

Job No./Report No: 20-010136

Date: 05/11/2020

Client: Geisa Fabrics, S.L.

Code: CL-1443

Address: Ramón Llul,S/N VILADECALLS BARCELONA ESPAÑA

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

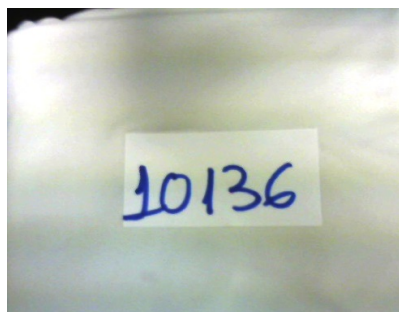
Job no Report No.:	20-010136
Receiving Date:	30/09/2020
Test Start Date:	30/09/2020
Test End Date:	05/11/2020
Sample description:	RAW MATERIAL (MASK)

Serie :
 Batch No.:
 Reference No.: **ART. LINDE/TRES CAPAS/VARIOS**
 Composition indicated: **100% polyester reciclado.**

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
4	S-200930-00070	FABRIC WHITE (AFTER 5 WASHING CYCLES AT 60°C) - 3 LAYERS	Pass
ID	ID AMSLab	Description	Conclusion
7	S-201019-00023	FABRIC WHITE (AFTER 25 WASHING CYCLES AT 60°C) - 3 LAYERS	Pass

	CAS	S-200930-00070	S-201019-00023
Change of appearance after washing		No change	No change
Number of cycles		5	25
Washing Temperature		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-200930-00068	FABRIC WHITE (ORIGINAL) - 3 LAYERS	Pass

	CAS	S-200930-00068
Test 1: Bacterial Filtration Efficiency		91.2
Test 1: Number of Bacteria		220
Test 2: Bacterial Filtration Efficiency		91.0
Test 2: Number of Bacteria		225
Test 3: Bacterial Filtration Efficiency		91.4
Test 3: Number of Bacteria		215
Test 4: Bacterial Filtration Efficiency		90.8
Test 4: Number of Bacteria		230
Test 5: Bacterial Filtration Efficiency		91.4
Test 5: Number of Bacteria		214

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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 cm²

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): 2.5x10E3 cfu/ml

(*) Test subcontracted and accredited for medical mask tests (EN 14683). Results in subcontracted report number: 20036918

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

ID	ID AMSLab	Description	Conclusion
5	S-200930-00071	FABRIC WHITE (AFTER 5 WASHING CYCLES AT 60°C) - 3 LAYERS	Pass
ID	ID AMSLab	Description	Conclusion
8	S-201019-00024	FABRIC WHITE (AFTER 25 WASHING CYCLES AT 60°C) - 3 LAYERS	Pass

	CAS	S-200930-00071	S-201019-00024
Test 1: Bacterial Filtration Efficiency		90.7	90.3
Test 1: Number of Bacteria		233	185
Test 2: Bacterial Filtration Efficiency		90.6	90.6
Test 2: Number of Bacteria		236	179
Test 3: Bacterial Filtration Efficiency		90.4	90.2
Test 3: Number of Bacteria		240	186
Test 4: Bacterial Filtration Efficiency		90.1	90.8
Test 4: Number of Bacteria		248	175
Test 5: Bacterial Filtration Efficiency		90.0	90.9
Test 5: Number of Bacteria		250	173

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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: >=95%
- Spanish specification UNE 0065:2020: >= 90%
- European specification CWA 17553:2020: Level >= 90% and
- European specification CWA 17553:2020: Level >= 70%

Other requirements:

- Surgical Mask type I by UNE-EN 14683: >= 95%
- Surgical Mask type II by UNE-EN 14683: >= 98%
- Surgical Mask type IIR by UNE-EN 14683: >= 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 cm²
 Microorganism: Staphylococcus aureus ATCC 6538
 Bacterial concentration (cfu/ml): 5x10E5 cfu/ml
 Incubation conditions: 24 hour, 35C ± 2C
 Positive control sample average of number of Bacteria (C): 2.5x10E3 cfu/ml for 5 washing cycles and 1.9x10E3 cfu/ml for 25 washing cycles

(*) Test subcontracted and accredited for medical mask tests (EN 14683). Results in subcontracted report number: 20036920 for 5 washing cycles and 20039660 for 25 washing cycles.

SOP106 - Determination of breathability (Differential Pressure) - Original

ID	ID AMSLab	Description	Conclusion
1	S-200930-00067	FABRIC WHITE (ORIGINAL) - 3 LAYERS	Pass

	CAS	S-200930-00067
Average Differential pressure (Pa/cm ²)		36
Value 1 Differential pressure (Pa/cm ²)		36
Value 2 Differential pressure (Pa/cm ²)		35
Value 3 Differential pressure (Pa/cm ²)		38
Value 4 Differential pressure (Pa/cm ²)		36
Value 5 Differential pressure (Pa/cm ²)		37

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 cm²
- 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/m²/s or 272 mm/s
- Note 6: Report Unit: Pa and P (Pa/cm²)
- Note 7: Number of samples tested: 5 / Number of measurements: 5

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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/cm²
- Reusable Hygienic Mask by UNE 0065: < 60 Pa/cm²
- European specification CWA 17553:2020: <= 70 Pa/cm²

Other requirements:

- Surgical Mask type I by UNE-EN 14683: < 40 Pa/cm²
- Surgical Mask type II by UNE-EN 14683: < 40 Pa/cm²
- Surgical Mask type IIR by UNE-EN 14683: < 60 Pa/cm²

Specific Notes:

(**) The result is out of specifications

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

ID	ID AMSLab	Description	Conclusion
3	S-200930-00069	FABRIC WHITE (AFTER 5 WASHING CYCLES AT 60°C) - 3 LAYERS	Pass
ID	ID AMSLab	Description	Conclusion
6	S-201019-00022	FABRIC WHITE (AFTER 25 WASHING CYCLES AT 60°C) - 3 LAYERS	Pass

	CAS	S-200930-00069	S-201019-00022
Average Differential pressure (Pa/cm ²)		48	55
Value 1 Differential pressure (Pa/cm ²)		47	55
Value 2 Differential pressure (Pa/cm ²)		49	54
Value 3 Differential pressure (Pa/cm ²)		46	54
Value 4 Differential pressure (Pa/cm ²)		48	56
Value 5 Differential pressure (Pa/cm ²)		49	54

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 cm²

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/m²/s or 272 mm/s

Note 6: Report Unit: Pa and P (Pa/cm²)

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/cm²
- Reusable Hygienic Mask by UNE 0065: < 60 Pa/cm²
- European specification CWA 17553:2020: <= 70 Pa/cm²

Other requirements:

- Surgical Mask type I by UNE-EN 14683: < 40 Pa/cm²
- Surgical Mask type II by UNE-EN 14683: < 40 Pa/cm²
- Surgical Mask type IIR by UNE-EN 14683: < 60 Pa/cm²

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Specific Notes:

(**) The result is out of specifications

Issue Date: 05/11/2020

Signed: Manuel Lolo



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Applied Mass Spectrometry Laboratory S.L.
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General Manager

Signed: Pablo Perez



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Chemical Lab Manager

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Physical Lab Manager

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