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CNAS L10118

国健检测

Test Report

Report No.:GW0503-2022

Product Name

FFP2 MASKS

Applicant

ATHANASIOS FOTIAS

Manufacturer

LARISA FACE COVER SA

Test Type

Entrusted inspection

Jiangsu Guojian Testing Technology Co.,Ltd

3/F., Unit D, Xingye Building, Taihu International Tech-Park, Wuxi, Jiangsu, China





Test Report

| | | | |
|---------------------------------|---|----------------------------|------------------------|
| Product name | FFP2 MASKS | Model name | 2022PR |
| | | Brand | LARISA FACE COVER |
| Laboratory/Add | Jiangsu Guojian Testing Technology Co., Ltd/ 3/F., Unit D, Xingye Building, Taihu International Tech-Park, Wuxi, Jiangsu, China | | |
| Applicant/Add/Tel | ATHANASIOS FOTIAS/INDUSTRIAL AREA OF LARISA, GREECE /+302410541515 | | |
| Manufacturer/Add/Tel | LARISA FACE COVER SA/INDUSTRIAL AREA OF LARISA, GREECE /+302410541515 | | |
| Sample classification | FFP2 NR | Sample number | GW0503-2022 |
| Sample quantity | 170 pcs | Date of receipt of sample | 25/03/2022 |
| Test type | Entrusted inspection | Article/Batch/Style number | 2022PR/220741/FFP2 |
| Date(s) of performance of tests | 25/03/2022~31/03/2022 | Testing location | Same as the Laboratory |
| Sample state | Meeting the requirements of testing | Sample description | Refer to page 3 |
| Test standard(s) | EN 149:2001+A1:2009 Respiratory protective devices -Filtering half masks to protect against particles -Requirements,testing,marking | | |
| Test item(s) | Packaging, material, practical performance, finish of parts, compatibility with skin, flammability, carbon dioxide content of the inhalation air, head harness, field of vision, penetration of filter material, breathing resistance, total inward leakage | | |
| Test conclusion | <p>The sample upon testing comply with FFP2 NR classification requirements according to the standard EN 149:2001+A1:2009.The details of test results see on Pages 3-11.</p> <p style="text-align: center;"> </p> | | |
| Note | The test results presented in this report relate only to the submitted sample as received. | | |

Lu Bing

Approver(name,signature)

Zhang Huifen

Reviewer(name,signature)

Wan Heng

Chief Tester(name,signature)



| | |
|--|--|
| Sample description: | See Sample Photo |
| Test item particulars: | |
| Type of useuse | <input type="checkbox"/> re-useable particle filtering half mask <input checked="" type="checkbox"/> single shift only particle filtering half mask |
| Classes of devices | <input type="checkbox"/> FFP1 <input checked="" type="checkbox"/> FFP2 <input type="checkbox"/> FFP3 |
| Exhalation valve(s) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Inhalation valve(s) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Designed to protect against both solid & liquid aerosols. : | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Possible test case verdicts: | |
| - Test case does not required to the test object | NRq(Not required) |
| - Test case does not apply to the test object..... | N/A (Not Applicable) |
| - Test object does meet the requirement | P (Pass) |
| - Test object does not meet the requirement | F (Fail) |
| General remarks: | |
| <p>The test results presented in this report relate only to the submitted sample as received.</p> <p>This report shall not be reproduced, except in full, without the written approval of the issuing Laboratory can provide assurance that parts of a report are not taken out of context.</p> <p>Determination of the test results includes consideration of measurement uncertainty from the test equipment and methods.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> | |
| Environmental condition of the testing in this report: | |
| <p>1) Unless otherwise specified, the ambient temperature for testing shall be $(24 \pm 1) ^\circ\text{C}$;</p> <p>2) T.C. Temperature conditioned:</p> <p>a) for 24 h to a dry atmosphere of $70 ^\circ\text{C}$; b) for 24 h to a temperature of $-30 ^\circ\text{C}$;</p> <p>and return to room temperature $(24 \pm 1) ^\circ\text{C}$ for 4 h between exposures and prior to subsequent testing.</p> | |



