

Test Report

Applicant: ZhongshanSaifute Labor Protective Articles Co., Ltd
Address: No.4, Xihuan 4th Road,Southern District,Zhongshan, Guangdong Province, China

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

Product name: LAIANZHI 9102A SERIES DISPOSABLE FOLDABLE PROTECTIVE MASK
Model: KLT01
Brand: LAIANZHI
Claim level: FFP2
Sample quantity: 150 Pcs

Sample Received Date: Jun. 08, 2020
Testing Period: Jun. 08, 2020~ Jun. 21, 2020

Test Requirement:

According to the requirement of the client, the test item(s) of the sample is according to the standard EN149:2001+A1:2009.

Test Result(s): Please refer to the following page(s)

Test Method: Please refer to the following page(s)

Compiled by: _____

Reviewed by: _____

Approved by: _____

Date: 2020-06-28



May

Summary of assessment*

| Clause | Assessment |
|---|------------|
| 7.3 Visual inspection | NRq |
| 7.4 Packaging | Pass |
| 7.5 Material | Pass |
| 7.6 Cleaning and disinfecting | N.A. |
| 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 | 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) | N.A. |
| 7.16 Breathing resistance | Pass |
| 7.17 Clogging | N.A. |
| 7.18 Demountable parts | Pass |

Key

| | |
|------|--|
| Pass | Requirement satisfied. |
| NRq | The clauses were not required. |
| Fail | Requirement not satisfied. Refer to the "Result details" section for more information. |
| N.A. | Assessment not carried out. |

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

Test Result

Respiratory Protective Devices — Filtering Half Masks to Protect against Particles — Requirements, Testing, Marking
(EN 149:2001+A1:2009)

Clause 7.3 Visual inspection

| Test Requirement | Results | Comment |
|---|--------------------------------|---------|
| Marking and the information supplied by the manufacturer, requirements refer to clause 9 and clause 10. | The clauses were not required. | NRq |

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 | Pass |
| 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 | Pass |
| 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 | Pass |

Clause 7.6 Cleaning and Disinfecting

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

| Test Requirement | Results | Comment |
|---|------------------------------------|-------------|
| <p>If the particle filtering half mask is designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer.</p> <p>With reference to 7.9.2, after cleaning and disinfecting the re-usable particle filtering half mask shall satisfy the penetration requirement of the relevant class.</p> | <p>Assessment not carried out.</p> | <p>N.A.</p> |

Clause 7.7 Practical Performance

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

| Test Requirement | Results | Comment |
|--|-------------------------|-------------|
| | Sample 11#~12#: | |
| <p>General:</p> <p>a) head harness comfort</p> <p>b) security of fastenings</p> <p>c) field of vision</p> <p>d) any other comments reported by the wearer on request.</p> | <p>No imperfections</p> | <p>Pass</p> |
| <p>Walking Test:</p> <p>The subjects wearing normal working clothes and wearing the particle filtering half mask shall walk at a regular rate of 6 km/h on a level course. The test shall be continuous, without removal of the particle filtering half mask, for a period of 10 min.</p> | <p>No imperfections</p> | |
| <p>Work Simulation Test:</p> <p>a) walking on the level with headroom of (1.3 ± 0.2)m for 5min</p> <p>b) crawling on the level with headroom of (0.7 ± 0.05)m for 5min</p> <p>c) filling a small basket (see Figure 1, approximate volume = 8 l) with chippings or other suitable material from a hopper which stands 1,5 m high and has an opening at the bottom to allow the contents to be shovelled out and a further opening at the top where the basket full of chippings is returned.</p> | <p>No imperfections</p> | |

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 nosharp edges or burrs. | No sharp edges or burrs | Pass |

Clause 7.9.1 Total Inward Leakage

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

| Test Requirement | Results | Comment |
|---|----------------------------|---------|
| <p>For particle filtering half masks fitted in accordance with the manufacturer’s information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than:</p> <p style="padding-left: 40px;">25% for FFP1 11% for FFP2 5% for FFP3</p> <p>and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than:</p> <p style="padding-left: 40px;">22% for FFP1 8% for FFP2 2% for FFP3</p> | Detail refer to Appendix 1 | Pass |

