

**Twine Solutions Ltd.**  
**7 Hatnufa**  
**Petah Tikva 4951025**  
**Israel**

**HOHENSTEIN** 

Hohenstein Textile Testing Institute GmbH & Co. KG  
Schloss Hohenstein  
74357 Bönningheim  
Germany

# Report no. 22.0009189 Rev. 1

from 12/21/2022

**Your Contact Person** Hochberg, Dana  
([Dana.Hochberg@twine-s.com](mailto:Dana.Hochberg@twine-s.com))  
+972 3 5589505

**Order Date** 11/24/2022

**Period of Testing** 11/24/2022 - 11/29/2022

## Customer Reference

No customer references provided.

**Aim of Test** STANDARD 100 by OEKO-TEX® Annex 4 product class I Edition 01.2022

**Testing Material** Digitally dyed Epic thread- Cyan, Magenta, Yellow and Black

**Sampling** The test object was sent to Hohenstein by the client.

**Our Contact Person** Division Textile Testing  
([testing@hohenstein.de](mailto:testing@hohenstein.de))

## Report Approval



Lale Albayrak-Hindel, B. Eng.  
Teamleiterin | Team Leader Textile Testing

Dr. rer. nat. Christof Madinger  
Chief Operating Officer

## Summary

Passed



Please refer to the test overview for details.

page 6

## Testing Material

### 1 Yarn

Color	Blue
Material composition	PES



1 Yarn

### 2 Yarn

Color	Pink
Material composition	PES

**2 Yarn**



2 Yarn

**3 Yarn**

Color	Yellow
Material composition	PES

**3 Yarn**

3 Yarn

**4 Yarn**

Color	Black
Material composition	PES

4 Yarn



4 Yarn

## Test Overview

pH-Value		
1 Yarn	page 11	✓
2 Yarn	page 11	✓
3 Yarn	page 11	✓
4 Yarn	page 11	✓

  

Formaldehyde		
1 Yarn	page 12	✓
2 Yarn	page 12	✓
3 Yarn	page 12	✓
4 Yarn	page 12	✓

  

Extractable (heavy) metals		
1 Yarn	page 13	✓
2 Yarn	page 13	✓
3 Yarn	page 13	✓
4 Yarn	page 13	✓

  

Organic tin compounds		
1 Yarn	page 14	✓
2 Yarn	page 14	✓
3 Yarn	page 14	✓
4 Yarn	page 14	✓

**Free, cleavable and carcinogenic arylamines, free and cleavable aniline**

1 Yarn	page	15	✓
2 Yarn	page	15	✓
3 Yarn	page	15	✓
4 Yarn	page	15	✓

**Allergenic, carcinogenic and other banned colorants**

1 Yarn	page	17	✓
2 Yarn	page	17	✓
3 Yarn	page	17	✓
4 Yarn	page	17	✓

**Quinoline**

1 Yarn	page	19	✓
2 Yarn	page	19	✓
3 Yarn	page	19	✓
4 Yarn	page	19	✓

**Chlorinated benzenes and toluenes**

1 Yarn	page	20	✓
2 Yarn	page	20	✓
3 Yarn	page	20	✓
4 Yarn	page	20	✓

**Polycyclic aromatic hydrocarbons**

1 Yarn	page	22	✓
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**Polycyclic aromatic hydrocarbons**

2 Yarn	page 22	✓
3 Yarn	page 22	✓
4 Yarn	page 22	✓

**Solvent residues**

2 Yarn	page 24	✓
4 Yarn	page 24	✓

**Surfactant, wetting agent residues, alkyl phenols**

1 Yarn	page 25	✓
2 Yarn	page 25	✓
3 Yarn	page 25	✓
4 Yarn	page 25	✓

**Color fastness to water**

1 Yarn	page 26	✓
2 Yarn	page 26	✓
3 Yarn	page 26	✓
4 Yarn	page 26	✓

**Color fastness to perspiration**

1 Yarn	page 27	✓
2 Yarn	page 27	✓
3 Yarn	page 27	✓
4 Yarn	page 27	✓



**Color fastness to saliva and perspiration**

1 Yarn	page 28	✓
2 Yarn	page 28	✓
3 Yarn	page 28	✓
4 Yarn	page 28	✓

**Chlorinated solvents, volatile organic compounds, glycols and cresols**

1 Yarn	page 29	✓
3 Yarn	page 29	✓

## Revision History

The current revision cancels and replaces the original version of the report and all previous revisions.