| S.No. (CL.No.) | Test item | | Unit | Technical requirement | Test result | Single item decision |
|----------------------|---------------------------|--|--|--|---|----------------------|
| 1 (7.4) | Packaging | Visual inspection | — | 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. | Particle filtering half masks packaged and protected against mechanical damage and contamination. | Pass |
| 2 (7.5) | Material | Visual inspection | — | 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. | Materials were suitable withstand handling and wear. | Pass |
| | | Visual inspection | — | After undergoing S.W., none of the particle filtering half masks shall have suffered mechanical failure of the facepiece or straps. | Sample 1:neither facepiece nor straps have mechanical failure | |
| | | | | | Sample 2:neither facepiece nor straps have mechanical failure | |
| | | | | | Sample 3:neither facepiece nor straps have mechanical failure | |
| | | Visual inspection | — | After undergoing S.W. and T.C., none of the particle filtering half masks shall not collapse. | Sample 4:no collapse | |
| Sample 5:no collapse | | | | | | |
| Visual inspection | — | Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer. | Not constitute a hazard or nuisance for the wearer | | | |
| 3 (7.6) | Cleaning and disinfecting | | — | Particle filtering half mask designed to be re-usable, the materials used shall withstand the cleaning and disinfecting agents and procedures to be specified by the manufacturer. Testing shall be done in accordance with 8.4 and 8.5. | — | N/A |
| | | | | 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. Testing shall be done in accordance with 8.11. | — | |



| S.No. (Cl.No.) | Test item | Unit | Technical requirement | Test result | Single item decision | |
|---|--|------------------------|-----------------------|--|---|------|
| 4 (7.7) | Practical performance | Head harness comfort | — | Head harness should be comfort. | Sample 1 has the feeling of comfortable wearing | Pass |
| | | | | | Sample 2 has the feeling of comfortable wearing | |
| | | Security of fastenings | — | Fastenings are safe and reliable | Sample 1: All fastenings are firm | |
| | | | | | Sample 2: All fastenings are firm | |
| | | Field of vision | — | Field of vision is acceptable | Samples 1: Having a wider visual field | |
| | | | | | Samples 2: Having a wider visual field | |
| 5 (7.8) | Finish of parts | Visual inspection | — | Parts of the device likely to come into contact with the wearer shall have no sharp edges and burrs. | Parts of the device have no sharp edges and burrs | Pass |
| 6 (7.9.2) | Leakage— Penetration of filter material | Sodium chloride | — | $\leq 6\%$ | A.R. ¹⁾ 0.4% 0.5% 0.3% | Pass |
| | | | | | S.W. ¹⁾ 0.6% 0.5% 0.5% | |
| | | | | | M.S+T.C. ²⁾ 0.8% 0.8% 0.7% | |
| | | Paraffin oil | — | $\leq 6\%$ | A.R. ¹⁾ 1.3% 1.2% 1.3% | Pass |
| | | | | | S.W. ¹⁾ 1.4% 1.3% 1.3% | |
| | | | | | M.S+T.C. ²⁾ 2.5% 2.7% 2.6% | |
| <p>¹⁾ average penetration over a time of 30s, beginning 3 min after the start of the test reported</p> <p>²⁾ max. penetration during exposure test reported;</p> <p>Note: The penetration of the filter of the particle filtering half mask shall meet the requirements below: Maximum penetration of sodium chloride aerosol test 95 l/min max. FFP1: 20%, FFP2: 6%, FFP3: 1% Maximum penetration of paraffin oil aerosol test 95 l/min max. FFP1: 20%, FFP2: 6%, FFP3: 1%</p> | | | | | | |



