

**Reference:** M2221394  
T2221062 - MODAL/POLYESTER - brown  
T2221063 - TENCEL/POLYESTER - dark purple

**Determination of organo tin compounds**

Date of ending the test 07-11-2022  
Standard used OEKO-TEX® (2022)  
Product standard Standard 100 by Oeko-Tex® (2022)\_Appendix 4  
Deviation from the standard  
Extraction method Ultrasonic extraction with ethanol/acetic acid  
Derivatisation Tetraethylborate  
Analytical method GC-MS/MS  
Compounds See table  
Results  
Determination limit 0,10 mg/kg

Compounds	C (mg/kg)
TBT	< 0.10
TPhT	< 0.10
DBT	< 0.10
DMT	< 0.10
DOT	< 0.10
DPhT	< 0.10
DPT	< 0.10
MBT	< 0.10
MOT	< 0.10
MMT	< 0.10
MPhT	< 0.10
TeBT	< 0.10
TeET	< 0.10
TCyHT	< 0.10
TMT	< 0.10
TOT	< 0.10
TeOT	< 0.10
TPT	< 0.10

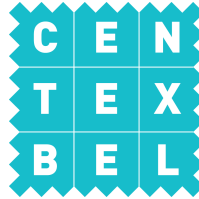


**Reference:** M2221394  
T2221062 - MODAL/POLYESTER - brown  
T2221063 - TENCEL/POLYESTER - dark purple

**Determination of octylphenol, nonylphenol and their ethoxylates**

Date of ending the test 08-11-2022  
Standard used OEKO-TEX® (2022)  
Product standard Standard 100 by Oeko-Tex® (2022)\_Appendix 4  
Deviation from the standard  
Extraction method Ultrasonic extraction with methanol  
Analytical method ESI-LC/MS/MS  
Results  
Determination limit BP, NP, OP, HpP, PeP: 1 mg/kg  
NPEO, OPEO: 10 mg/kg

Compounds	C (mg/kg)
BP	< 1.00
NP	< 1.00
OP	< 1.00
HpP	< 1.00
PeP	< 1.00
NP(EO)	< 10.0
OP(EO)	< 10.0
<b>Sum BP, NP, OP, HpP, PeP</b>	<b>&lt; 2.00</b>
<b>Sum BP, NP, OP, HpP, PeP, NP(EO), OP(EO)</b>	<b>&lt; 20.0</b>



**Reference: T2221063 - TENCEL/POLYESTER - dark purple**

**Determination of the colour fastness to water**

Date of ending the test 14-11-2022  
Standard used OEKO-TEX® (2022)  
Product standard Standard 100 by Oeko-Tex® (2022)\_Appendix 4

Deviation from the standard  
Apparatus Perspirometer

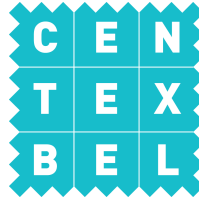
**Results**

**Monofibre**

Numerical rating	
Staining on viscose	5
Staining on polyester	5

Grading against grey scale for change in colour (ISO105 A02) and/or staining (ISO 105 A03):

Use of a 9 point scale from 5 to 1; where 5 is excellent and 1 is poor. Intermediate values like 2-3 are possible.



**Reference: T2221063 - TENCEL/POLYESTER - dark purple**

**Determination of the colour fastness to perspiration**

Date of ending the test 14-11-2022  
 Standard used OEKO-TEX® (2022)  
 Product standard Standard 100 by Oeko-Tex® (2022)\_Appendix 4

Deviation from the standard  
 Apparatus Perspirometer

**Results**

**Monofibre, Alkaline solution**

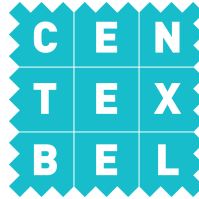
Numerical rating	
Staining on viscose	5
Staining on polyester	5

**Monofibre, Acid solution**

Numerical rating	
Staining on viscose	4-5
Staining on polyester	5

Grading against grey scale for change in colour (ISO105 A02) and/or staining (ISO 105 A03):

Use of a 9 point scale from 5 to 1; where 5 is excellent and 1 is poor. Intermediate values like 2-3 are possible.