Rev.	Date	Approved By	Reason
	12/1/2022	Stefan Bantle, B. Eng.	Initial approval
1	12/21/2022		Change of designation of the test material

## Terms of Use

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## List of abbreviations

n.d. = not detectable

LOQ = Limit of quantitation

## Appendix Table of Contents

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Detail Results

page **11**

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## Detail Results

### pH-Value

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1	2	3	4	LV
pH-value	5.5	5.2	5.2	5.4	$\geq 4.0$ $\leq 7.5$

#### Additional details for this test

#### Parameter hints:

Testing method according to STANDARD 100 by OEKO-TEX®

## Formaldehyde

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1 <sup>C1</sup> [mg/kg]	2 <sup>C1</sup> [mg/kg]	3 <sup>C2</sup> [mg/kg]	4 <sup>C2</sup> [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
Formaldehyde	n.d.	n.d.	n.d.	n.d.	< 10	< 16

### Footnotes

Composite Samples	<b>C1</b> 1, 2 <b>C2</b> 3, 4
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### Additional details for this test

#### Parameter hints:

Testing method according to STANDARD 100 by OEKO-TEX®

#### Result value details:

##### Formaldehyde

n.d. corresponds according to "Japanese Law 112" test method with an absorbance unit less than 0.05 resp. 16 mg/kg.

**Extractable (heavy) metals**

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	<b>1</b> [mg/kg]	<b>2</b> [mg/kg]	<b>3</b> [mg/kg]	<b>4</b> [mg/kg]	<b>LOQ</b> [mg/kg]	<b>LV</b> [mg/kg]
Antimony	n.d.	n.d.	n.d.	n.d.	< 4	< 30
Arsenic	n.d.	n.d.	n.d.	n.d.	< 0.05	< 0.20
Lead	n.d.	n.d.	n.d.	n.d.	< 0.05	< 0.20
Cadmium	n.d.	n.d.	n.d.	n.d.	< 0.05	< 0.10
Chromium	n.d.	n.d.	n.d.	n.d.	< 0.1	< 1.0
Cobalt	n.d.	n.d.	n.d.	n.d.	< 0.1	< 1.0
Copper	n.d.	n.d.	n.d.	n.d.	< 4	< 25
Nickel	n.d.	n.d.	n.d.	n.d.	< 0.10	< 1.00
Mercury	n.d.	n.d.	n.d.	n.d.	< 0.010	< 0.020
Barium	n.d.	n.d.	n.d.	n.d.	< 4	< 1000
Selenium	n.d.	n.d.	n.d.	n.d.	< 4	< 100

**Additional details for this test****Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

**Result value details:****Copper**

No requirement for accessories and yarns made from inorganic materials, respecting the requirements regarding biological active products.

## Organic tin compounds

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1 <sup>C1</sup> [mg/kg]	2 <sup>C1</sup> [mg/kg]	3 <sup>C2</sup> [mg/kg]	4 <sup>C2</sup> [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
Monomethyltin (MMT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Monobutyltin (MBT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Monooctyltin (MOT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Monophenyltin (MPHT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Dimethyltin (DMT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Dipropyltin (DPT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Dibutyltin (DBT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Diocetyl tin (DOT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Diphenyltin (DPHT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Trimethyltin (TMT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Tripropyltin (TPT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Tributyltin (TBT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 0.50
Triocetyl tin (TOT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Triphenyltin (TPHT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 0.50
Tricyclohexyltin (TCyHT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Tetraethyltin (TeET)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Tetrabutyltin (TeBT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00
Tetraocetyl tin (TeOT)	n.d.	n.d.	n.d.	n.d.	< 0.05	< 1.00