Appendix1:Summarizationof TestData

| Subject | Sample | Condition | Normal Breathing (%) | Head Side/Side (%) | Head Up/Down (%) | Speak Loudly (%) | Normal Breathing (%) | Mean (%) |
|---------|--------|-----------|----------------------|--------------------|------------------|------------------|----------------------|----------|
| Ma | 1# | A.R. | 4.521 | 5.685 | 5.241 | 6.037 | 5.059 | 5.309 |
| Zhong | 2# | A.R. | 2.417 | 3.856 | 2.890 | 4.901 | 2.907 | 3.394 |
| Wu | 3# | A.R. | 6.524 | 6.985 | 7.240 | 7.931 | 7.289 | 7.194 |
| Zhou | 4# | A.R. | 8.417 | 7.235 | 7.990 | 8.682 | 7.483 | 7.961 |
| Shi | 5# | A.R. | 7.936 | 6.545 | 7.218 | 8.120 | 6.986 | 7.361 |
| Wu | 6# | T.C. | 3.971 | 4.235 | 3.856 | 4.510 | 4.703 | 4.255 |
| Li | 7# | T.C. | 4.971 | 4.808 | 5.379 | 5.824 | 5.001 | 5.197 |
| Huang | 8# | T.C. | 6.121 | 7.856 | 7.931 | 8.045 | 6.944 | 7.379 |
| Fang | 9# | T.C. | 6.808 | 6.908 | 6.453 | 7.829 | 7.147 | 7.029 |
| Zhou | 10# | T.C. | 9.931 | 10.245 | 10.971 | 12.398 | 11.430 | 10.995 |

Facial Dimension:

| Subject | Length of Face (mm) | Width of Face (mm) | Depth of Face (mm) | Width of Mouth (mm) |
|---------|--------------------------|-------------------------|-------------------------|--------------------------|
| Ma | 130 | 140 | 125 | 53 |
| Zhong | 120 | 158 | 110 | 50 |
| Wu | 110 | 144 | 117 | 46 |
| Zhou | 115 | 135 | 121 | 57 |
| Shi | 111 | 137 | 121 | 53 |
| Wu | 112 | 146 | 112 | 50 |
| Li | 106 | 155 | 112 | 54 |
| Huang | 114 | 138 | 117 | 55 |
| Fang | 110 | 138 | 118 | 53 |
| Zhou | 114 | 127 | 121 | 51 |

Clause 7.9.2 Penetration of Filter Material

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

| Test Requirement | | | Results | Comment |
|---|--|--|----------------------------|---------|
| The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table. | | | Detail refer to Appendix 2 | Pass |
| Classification | Maximum penetration of test aerosol | | | |
| | Sodium chloride test 95L/min % max. | Paraffin oil test 95 L/min % 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 (%) | | Assessment |
|-------------------------------|-------------------|------------|----------------------------|----------------------|------------|
| | | | Average in 30s after 3 min | Max. during exposure | |
| Sodium chloride test | A.R. | 13# | 0.7 | / | Pass |
| | | 14# | 0.7 | / | |
| | | 15# | 0.8 | / | |
| | S.W. | 22# | 0.6 | / | |
| | | 23# | 0.7 | / | |
| | | 24# | 0.8 | / | |
| | M.S. + T.C. | 25# | / | 0.7 | |
| | | 26# | / | 0.8 | |
| | | 27# | / | 0.7 | |
| | Paraffin oil test | A.R. | 16# | 0.8 | |
| 17# | | | 0.9 | / | |
| 18# | | | 1.1 | / | |
| S.W. | | 19# | 1.1 | / | |
| | | 20# | 1.2 | / | |
| | | 21# | 1.2 | / | |
| M.S. + T.C. | | 28# | / | 2.0 | |
| | | 29# | / | 1.7 | |
| | | 30# | / | 1.5 | |
| Flow conditioning: 95.0 L/min | | | | | |

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 when tested, the particle filtering half mask shall not burn or not to continue on burn for more than 5 s after removal from the flame. | Detail refer to Appendix 3 | Pass |

Appendix 3: Summarization of Test Data

Flammability

| Condition | Sample No. | Result | Assessment |
|-----------|------------|--------------|------------|
| A.R. | 31# | Nonflammable | Pass |
| | 32# | Nonflammable | |
| T.C. | 33# | Nonflammable | |
| | 34# | Nonflammable | |

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 | Assessment |
|-----------|------------|------------------|------------|
| A.R. | 35# | 0.27% | Pass |
| | 36# | 0.24% | |
| | 37# | 0.29% | |
| | | Mean value 0.27% | |

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 | Pass |
| 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 | |

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 |

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. | Assessment not carried out. | N.A. |
| 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. | Assessment not carried out. | |
| 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. | Assessment not carried out. | |
| (d) When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10N applied for 10 s. | Assessment not carried out. | |

Clause 7.16 Breathing Resistance

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

| Test Requirement | | | | Results | Comment |
|---|-------------------------------------|----------|------------|----------------------------|---------|
| The penetration of the filter of the particle filtering half mask shall meet the requirements of the following table. | | | | Detail refer to Appendix 5 | Pass |
| Classification | Maximum permitted resistance (mbar) | | | | |
| | Inhalation | | Exhalation | | |
| | 30 L/min | 95 L/min | 160 L/min | | |
| FFP1 | 0.6 | 2.1 | 3.0 | | |
| FFP2 | 0.7 | 2.4 | 3.0 | | |
| FFP3 | 1.0 | 3.0 | 3.0 | | |