**Reference: T2221063 - TENCEL/POLYESTER - dark purple**

**Determination of the colour fastness to rubbing**

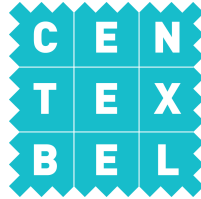
Date of ending the test 14-11-2022  
 Standard used OEKO-TEX® (2022)  
 Product standard Standard 100 by Oeko-Tex® (2022)\_Appendix 4  
 Deviation from the standard -  
 Apparatus Crockmeter  
 Pressure on test specimen 9 N  
 Number of cycles 10  
 Direction Fabrics : direction 1 = warp - direction 2 = weft  
 Non-woven : direction 1 = production - direction 2 = perpendicular to it  
 Manufactured: direction 1 = length - direction 2 = width  
 Yarn and print : only 1 direction

**Results**

Staining on cotton rubbing cloth (dry)	Numerical rating
Direction 1	4-5
Direction 2	4-5

Grading against grey scale for change in colour (ISO105 A02) and/or staining (ISO 105 A03):

Use of a 9 point scale from 5 to 1; where 5 is excellent and 1 is poor. Intermediate values like 2-3 are possible.

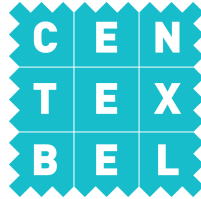


**Reference: T2221063 - TENCEL/POLYESTER - dark purple**

**Determination of formaldehyde**

Date of ending the test 03-11-2022  
Standard used OEKO-TEX® (2022)  
Product standard Standard 100 by Oeko-Tex® (2022)\_Appendix 4  
Deviation from the standard  
Principle Extraction of formaldehyde from the sample at 40 °C,  
reaction with acetylaceton, spectrofotometric determination,  
412 nm. When needed, confirmation with dimedon.  
Calibration At 4 mg/L  
Number of measurements 1  
Results  
Determination limit 16 mg/kg

Results	< 16.0 mg/kg
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**Reference: T2221063 - TENCEL/POLYESTER - dark purple**

**Determination of the pH of an aqueous extract**

Date of ending the test 18-11-2022  
Standard used OEKO-TEX® (2022)  
Product standard Standard 100 by Oeko-Tex® (2022)\_Appendix 4  
Deviation from the standard  
Electrode used Combined glass-electrode

**Results**

pH of the extraction liquid 5.7  
Temperature of the extract in °C 23

Extract	pH
1	5.87
2	5.88
Average	5.9



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**SOUTH KOREA**

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## STANDARD 100 by OEKO-TEX® certification report

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### 1. Subject of Analysis

STANDARD 100 by OEKO-TEX® Certificate – Appendix 4

Commission piece dyeing with natural colorants of 100% cotton, cotton/spandex, cotton/polyester, cotton/polyester/spandex, tencel/spandex, tencel/polyester, modal/spandex, modal/polyester, modal/tencel, 100% nylon, nylon/spandex, nylon/tencel, nylon/rayon, nylon/rayon/spandex, nylon/modal, nylon/modal/polyester, 100% polyester, polyester/cotton, polyester/rayon, polyester/modal, polyester/spandex

Class II





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## 2. Conclusion

The materials with reference

- COTTON - khaki
- MODAL/POLYESTER - brown
- TENCEL/POLYESTER - dark purple
- NYLON/RAYON/SPAN - purple
- POLYESTER/RAYON - yellow

meet the requirements of STANDARD 100 by OEKO-TEX® – Appendix 4, Class II.

Please fill in the attached declaration of conformity and send the signed version back to us.

We would like to ask you to indicate in which language(s) you require the certificate and provide us with the right description in the right language.

Please also make sure that the correct address, as it should be written on the certificate, is mentioned.

As soon as we receive the declaration of conformity, completed and signed, we can proceed with the creation of the certificate.

### 3. Test results

#### Quality name

- mix: COTTON - khaki / NYLON/RAYON/SPAN - purple
- mix: MODAL/POLYESTER - brown / TENCEL/POLYESTER - dark purple
- mix: COTTON - khaki / NYLON/RAYON/SPAN - purple / MODAL/POLYESTER - brown
- COTTON - khaki
- MODAL/POLYESTER - brown
- TENCEL/POLYESTER - dark purple
- NYLON/RAYON/SPAN - purple
- POLYESTER/RAYON - yellow

Detailed information is to be found in: Analysis report 22.05688.01, dd. 22-11-2022

REFERENCE	mix: COTTON - khaki / NYLON/RAYON/SPAN - purple	
Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II	Requirements	Results
Organic tin compounds - TBT	< 1.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TPhT	< 1.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DBT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DMT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DPhT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DPT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - MBT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - MOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - MMT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - MPhT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TeBT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TeET	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TCyHT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TMT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TeOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TPT	< 2.0 mg/kg	< 0.10 mg/kg
BP, NP, OP, HpP, PeP – sum	< 10.0 mg/kg	< 2.00 mg/kg
BP, NP, OP, HpP, PeP, NP(EO), OP(EO) – sum	< 100.0 mg/kg	< 20.0 mg/kg

