clause 8.6)

| Test Requirement | Results | Comment |
|---|-----------------|---------|
| The material used shall not present a danger for the wearer and shall not be of highly flammable nature | Detail refer to | 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. | Appendix 3 | F 455 |

Appendix 3: Summarization of Test Data

Flammability

| Condition | Sample No. | Result |
|-------------------------|------------|--------|
| | 1 | NIL |
| As received | 2 | NIL |
| | 3 | NIL |
| Temperature conditioned | 4 | NIL |

Clause 7.12 Carbon Dioxide Content of The Inhalation Air

(EN 149:2001+A1:2009, Clause 8.7)

| Test Requirement | Results | Comment |
|--|-------------------------------|---------|
| The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1,0 % (by volume) | Detail refer to Appendix 4 | Pass |

Appendix 4: Summarization of Test Data

Carbon Dioxide Content of The Inhalation Air

| Condition | Sample No. | Result(%) | | | | |
|-------------|------------|-----------|-----------------|--|--|--|
| | 1 | 0.4746 | | | | |
| As received | 2 | 0.4738 | Mean value:0.47 | | | |
| | 3 | 0.4733 | | | | |



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Clause 7.13 Head Harness

(EN 149:2001+A1:2009, Clause 8.4 & 8.5)

| Test Requirement | Results | Comment |
|---|---------|---------|
| The head harness shall be designed so that the particle filtering half mask can be donned and removed easily. | Comply | |
| 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. | Comply | Pass |

Clause 7.14 Field of Vision

(EN 149:2001+A1:2009, Clause 8.4)

| Test Requirement | Results | Comment |
|---|---------|---------|
| The field of vision is acceptable if determined so in practical performance | Comply | Pass |
| tests. | | 1 033 |

Clause 7.15 Exhalation Valve(s)

(EN 149:2001+A1:2009, Clause 8.2 & 8.9.1 & 8.3.4 & 8.8)

| Test Requirement | Results | Comment |
|---|---|---------|
| (a) A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. | Not applicable due to No exhalation valve | |
| (b) 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. | Not applicable due to No exhalation valve | N.A. |
| (c) 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. | Not applicable due to No exhalation valve | |
| (d) When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10N applied for 10 s. | Not applicable due to No exhalation valve | |



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Clause 7.16 Breathing Resistance

(EN 149:2001+A1:2009, Clause 8.9)

| | Tes | Results | Comment | | | |
|---------------------------------|----------|----------------------|-------------|--|-----------------|------------|
| The penetration requirements of | | | | | | |
| Classification | Maxim | um permitted resista | ance (mbar) | | Datailustanta | Meet FFP1, |
| | Inl | nalation | Exhalation | | Detail refer to | Meet FFP2, |
| | 30 l/min | 95 l/min | 160 l/min | | Appendix 5 | Meet FFP3 |
| FFP1 | 0.6 | 2.1 | 3.0 | | | |
| FFP2 | 0.7 | 2.4 | 3.0 | | | |
| FFP3 | 1.0 | 3.0 | 3.0 | | | |

Appendix 5: Summarization of Test Data

Breathing resistance (mbar)

| | FI | / ! - \ | | | 1 | | | | | 2 | | | | | 3 | | |
|-------------|--------------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Flow rate(I/ | min) | Α | В | С | D | Е | Α | В | С | D | Е | Α | В | С | D | Е |
| As received | Inhalation | 30 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.2 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.3 |
| | minalation | 95 | 1.1 | 1.3 | 1.2 | 1.1 | 1.1 | 1.2 | 1.3 | 1.2 | 1.3 | 1.1 | 1.3 | 1.2 | 1.3 | 1.3 | 1.3 |
| | Exhalation | 160 | 2.8 | 2.7 | 2.8 | 2.6 | 2.7 | 2.7 | 2.8 | 2.7 | 2.8 | 2.6 | 2.7 | 2.8 | 2.8 | 2.7 | 2.8 |
| | []((I/ | | 5 | | | | 6 | | | | | | | | | | |
| Simulated | Flow rate(I/ | min) | Α | В | С | D | Е | Α | В | С | D | Е | Α | В | С | D | Е |
| wearing | Inhalation | 30 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 |
| treatment | minalation | 95 | 1.0 | 1.2 | 1.1 | 1.0 | 1.1 | 1.2 | 1.1 | 1.0 | 1.1 | 1.2 | 1.2 | 1.0 | 1.1 | 1.2 | 1.1 |
| | Exhalation | 160 | 2.8 | 2.7 | 2.6 | 2.7 | 2.8 | 2.8 | 2.7 | 2.7 | 2.8 | 2.8 | 2.7 | 2.8 | 2.8 | 2.8 | 2.7 |
| | []nata/ | /:\ | 7 | | | 8 | | | | | 9 | | | | | | |
| | Flow rate(I/ | min) | Α | В | С | D | Е | Α | В | С | D | Е | Α | В | С | D | Е |
| Temperature | Inhalation | 30 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 |
| conditioned | aiaiioii | 95 | 1.1 | 1.2 | 1.0 | 1.1 | 1.0 | 1.0 | 1.1 | 1.1 | 1.0 | 1.2 | 1.0 | 1.1 | 1.1 | 1.2 | 1.0 |
| | Exhalation | 160 | 2.8 | 2.7 | 2.7 | 2.8 | 2.7 | 2.7 | 2.8 | 2.7 | 2.7 | 2.8 | 2.7 | 2.7 | 2.6 | 2.6 | 2.7 |

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



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Clause 7.17 Clogging

(EN 149:2001+A1:2009, Clause 8.9 & 8.10)

| | Test Requirement | Results | Comment |
|---|---|---------------------------------------|---------|
| FFP1: 4 mbar, FF The exhalation re flow. Valveless particle After clogging the | | Optional for single shift device only | N.A. |
| All types (valved | metration of filter material and valveless) of particle filter requirement shall also meet the maximum penetration Sodium chloride test 95 l/min % max. 20 6 | Optional for single shift device only | N.A. |

Clause 7.18 Demountable Parts

(EN 149:2001+A1:2009, Clause 8.2)

| Test Requirement | Results | Comment |
|---|---------|---------|
| All demountable parts (if fitted) shall be readily connected and secured, | Comply | Pass |
| where possible by hand | | F d S S |

| Test | Uncertainty |
|--|-------------|
| Total inward leakage | 3.4% |
| Penetration of filter material | 4.8% |
| Carbon dioxide content of the inhalation air | 3.9% |
| Breathing resistance (30L/min) | 5.9% |
| Breathing resistance (95L/min) | 4.9% |
| Breathing resistance (160L/min) | 4.3% |



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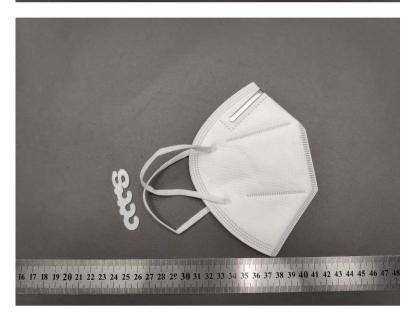
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