Appendix 5: Summarization of Test Data

| Specimen | Condition | Inhalation | | Exhalation resistance(mbar) | | | | |
|----------|-----------|-------------|-------------|-----------------------------|------|------|------|------|
| | | At 30 L/min | At 95 L/min | At 160 L/min | | | | |
| | | | | A | B | C | D | E |
| 38# | A.R. | 0.28 | 1.15 | 2.15 | 2.16 | 2.20 | 2.18 | 2.19 |
| 39# | | 0.32 | 1.17 | 2.17 | 2.19 | 2.20 | 2.21 | 2.19 |
| 40# | | 0.35 | 1.21 | 2.27 | 2.29 | 2.32 | 2.30 | 2.31 |
| 41# | S.W. | 0.32 | 1.20 | 2.20 | 2.19 | 2.23 | 2.21 | 2.22 |
| 42# | | 0.35 | 1.19 | 2.21 | 2.23 | 2.24 | 2.20 | 2.21 |
| 43# | | 0.30 | 1.18 | 2.22 | 2.23 | 2.20 | 2.24 | 2.21 |
| 44# | T.C. | 0.33 | 1.24 | 2.31 | 2.30 | 2.32 | 2.33 | 2.31 |
| 45# | | 0.29 | 1.21 | 2.24 | 2.26 | 2.24 | 2.25 | 2.27 |
| 46# | | 0.31 | 1.19 | 2.21 | 2.18 | 2.19 | 2.22 | 2.20 |
| / | F.C. | / | / | / | / | / | / | / |
| / | | / | / | / | / | / | / | / |
| / | | / | / | / | / | / | / | / |

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

Clause 7.17 Clogging

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

| Test Requirement | Results | Comment | | | | | | | | | | | | | | | | | | |
|---|------------------------------------|-------------------------------------|----------------------------|-------------------------------|----------------------------|---|---|------|------|------|----|----|------|---|---|------|---|---|------------------------------------|-------------|
| <p>Clause 7.17.2 Breathing resistance</p> <p>Valved particle filtering half masks:</p> <p>After clogging the inhalation resistances shall not exceed: FFP1: 4 mbar, FFP2: 5 mbar, FFP3: 7 mbar at 95L/min continuous flow The exhalation resistance shall not exceed 3 mbar at 160 L/min continuous flow.</p> <p>Valveless particle filtering half masks:</p> <p>After clogging the inhalation and exhalation resistances shall not exceed: FFP1: 3 mbar, FFP2: 4 mbar, FFP3: 5 mbar at 95L/min continuous flow</p> | <p>Assessment not carried out.</p> | <p>N.A.</p> | | | | | | | | | | | | | | | | | | |
| Test Requirement | Results | Comment | | | | | | | | | | | | | | | | | | |
| <p>Clause 7.17.3 Penetration of filter material</p> <p>All types (valved and valveless) of particle filtering half masks claimed to meet the clogging requirement shall also meet the requirements.</p> <table border="1" data-bbox="164 1095 1010 1435"> <thead> <tr> <th rowspan="4">Classification</th> <th colspan="2">Maximum penetration of test aerosol</th> </tr> <tr> <th>Sodium chloride test 95 L/min</th> <th>Paraffin oil test 95 L/min</th> </tr> <tr> <th>%</th> <th>%</th> </tr> <tr> <th>max.</th> <th>max.</th> </tr> </thead> <tbody> <tr> <td>FFP1</td> <td>20</td> <td>20</td> </tr> <tr> <td>FFP2</td> <td>6</td> <td>6</td> </tr> <tr> <td>FFP3</td> <td>1</td> <td>1</td> </tr> </tbody> </table> | Classification | Maximum penetration of test aerosol | | Sodium chloride test 95 L/min | Paraffin oil test 95 L/min | % | % | max. | max. | FFP1 | 20 | 20 | FFP2 | 6 | 6 | FFP3 | 1 | 1 | <p>Assessment not carried out.</p> | <p>N.A.</p> |
| Classification | | Maximum penetration of test aerosol | | | | | | | | | | | | | | | | | | |
| | | Sodium chloride test 95 L/min | Paraffin oil test 95 L/min | | | | | | | | | | | | | | | | | |
| | | % | % | | | | | | | | | | | | | | | | | |
| | max. | max. | | | | | | | | | | | | | | | | | | |
| FFP1 | 20 | 20 | | | | | | | | | | | | | | | | | | |
| FFP2 | 6 | 6 | | | | | | | | | | | | | | | | | | |
| FFP3 | 1 | 1 | | | | | | | | | | | | | | | | | | |

Clause 7.18 Demountable Parts

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

| Test Requirement | Results | Comment |
|---|---------------|-------------|
| <p>All demountable parts (if fitted) shall be readily connected and secured, where possible by hand</p> | <p>Comply</p> | <p>Pass</p> |

Sample photo(s):



Fig.1



Fig.2



Fig.3

This test report displaces the original report No.S20060801301E-R1, and the original one was invalid since the date of this test report No.S20060801301E-R1 released.

****End of Report****

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