

**Job No./Report No: 21-001659**

**Date: 25/02/2021**

e: CL-1305

The following sample was (were) submitted and identified by the client as:

Serie : <span style="background-color: #e0e0e0; display: inline-block; width: 150px; height: 15px;"></span> Batch No.: <span style="background-color: #e0e0e0; display: inline-block; width: 150px; height: 15px;"></span> Reference No.: <b>ART. 7024 NEO-PLUS/TEJIDO COLOR BLANCO</b> Composition indicated: <b>1ª CAPA: ART.5168 Hidrófugo y antibacteriano + HOT MELT + 2ª CAPA. art. 5154</b>	Job no Report No.: <b>21-001659</b> Receiving Date: <b>12/02/2021</b> Test Start Date: <b>12/02/2021</b> Test End Date: <b>25/02/2021</b> Sample description: <b>RAW MATERIAL (MASK)</b>
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### SUMMARY OF TEST CONCLUSIONS

SOP description	Conclusions
SOP305 - Change of appearance after washing (Garments and fabrics)	Pass
SOP 342- Bacterial Filtration Efficiency (BFE)	Pass
SOP 342- Bacterial Filtration Efficiency (BFE) - After Washing	Pass
SOP106 - Determination of breathability (Differential Pressure) - Original	Pass
SOP106 - Determination of breathability (Differential Pressure) - After Washing	Pass

### Sample Tested



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## SOP305 - Change of appearance after washing (Garments and fabrics)

ID	ID AMSLab	Description	Conclusion
6	S-210212-00187	FABRIC WHITE - 1 LAYER - (AFTER 5 WASHING CYCLES AT 60°C)	Pass
ID	ID AMSLab	Description	Conclusion
7	S-210212-00188	FABRIC WHITE - 1 LAYER - (AFTER 15 WASHING CYCLES AT 60°C)	Pass
ID	ID AMSLab	Description	Conclusion
8	S-210212-00189	FABRIC WHITE - 1 LAYER - (AFTER 30 WASHING CYCLES AT 60°C)	Pass

	CAS	S-210212-00187	S-210212-00188	S-210212-00189
Change of appearance after washing		No change	Slight change	Slight change
Number of cycles		5	15	30
Washing Temperature		60°C	60°C	60°C

**Notes:**

Note 1: Washing and drying process applied based on UNE-EN ISO 6330:2012

**Note 2:**

- Detergent: 20 gr of Commercial detergent / - Drying procedure: Air dry without tumble dry.
- n.a.: not applicable
- Requirement: No obvious change/colour/shape/appearance/seams/embroidery/trimmings/applications

**Note 3 - Meaning of the grades of change of appearance:**

- No change in appearance after washing and drying process
- Slight change in appearance after washing and drying process
- Moderate change in appearance after washing and drying process
- Severe change in appearance after washing and drying process

## SOP 342- Bacterial Filtration Efficiency (BFE)

ID	ID AMSLab	Description	Conclusion
2	S-210212-00183	FABRIC WHITE - 1 LAYER - (ORIGINAL)	Pass

	CAS	S-210212-00183
Test 1: Bacterial Filtration Efficiency		95.9
Test 1: Number of Bacteria		122
Test 2: Bacterial Filtration Efficiency		95.8
Test 2: Number of Bacteria		126
Test 3: Bacterial Filtration Efficiency		95.5
Test 3: Number of Bacteria		134
Test 4: Bacterial Filtration Efficiency		95.7
Test 4: Number of Bacteria		130

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	CAS	S-210212-00183
Test 5: Bacterial Filtration Efficiency		95.5
Test 5: Number of Bacteria		134

**Notes:**

Test Method: EN 14683:2019+AC:2019 (TS EN 14683+AC:2019) Annex-B / Medical Face Masks - Requirements and Test Methods

**Requirements by specifications:**

- Spanish specification UNE 0064:2020:  $\geq 95\%$
- Spanish specification UNE 0065:2020:  $\geq 90\%$
- European specification CWA 17553:2020: Level  $\geq 90\%$  and
- European specification CWA 17553:2020: Level  $\geq 70\%$

**Other requirements:**

- Surgical Mask type I by UNE-EN 14683:  $\geq 95\%$
- Surgical Mask type II by UNE-EN 14683:  $\geq 98\%$
- Surgical Mask type IIR by UNE-EN 14683:  $\geq 98\%$

Report unit Bacterial Filtration Efficiency = %

Report unit Number of Bacteria = cfu/mL

A specimen of the mask material is clamped between a impactor and an aerosol chamber. An aerosol of Staphylococcus aureus is introduced into the aerosol chamber and drawn through the mask material and the impactor under vacuum. The bacterial filtration efficiency of the mask is given by the number of colony forming units passing through the medical face mask material expressed as a percentage of the number of colony forming units present in the challenge aerosol.