| S.No. (CL.No.) | Test item | Unit | Technical requirement | Test result | | Single item decision |
|-------------------|--|--|--|--|--|----------------------|
| 7 (7.10) | Compatibility with skin | — | 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. | A.R. | 5 pcs all don't cause irritation | Pass |
| | | | 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. | T.C. | 5 pcs all don't cause irritation | |
| 8 (7.11) | Flammability | — | When tested, the particle filtering half mask shall not burn or not to continue to burn for more than 5s after removal from the flame. | A.R. | The Sample is burning. Burning time:0.5s | Pass |
| | | | When tested, the particle filtering half mask shall not burn or not to continue to burn for more than 5s after removal from the flame. | | The Sample is burning. Burning time:0.4s | |
| T.C. | The Sample is burning. Burning time:0.4s | The Sample is burning. Burning time:0.5s | | | | |
| | The Sample is burning. Burning time:0.5s | | | | | |
| 9 (7.12) | Carbon dioxide content of the inhalation air | — | $\leq 1.0\%$ (by volume) | Sample 1 | 0.5829% | Pass |
| | | | | Sample 2 | 0.5837% | |
| | | | | Sample 3 | 0.5846% | |
| | | | | Average | 0.58% | |
| 10 (7.13) | Head harness | — | 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. | A.R. | All of 5 pieces particle filtering half mask meet the requirements | Pass |
| | | | | T.C. | All of 5 pieces particle filtering half mask meet the requirements | |
| 11 (7.14) | Field of vision | — | The field of vision is acceptable if determined so in practical performance tests. | The two samples both have a wider visual field | | Pass |



| S.No. (CL.No.) | Test item | Unit | Technical requirement | Test result | | Single item decision | |
|-------------------|--|--|---|--|------|----------------------|-----|
| 12 (7.15) | Exhalation valve(s) | Visual inspection | — | A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. | A.R. | — | N/A |
| | | | | | T.C. | — | |
| | | Visual inspection | — | 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. | A.R. | — | |
| | | | | | T.C. | — | |
| | | Flow conditioning | — | 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. | A.R. | — | |
| | | | | | T.C. | — | |
| | | Strength of attachment of exhalation valve housing | — | When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 s. | A.R. | — | |
| | | | | | T.C. | — | |
| 13 (7.17) | Clogging-Breathing resistance & Penetration of filter material | — | Optional for single shift use devices, mandatory for re-usable devices. Tested by Cl. 7.17.1/2/3. | Tests not requested for single shift use face mask | | — | |
| 14 (7.18) | Demountable parts | — | All demountable parts (if fitted) shall be readily connected and secured, where possible by hand. | No demountable parts | | — | |

**Table A- Leakage—Total Inward Leakage**

| S.No. (Cl.No.) | Test item | Unit | Technical requirement | Test result | | | | | | | Single item decision |
|-------------------|------------------------------|------|--|-------------|-----------|-----------|-----------|-----------|-----------|------------|----------------------|
| | | | | Subjects | E1 (%) | E2 (%) | E3 (%) | E4 (%) | E5 (%) | TIL (%) | |
| 15 (7.9.1) | Leakage—Total inward leakage | — | At least 46 out of the 50 individual exercise results shall be not greater than 11%; And in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than 8%. | A.R. | | | | | | | Pass |
| | | | | 1 | 2.1 | 3.4 | 3.7 | 7.7 | 3.2 | 4.0 | |
| | | | | 2 | 1.2 | 1.9 | 2.5 | 4.3 | 2.0 | 2.4 | |
| | | | | 3 | 1.9 | 2.8 | 4.3 | 5.6 | 2.3 | 3.4 | |
| | | | | 4 | 2.6 | 4.0 | 5.7 | 6.9 | 3.4 | 4.5 | |
| | | | | 5 | 2.0 | 3.6 | 4.3 | 4.3 | 2.9 | 3.8 | |
| | | | | T.C. | | | | | | | |
| | | | | 6 | 1.8 | 2.9 | 3.9 | 6.5 | 2.4 | 3.5 | |
| | | | | 7 | 2.1 | 3.0 | 4.9 | 5.7 | 2.6 | 3.7 | |
| | | | | 8 | 2.7 | 4.3 | 6.9 | 5.8 | 3.3 | 4.6 | |
| | | | | 9 | 1.9 | 3.6 | 5.7 | 4.2 | 2.8 | 3.6 | |
| | | | | 10 | 3.0 | 4.6 | 5.9 | 5.3 | 3.5 | 4.5 | |

Note 1:
 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
 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.

