

Test Report

No.T32220260508SN-01

Date: Jun 10, 2022

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MASKON LIMITED

ROOM C, 16/F, MG TOWER, 133 HOI BUN ROAD, KWUN TONG, KOWLOON, HONG KONG

This report supersedes all previous documents bearing the test report number T32220260508SN with amendment for client information as requested by client.

The following samples were submitted and identified by/on behalf of the client as:

4-PLY COVID - 19 VIRUS KILLING FACE MASK

Case No. : CA322202640639
 Lot No. : NOT PROVIDED
 Sample Description : WHITE MASK
 Colour : WHITE
 Manufacturer : MASKON LIMITED
 Country of Origin : HONG KONG
 Sample Receiving Date : APR 28, 2022
 Testing Period : APR 28, 2022 – MAY 19, 2022

| Test Requested | Conclusion |
|---|-----------------|
| EN 14683:2019+AC:2019 Medical face masks - Requirements and test methods (Excluded Clause 5.2.6 and Clause 6) | PASS (Type IIR) |

***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
SGS Hong Kong Ltd.



Au Kam Chi, Gigi
Technical Manager

Signed for and on behalf of
SGS Hong Kong Ltd.



Wong Kin Man, Gilman
Technical Development Manager

Signed for and on behalf of
SGS Hong Kong Ltd.



Tsang Chuk Hai
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Test Results:

EN 14683:2019+AC:2019 Medical face masks - Requirements and test methods

Scope : This document specifies construction, design, performance requirements and test methods for medical face masks intended to limit the transmission of infective agents from staff to patients during surgical procedures and other medical settings with similar requirements. A medical face mask with an appropriate microbial barrier can also be effective in reducing the emission of infective agents from the nose and mouth of an asymptomatic carrier or a patient with clinical symptoms. This European Standard is not applicable to masks intended exclusively for the personal protection of staff.

Number of Specimen : 100 pcs of complete product

| <u>Clause</u> | <u>Test Items/requirement</u> | <u>Test Result Summary</u> |
|---------------|---|---|
| 5 | Requirements | |
| 5.1 | General | |
| 5.1.1 | Materials and construction | PASS The mask is composed of a filter layer that is bonded between layers of fabric. The mask was not disintegrated, split or tear during intended use, and no objectionable matter was observed by visual assessment. |
| 5.1.2 | Design | PASS Length: 17.5 cm Width: 9.5 cm (Folded); 15.9 cm (Expanded) |
| 5.2 | Performance requirements | |
| 5.2.2^ | Bacterial filtration efficiency (BFE) | > 98% |
| 5.2.3^ | Breathability (Differential Pressure) | < 60 Pa/cm ² |
| 5.2.4 | Splash resistance | Penetration not seen at 16.0 kPa |
| 5.2.5^ | Microbial cleanliness (Bioburden) | ≤ 30 cfu/g |
| 5.2.6 | Biocompatibility | Not Conducted as per client requested |
| 5.2.7 | Summary of performance requirements | See Table 1 |
| 6 | Marking, labelling and packaging | Not Conducted as per client requested |

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EN 14683:2019+AC:2019 Medical face masks – Requirements and test methods

Table 1 Performance requirements for medical face masks

| Characteristics | Type I ^a | Type II | Type IIR |
|---|---------------------|--------------|----------|
| Bacterial filtration efficiency (BFE), % | ≥ 95 | ≥ 98 | ≥ 98 |
| Differential pressure, Pa/cm ² | < 40 | < 40 | < 60 |
| Splash resistance (kPa) [#] | Not Required | Not Required | ≥ 16.0 |
| Microbial cleanliness (cfu/g) | ≤ 30 | ≤ 30 | ≤ 30 |

^a Type I medical face masks should only be used for patients and other persons to reduce the risk of spread of infections particularly in epidemic or pandemic situations. Type I masks are not intended for use by healthcare professionals in an operating room or in other medical settings with similar requirements.

[#] - An acceptable quality limit of 4,0 % is met for a single sampling plan when 29 or more of the 32 tested specimens show “pass” results.

Note:

[^] Results of compliance for tests requested is justified according to decision rule based on the non-binary statement with guard band (is equal to the expanded measurement uncertainty with a 95% coverage probability, $w = \hat{U}_{95}$) as stated in ILAC-G8:09/2019 Clause 4.2.3.

“Pass – The measured values were observed in tolerance at the points tested. The specific false accept risk is up to 2.5%.”

“Fail – One or more measured values were observed out of tolerance at the points tested”. The specific false reject risk is up to 2.5%.

Result 1 Bacterial filtration efficiency (BFE) (EN14683:2019+AC:2019 Appendix B)

Test Side : White colour without earloop (Inside)
 Pre-Conditioning : Minimum of 4 hours at 21±5°C and 85±5% R.H.
 Dimensions of test specimen : 175 mm x 95 mm
 BFE Test Area : 49 cm²
 BFE Flow Rate : 28.3 l/min
 Test bacteria : Staphylococcus aureus ATCC 6538
 Positive Control Average : 2.1 x 10³ CFU
 Negative Monitor Count : < 1 CFU

| Test Specimen | Percent BFE (%) |
|---------------|-----------------|
| 1 | 99.9% |
| 2 | 99.9% |
| 3 | 99.9% |
| 4 | 99.9% |
| 5 | 99.9% |