Test Flow Rate: 28,3 L/min

Test Flow Time: 2 minute

Sample Sizes: 10x10 cm<sup>2</sup>

Microorganism: Staphylococcus aureus ATCC 6538

Bacterial concentration (cfu/ml): 5x10E5 cfu/ml

Incubation conditions: 24 hour, 35C  $\pm$  2C

Positive control sample average of number of Bacteria (C): 3.0x10E3 cfu/ml

(\*) Test subcontracted and accredited for medical mask tests (EN 14683). Results in subcontracted report number: 21006461

## **SOP 342- Bacterial Filtration Efficiency (BFE) - After Washing**

ID	ID AMSLab	Description	Conclusion
9	S-210212-00190	FABRIC WHITE - 1 LAYER - (AFTER 5 WASHING CYCLES AT 60°C)	Pass
10	S-210212-00191	FABRIC WHITE - 1 LAYER - (AFTER 15 WASHING CYCLES AT 60°C)	Pass
11	S-210212-00192	FABRIC WHITE - 1 LAYER - (AFTER 30 WASHING CYCLES AT 60°C)	Pass

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	CAS	S-210212-00190	S-210212-00191	S-210212-00192
Test 1: Bacterial Filtration Efficiency		93.9	91.7	90.0
Test 1: Number of Bacteria		181	249	299
Test 2: Bacterial Filtration Efficiency		93.7	91.7	90.1
Test 2: Number of Bacteria		188	250	298
Test 3: Bacterial Filtration Efficiency		93.6	91.2	90.1
Test 3: Number of Bacteria		191	263	297
Test 4: Bacterial Filtration Efficiency		93.8	91.2	90.1
Test 4: Number of Bacteria		185	263	296
Test 5: Bacterial Filtration Efficiency		93.7	91.2	90.4
Test 5: Number of Bacteria		189	265	289

Notes:

Test Method: EN 14683:2019+AC:2019 (TS EN 14683+AC:2019) Annex-B / Medical Face Masks - Requirements and Test Methods

Requirements by specifications:

Spanish specification UNE 0064:2020:  $\geq 95\%$

Spanish specification UNE 0065:2020:  $\geq 90\%$

European specification CWA 17553:2020: Level  $\geq 90\%$  and

European specification CWA 17553:2020: Level  $\geq 70\%$

Other requirements:

- Surgical Mask type I by UNE-EN 14683:  $\geq 95\%$

- Surgical Mask type II by UNE-EN 14683:  $\geq 98\%$

- Surgical Mask type IIR by UNE-EN 14683:  $\geq 98\%$

Report unit Bacterial Filtration Efficiency = %

Report unit Number of Bacteria = cfu/mL

A specimen of the mask material is clamped between an impactor and an aerosol chamber. An aerosol of Staphylococcus aureus is introduced into the aerosol chamber and drawn through the mask material and the impactor under vacuum. The bacterial filtration efficiency of the mask is given by the number of colony forming units passing through the medical face mask material expressed as a percentage of the number of colony forming units present in the challenge aerosol.

Test Flow Rate: 28,3 L/min

Test Flow Time: 2 minute

Sample Sizes: 10x10 cm<sup>2</sup>

Microorganism: Staphylococcus aureus ATCC 6538

Bacterial concentration (cfu/ml): 5x10E5 cfu/ml

Incubation conditions: 24 hour, 35C  $\pm$  2C

Positive control sample average of number of Bacteria (C): 3.0x10E3 cfu/ml

(\* Test subcontracted and accredited for medical mask tests (EN 14683). Results in subcontracted report number: 21006462 for sample for 5 washing cycles, 21006463 for sample for 15 washing cycles and 21006464 for sample for 30 washing cycles.