Table A-1- Test subjects—Facial dimension

| Subject | Face Length(mm) | Face Width(mm) | Face Depth(mm) | Mouth Width(mm) |
|---------|-----------------|----------------|----------------|-----------------|
| 1 | 120 | 130 | 109 | 59 |
| 2 | 122 | 140 | 115 | 65 |
| 3 | 119 | 160 | 139 | 55 |
| 4 | 112 | 122 | 119 | 63 |
| 5 | 110 | 130 | 118 | 60 |
| 6 | 115 | 119 | 110 | 59 |
| 7 | 112 | 123 | 113 | 55 |
| 8 | 103 | 130 | 100 | 50 |
| 9 | 118 | 139 | 130 | 63 |
| 10 | 115 | 129 | 120 | 50 |



Table B- Breathing Resistance

| S.No. (Cl. No.) | Test item | Unit | Technical requirement | Test result | | | | | Single item decision | | |
|-----------------------|-------------------------|------------------------|-----------------------|-------------|-----------------------|---------------------------|-----------------------------|------------------------|----------------------|-------------------------|------|
| | | | | Exercises | Facing directly ahead | Facing vertically upwards | Facing vertically downwards | Lying on the left side | | Lying on the right side | |
| 16 (7.16) | Breathing resistance | Inhalation 30 L/min | mbar | ≤ 0.7 | A.R. | 0.5 | 0.5 | 0.6 | 0.5 | 0.6 | Pass |
| | | | | | | 0.5 | 0.6 | 0.6 | 0.5 | 0.6 | |
| | | | | | | 0.5 | 0.5 | 0.6 | 0.6 | 0.5 | |
| | | | | | S.W. | 0.6 | 0.6 | 0.5 | 0.6 | 0.5 | |
| | | | | | | 0.5 | 0.6 | 0.6 | 0.6 | 0.5 | |
| | | | | | | 0.6 | 0.5 | 0.6 | 0.5 | 0.6 | |
| | | | | | T.C. | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | |
| | | | | | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| | | | | | | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | |
| | Breathing resistance | Inhalation 95 L/min | mbar | ≤ 2.4 | A.R. | 1.5 | 1.5 | 1.6 | 1.5 | 1.6 | Pass |
| | | | | | | 1.5 | 1.5 | 1.5 | 1.6 | 1.5 | |
| | | | | | | 1.5 | 1.6 | 1.5 | 1.6 | 1.5 | |
| | | | | | S.W. | 1.6 | 1.5 | 1.5 | 1.6 | 1.6 | |
| | | | | | | 1.6 | 1.6 | 1.5 | 1.5 | 1.6 | |
| | | | | | | 1.6 | 1.5 | 1.6 | 1.6 | 1.5 | |
| | | | | | T.C. | 1.5 | 1.4 | 1.5 | 1.4 | 1.5 | |
| | | | | | | 1.5 | 1.5 | 1.4 | 1.5 | 1.5 | |
| | | | | | | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | |
| Breathing resistance | Exhalation 160 L/min | mbar | ≤ 3.0 | A.R. | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | Pass | |
| | | | | | 2.9 | 2.9 | 2.8 | 2.8 | 2.9 | | |
| | | | | | 2.9 | 2.8 | 2.9 | 2.8 | 2.9 | | |
| | | | | S.W. | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | | |
| | | | | | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | | |
| | | | | | 2.9 | 2.9 | 2.8 | 2.9 | 2.8 | | |
| | | | | T.C. | 2.9 | 2.8 | 2.8 | 2.8 | 2.8 | | |
| | | | | | 2.9 | 2.9 | 2.8 | 2.8 | 2.9 | | |
| | | | | | 2.8 | 2.9 | 2.9 | 2.8 | 2.8 | | |

Note 1: Limitation may need be changed according to classification, refer to Table 2 — Breathing resistance of EN 149:2001 +A1:2009 for the Technical requirements.