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Result 2 Determination of Breathability (EN14683:2019+AC:2019 Appendix C Differential pressure)

Test Side : White colour without earloop (Inside)
 Pre-Conditioning : Minimum of 4 hours at 21±5°C and 85±5% R.H.
 Test Area : 4.9 cm²
 Flow Rate : 8 l/min

| Test Location | ΔP (Pa/cm ²) | | | | |
|---------------|--------------------------|------------|------------|------------|------------|
| | Specimen 1 | Specimen 2 | Specimen 3 | Specimen 4 | Specimen 5 |
| Top Centre | 38.3 | 35.3 | 38.3 | 38.3 | 38.3 |
| Centre | 37.3 | 36.3 | 37.3 | 38.3 | 39.2 |
| Bottom Centre | 30.4 | 41.2 | 37.3 | 41.2 | 41.2 |
| Centre Left | 38.3 | 35.3 | 30.4 | 32.4 | 36.3 |
| Centre Right | 32.4 | 37.3 | 34.3 | 38.3 | 32.4 |
| Average | 35.3 | 37.1 | 35.5 | 37.7 | 37.5 |

Result 3 Splash resistance (ISO 22609:2004)

Test Side : White colour with earloop (Outside)
 Pre-Conditioning : Minimum of 4 hours at 21±5°C and 85±5% R.H.
 Test Condition : 21±5°C and 85±5% R.H.
 Test Pressure : 16.0 kPa (120 mmHg)
 No of Test Specimen Tested : 32
 No of Test Specimen Passed : 32

| Test Specimen # | Synthetic Blood Penetration |
|-----------------|-----------------------------|
| 1-32 | None Seen |

Note:

1. Targeting-plate method was used.
2. Sample was tested in the stage of spreading the pleats out when mounted on the test fixture.

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Result 4 Microbial cleanliness (Bioburden) (EN 14683:2019+AC:2019 Annex D)

Test Methods

Bioburden

The analyses were performed according to EN 14683:2019+AC:2019 Annex D and ISO 11737-1:2018

Test Results

SGS Sample No.: HKHC220400001375-101

| Article Number | Mask Weight | Total Bioburden, cfu/mask | Total Bioburden, cfu/g |
|---------------------|-------------|---------------------------|------------------------|
| 1 | 3.78g | < 6 | < 1.59 |
| 2 | 3.79g | < 6 | < 1.58 |
| 3 | 3.80g | < 6 | < 1.58 |
| 4 | 3.77g | < 6 | < 1.59 |
| 5 | 3.79g | < 6 | < 1.58 |
| Mean: | | < 6 | < 1.6 |
| Recovery Efficiency | | Correction Factor | |
| 43.9% | | 2.3 | |

Microbial Cleanliness (Bioburden): < 3.6 cfu/g

Standard requirement#: ≤30 cfu/g

Note:

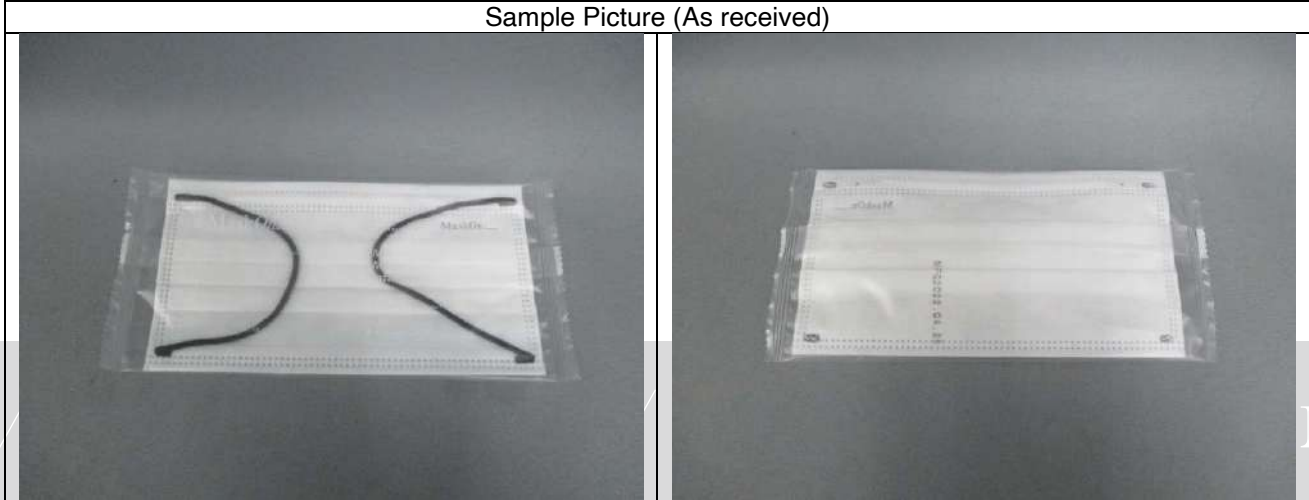
1. Results reported on the submitted sample on an as received basis.
2. < = less than
3. cfu = Colony Forming Units
4. Extraction method: by stomacher at 250rpm for 5 minutes
5. # EN 14683:2019+AC:2019 - Medical face masks - Requirements and test methods – Performance requirements for medical face masks – Microbial cleanliness

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Sample Photo:

Sample Picture (As received)



SGS authenticate the photo on original report only

*** End of Report ***

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