REFERENCE	mix: MODAL/POLYESTER - brown / TENCEL/POLYESTER - dark purple	
Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II	Requirements	Results
Organic tin compounds - TBT	< 1.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TPhT	< 1.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DBT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DMT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DPhT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - DPT	< 2.0 mg/kg	< 0.10 mg/kg



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Organic tin compounds - MBT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - MOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - MMT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - MPhT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TeBT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TeET	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TCyHT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TMT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TeOT	< 2.0 mg/kg	< 0.10 mg/kg
Organic tin compounds - TPT	< 2.0 mg/kg	< 0.10 mg/kg
BP, NP, OP, HpP, PeP – sum	< 10.0 mg/kg	< 2.00 mg/kg
BP, NP, OP, HpP, PeP, NP(EO), OP(EO) – sum	< 100.0 mg/kg	< 20.0 mg/kg

<b>REFERENCE</b>	<b>mix: COTTON - khaki / NYLON/RAYON/SPAN - purple / MODAL/POLYESTER - brown</b>	
<b>Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II</b>	<b>Requirements</b>	<b>Results</b>
Sum of all Arylamines	< 20.0 mg/kg	< 10.0 mg/kg
Aniline	< 50.0 mg/kg	< 10.0 mg/kg
2-Amino-5-nitrothiazole	Under observation	< 5.00 mg/kg
p-Phenetidine	Under observation	< 5.00 mg/kg
2-Methyl-p-phenyldiamine	Under observation	< 5.00 mg/kg
p-Anisidine	Under observation	< 5.00 mg/kg
3,3'-Diaminobenzidin (biphenyl-3,3',4,4'-tetrayltetraamine)	Under observation	< 5.00 mg/kg

<b>REFERENCE</b>	<b>COTTON - khaki</b>	
<b>Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II</b>	<b>Requirements</b>	<b>Results</b>
pH	4.0 - 7.5	5.6
Metal: Sb	< 30.0 mg/kg	< 1.50 mg/kg
Metal: As	< 1.0 mg/kg	< 0.20 mg/kg
Metal: Pb	< 1.0 mg/kg	< 0.20 mg/kg
Metal: Cd	< 0.1 mg/kg	< 0.05 mg/kg
Metal: Cr	< 2.0 mg/kg	< 0.20 mg/kg
Metal: Co	< 4.0 mg/kg	< 0.10 mg/kg
Metal: Cu	< 50.0 mg/kg	< 1.50 mg/kg
Metal: Ni	< 4.0 mg/kg	< 0.10 mg/kg
Metal: Hg	< 0.02 mg/kg	< 0.02 mg/kg
Metal: Ba	< 1000.0 mg/kg	< 1.50 mg/kg
Metal: Se	< 100.0 mg/kg	< 1.50 mg/kg
Pentachlorophenol (PCP)	< 0.5 mg/kg	< 0.020 mg/kg
Tetrachlorophenol (TeCP, sum)	< 0.5 mg/kg	< 0.020 mg/kg
Trichlorophenol (TrCP, sum)	< 2.0 mg/kg	< 0.020 mg/kg
Dichlorophenol (DCP, sum)	< 3.0 mg/kg	< 0.020 mg/kg
Monochlorophenol (MCP, sum)	< 3.0 mg/kg	< 0.020 mg/kg
Orthophenylphenol (OPP)	< 25.0 mg/kg	< 1.0 mg/kg
Phenol	< 50.0 mg/kg	< 10 mg/kg
Colour fastness to water	3	4-5





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Colour fastness to perspiration - acid	3-4	4-5
Colour fastness to perspiration - alkaline	3-4	4-5
Colour fastness to rubbing - dry	4	4-5