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## SOP106 - Determination of breathability (Differential Pressure) - Original

ID	ID AMSLab	Description	Conclusion
1	S-210212-00182	FABRIC WHITE - 1 LAYER - (ORIGINAL)	Pass

	CAS	S-210212-00182
Average Differential pressure (Pa/cm2)		20
Value 1 Differential pressure (Pa/cm2)		20
Value 2 Differential pressure (Pa/cm2)		21
Value 3 Differential pressure (Pa/cm2)		20
Value 4 Differential pressure (Pa/cm2)		20
Value 5 Differential pressure (Pa/cm2)		19

**Notes:**

Note 1: Applied standard UNE-EN 14683:2019 and Spanish Specification UNE 0064-1, 0064-2, 0065 and European Specification CWA 17553

Note 2: Size of test specimen: 4.9 cm<sup>2</sup>

Note 3: Tested area of the test specimen: 2.5 cm

Note 4: Flow of air: (8 ± 0.2) l/min

Note 5: Velocity of 272 l/m<sup>2</sup>/s or 272 mm/s

Note 6: Report Unit: Pa and P (Pa/cm<sup>2</sup>)

Note 7: Number of samples tested: 5 / Number of measurements: 5

Note 8: Conditioned samples: 4 hours at 21 ± 5 °C and 85 ± 5 HR

Note 9: n.a. = not applicable

**Requirements by specifications:**

- Non-reusable Hygienic Mask by UNE 0064-1-2: < 60 Pa/cm<sup>2</sup>
- Reusable Hygienic Mask by UNE 0065: < 60 Pa/cm<sup>2</sup>
- European specification CWA 17553:2020: <= 70 Pa/cm<sup>2</sup>

**Other requirements:**

- Surgical Mask type I by UNE-EN 14683: < 40 Pa/cm<sup>2</sup>
- Surgical Mask type II by UNE-EN 14683: < 40 Pa/cm<sup>2</sup>
- Surgical Mask type IIR by UNE-EN 14683: < 60 Pa/cm<sup>2</sup>

**Specific Notes:**

(\*\*) The result is out of specifications

## SOP106 - Determination of breathability (Differential Pressure) - After Washing

ID	ID AMSLab	Description	Conclusion
3	S-210212-00184	FABRIC WHITE - 1 LAYER - (AFTER 5 WASHING CYCLES AT 60°C)	Pass
4	S-210212-00185	FABRIC WHITE - 1 LAYER - (AFTER 15 WASHING CYCLES AT 60°C)	Pass
5	S-210212-00186	FABRIC WHITE - 1 LAYER - (AFTER 30 WASHING CYCLES AT 60°C)	Pass

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	CAS	S-210212-00184	S-210212-00185	S-210212-00186
Average Differential pressure (Pa/cm2)		27	32	35
Value 1 Differential pressure (Pa/cm2)		27	31	35
Value 2 Differential pressure (Pa/cm2)		27	33	36
Value 3 Differential pressure (Pa/cm2)		27	32	34
Value 4 Differential pressure (Pa/cm2)		27	33	36
Value 5 Differential pressure (Pa/cm2)		28	32	35

**Notes:**

Note 1: Applied standard UNE-EN 14683:2019 and Spanish Specification UNE 0064-1, 0064-2, 0065 and European Specification CWA 17553

Note 2: Size of test specimen: 4.9 cm<sup>2</sup>

Note 3: Tested area of the test specimen: 2.5 cm

Note 4: Flow of air: (8 ± 0.2) l/min

Note 5: Velocity of 272 l/m<sup>2</sup>/s or 272 mm/s

Note 6: Report Unit: Pa and P (Pa/cm<sup>2</sup>)

Note 7: Number of samples tested: 5 / Number of measurements: 5

Note 8: Conditioned samples: 4 hours at 21 ± 5 °C and 85 ± 5 HR

Note 9: n.a. = not applicable

**Requirements by specifications:**

- Non-reusable Hygienic Mask by UNE 0064-1-2: < 60 Pa/cm<sup>2</sup>
- Reusable Hygienic Mask by UNE 0065: < 60 Pa/cm<sup>2</sup>
- European specification CWA 17553:2020: <= 70 Pa/cm<sup>2</sup>

**Other requirements:**

- Surgical Mask type I by UNE-EN 14683: < 40 Pa/cm<sup>2</sup>
- Surgical Mask type II by UNE-EN 14683: < 40 Pa/cm<sup>2</sup>
- Surgical Mask type IIR by UNE-EN 14683: < 60 Pa/cm<sup>2</sup>

**Specific Notes:**

(\*\*) The result is out of specifications

Issue Date: 25/02/2021

Signed: Manuel Lolo



General Manager

Signed: Pablo Perez



Chemical Lab Manager

Signed: Esteban Ramirez



Physical Lab Manager

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