**Table C- Clogging Test—Breathing resistance**

| S.No. | Test item | | Unit | Technical requirement | Test result | | | | | | Single item decision |
|--------------|----------------------|--------------------------------------|------|-----------------------|-------------|-----------------------|---------------------------|-----------------------------|------------------------|-------------------------|----------------------|
| | | | | | Exercises | Facing directly ahead | Facing vertically upwards | Facing vertically downwards | Lying on the left side | Lying on the right side | |
| 17 (7.17) | Clogging test— | Clogging test-Inhalation 95 L/min | mbar | — | A.R. | | | | | | — |
| | | T.C. | | | | | | | | | |
| | Breathing resistance | Clogging test-Exhalation 95 L/min | | — | A.R. | | | | | | — |
| | | T.C. | | | | | | | | | |

Note 1: 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.

Note 2: 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.

Table D- Clogging Test—Penetration of filter material

| S.No. | Test item | | Unit | Technical requirement | Test result | | Single item decision |
|--------------|--------------------------------|-----------------|------|-----------------------|--------------------|--|----------------------|
| 18 (7.17) | Clogging Test— | Sodium chloride | — | — | A.R. ¹⁾ | | — |
| | | | | | T.C. ²⁾ | | |
| | | | | | T.C. ²⁾ | | |
| | Penetration of filter material | Paraffin oil | | | A.R. ¹⁾ | | — |
| | | | | | T.C. ²⁾ | | |
| | | | | | T.C. ²⁾ | | |

Note: ¹⁾ average penetration over a time of 30s, beginning 3 min after the start of the test reported

²⁾ max. penetration during exposure test reported;

Maximum penetration of test aerosol test 95 l/min max. FFP1: 20%, FFP2: 6%, FFP3: 1%

Abbreviations :

A.R. As received

M.S. Mechanical strength

S.W. Simulated wearing treatment

T.C. Temperature conditioned

F.C. Flow conditioned

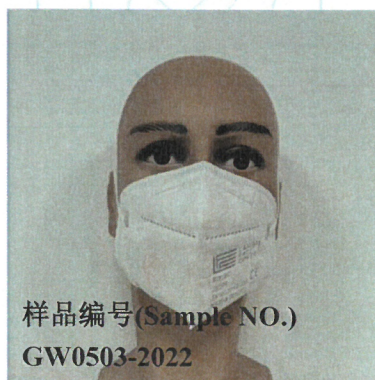
C.D. Cleaning and Disinfecting



Annex A- Estimates of the uncertainty of measurement

| Test item | Uncertainty |
|--|-------------|
| Total inward leakage | 2.98% |
| Penetration of filter material | 1.00% |
| Flammability | 1.00% |
| Carbon dioxide content of the inhalation air | 0.93% |
| Breathing resistance | 1.90% |

Annex B- Sample Photo



————— The end —————

Points For Attention

1. This test report shall not be valid if it is not stamped with this Company special seal or data modification for the test report.
2. Any dissidence with the test results in this report should be submitted to this Company within 15 days from the date of receiving the report.
3. As for entrusted inspection of sample supplied by client, this Company is only responsible for the test results of the sample, which are used to provide the client with a good understanding of the sample quality.
4. This test report shall not be reproduced in any way without permission. The copy of the test report shall be reproduced in full and shall be valid after confirmed by this Company for affixing the special seal of test report.
5. The remaining samples of the test must be taken back within three months or shelf life whichever is shorter from receiving this test report. Those which are overdue to be taken back will be dealt with in accordance with this Company's regulations.

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