REFERENCE	MODAL/POLYESTER - brown	
Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II	Requirements	Results
pH	4.0 - 7.5	6.0
Metal: Sb	< 30.0 mg/kg	< 1.50 mg/kg
Metal: As	< 1.0 mg/kg	< 0.20 mg/kg
Metal: Pb	< 1.0 mg/kg	< 0.20 mg/kg
Metal: Cd	< 0.1 mg/kg	< 0.05 mg/kg
Metal: Cr	< 2.0 mg/kg	< 0.20 mg/kg
Metal: Co	< 4.0 mg/kg	< 0.10 mg/kg
Metal: Cu	< 50.0 mg/kg	< 1.50 mg/kg
Metal: Ni	< 4.0 mg/kg	< 0.10 mg/kg
Metal: Hg	< 0.02 mg/kg	< 0.02 mg/kg
Metal: Ba	< 1000.0 mg/kg	< 1.50 mg/kg
Metal: Se	< 100.0 mg/kg	< 1.50 mg/kg
Pentachlorophenol (PCP)	< 0.5 mg/kg	< 0.020 mg/kg
Tetrachlorophenol (TeCP, sum)	< 0.5 mg/kg	< 0.020 mg/kg
Trichlorophenol (TrCP, sum)	< 2.0 mg/kg	< 0.020 mg/kg
Dichlorophenol (DCP, sum)	< 3.0 mg/kg	< 0.020 mg/kg
Monochlorophenol (MCP, sum)	< 3.0 mg/kg	< 0.020 mg/kg
Orthophenylphenol (OPP)	< 25.0 mg/kg	< 1.0 mg/kg
Phenol	< 50.0 mg/kg	< 10 mg/kg
Colour fastness to water	3	4-5
Colour fastness to perspiration - acid	3-4	4-5
Colour fastness to perspiration - alkaline	3-4	4-5
Colour fastness to rubbing - dry	4	4-5
Octamethylcyclotetrasiloxane (D4)	< 0.1 %	< 0.010 %
Decamethylcyclopentasiloxane (D5)	< 0.1 %	< 0.010 %
Dodecamethylcyclohexasiloxane (D6)	< 0.1 %	< 0.010 %

REFERENCE	TENCEL/POLYESTER - dark purple	
Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II	Requirements	Results
pH	4.0 - 7.5	5.9
Formaldehyde	< 75.0 mg/kg	< 16.0 mg/kg
Colour fastness to water	3	5
Colour fastness to perspiration - acid	3-4	4-5
Colour fastness to perspiration - alkaline	3-4	5
Colour fastness to rubbing - dry	4	4-5

REFERENCE	NYLON/RAYON/SPAN - purple	
Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II	Requirements	Results
Metal: Sb	< 30.0 mg/kg	< 1.50 mg/kg
Metal: As	< 1.0 mg/kg	< 0.20 mg/kg





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Metal: Pb	< 1.0 mg/kg	< 0.20 mg/kg
Metal: Cd	< 0.1 mg/kg	< 0.05 mg/kg
Metal: Cr	< 2.0 mg/kg	< 0.20 mg/kg
Metal: Co	< 4.0 mg/kg	< 0.10 mg/kg
Metal: Cu	< 50.0 mg/kg	< 1.50 mg/kg
Metal: Ni	< 4.0 mg/kg	< 0.10 mg/kg
Metal: Hg	< 0.02 mg/kg	< 0.02 mg/kg
Metal: Ba	< 1000.0 mg/kg	< 1.50 mg/kg
Metal: Se	< 100.0 mg/kg	< 1.50 mg/kg
Pentachlorophenol (PCP)	< 0.5 mg/kg	< 0.020 mg/kg
Tetrachlorophenol (TeCP, sum)	< 0.5 mg/kg	< 0.020 mg/kg
Trichlorophenol (TrCP, sum)	< 2.0 mg/kg	< 0.020 mg/kg
Dichlorophenol (DCP, sum)	< 3.0 mg/kg	< 0.020 mg/kg
Monochlorophenol (MCP, sum)	< 3.0 mg/kg	< 0.020 mg/kg
Orthophenylphenol (OPP)	< 25.0 mg/kg	< 1.0 mg/kg
Phenol	< 50.0 mg/kg	< 10 mg/kg
Colour fastness to water	3	4-5
Colour fastness to perspiration - acid	3-4	4
Colour fastness to perspiration - alkaline	3-4	4-5
Colour fastness to rubbing - dry	4	5

REFERENCE	POLYESTER/RAYON - yellow	
Test of STANDARD 100 by OEKO-TEX® App. 4 – Class II	Requirements	Results
pH	4.0 - 7.5	5.8
Colour fastness to water	3	5
Colour fastness to perspiration - acid	3-4	5
Colour fastness to perspiration - alkaline	3-4	5
Colour fastness to rubbing - dry	4	5



## 4. Annex

- Analysis report 22.05688.01, dd. 22-11-2022
- Declaration of conformity

Best regards,

Jolien De Leppeleire – Coordinator OEKO-TEX®