### Footnotes

Composite Samples    **C1** 1, 2  
                                  **C2** 3, 4

### Additional details for this test

#### Parameter hints:

Testing method according to STANDARD 100 by OEKO-TEX®

### Free, cleavable and carcinogenic arylamines, free and cleavable aniline

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1 <sup>C1</sup> [mg/kg]	2 <sup>C1</sup> [mg/kg]	3 [mg/kg]	4 [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
4-Aminobiphenyl	n.d.	n.d.	n.d.	n.d.	< 10	< 20
Benzidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4-Chloroaniline	n.d.	n.d.	n.d.	n.d.	< 10	< 20
2,4-Diaminoanisole	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4,4'-Diaminodiphenylmethane	n.d.	n.d.	n.d.	n.d.	< 10	< 20
3,3'-Dichlorobenzidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
3,3'-Dimethoxybenzidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
3,3'-Dimethylbenzidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4,4'-Methylenedi-o-toluidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
p-Cresidine (6-Methoxy-m-toluidine)	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4-Chloro-o-toluidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
2-Naphthylamine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4,4'-Methylene-bis-(2-chloroaniline)	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4,4'-Oxydianiline	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4,4'-Thiodianiline	n.d.	n.d.	n.d.	n.d.	< 10	< 20
o-Toluidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
2,4-Toluylenediamine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
2,4,5-Trimethylaniline	n.d.	n.d.	n.d.	n.d.	< 10	< 20
o-Anisidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
4-Aminoazobenzene	n.d.	n.d.	n.d.	n.d.	< 10	< 20
2,4-Xylidine / 2,6-Xylidine	n.d.	n.d.	n.d.	n.d.	< 10	< 20
Aniline	n.d.	n.d.	n.d.	n.d.	< 10	< 20
2-Methyl-p-phenylenediamine	n.d.	n.d.	n.d.	n.d.	< 10	-
3,3'-Diaminobenzidine (biphenyl-3,3',4,4'-tetrayltetraamine)	n.d.	n.d.	n.d.	n.d.	< 10	-
p-Phenetidine	n.d.	n.d.	n.d.	n.d.	< 10	-
p-Anisidine	n.d.	n.d.	n.d.	n.d.	< 10	-

**Footnotes**

Composite Samples | C1 1, 2

**Additional details for this test****Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

o-Aminoazotoluene is detected indirectly by analysis of o-Toluidine.

2-Amino-4-nitrotoluene is detected indirectly by analysis of 2,4-Toluylenediamine.

**Result value details:****2,4-Xylidine / 2,6-Xylidine**

2,4-Xylidine and 2,6-Xylidine have not been separated analytically, so that the determined value is given for both substances combined.

**2-Methyl-p-phenylendiamine**

2-Methyl-p-phenylendiamine is under observation and the result is provided for information but presently not regulated indeed.

**3,3'-Diaminobenzidine (biphenyl-3,3',4,4'-tetrayltetraamine)**

3,3'-Diaminobenzidine (biphenyl-3,3',4,4'-tetrayltetraamine) is under observation and the result is provided for information but presently not regulated indeed.

**p-Phenetidine**

p-Phenetidine is under observation and the result is provided for information but presently not regulated indeed.

**p-Anisidine**

p-Anisidine is under observation and the result is provided for information but presently not regulated indeed.



**Allergenic, carcinogenic and other banned colorants**

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1 <sup>C1</sup> [mg/kg]	2 <sup>C1</sup> [mg/kg]	3 <sup>C2</sup> [mg/kg]	4 <sup>C2</sup> [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
Acid Violet 49	n.d.	n.d.	n.d.	n.d.	< 10	-
Basic Blue 26	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Basic Green 4 (chloride, free, oxalate)	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Basic Red 9	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Basic Violet 1	n.d.	n.d.	n.d.	n.d.	< 10	-
Basic Violet 3	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Basic Violet 14	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 1	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 3	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 7	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 26	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 35	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 102	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 106	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Blue 124	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Brown 1	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Orange 1	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Orange 3	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Orange 11	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Orange 37/59/76	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Orange 149	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Red 1	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Red 11	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Red 17	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Yellow 1	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Yellow 3	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Yellow 9	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Yellow 23	n.d.	n.d.	n.d.	n.d.	< 10	< 50

	1 <sup>C1</sup> [mg/kg]	2 <sup>C1</sup> [mg/kg]	3 <sup>C2</sup> [mg/kg]	4 <sup>C2</sup> [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
Disperse Yellow 39	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Disperse Yellow 49	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Solvent Yellow 1 (4-Aminoazobenzol / Anilin Yellow)	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Solvent Yellow 2	n.d.	n.d.	n.d.	n.d.	< 10	-
Solvent Yellow 3 (o-Aminoazotoluene)	n.d.	n.d.	n.d.	n.d.	< 10	< 50
Solvent Yellow 14	n.d.	n.d.	n.d.	n.d.	< 10	-
Basic Yellow 2 / Solvent Yellow 34 (hydrochloride and free base)	n.d.	n.d.	n.d.	n.d.	< 10	-

### Footnotes

Composite Samples    **C1** 1, 2  
                                  **C2** 3, 4

### Additional details for this test

#### Parameter hints:

Testing method according to STANDARD 100 by OEKO-TEX®

Acid Red 26, Acid Red 114, Direct Black 38, Direct Blue 6, Direct Blue 15, Direct Blue 218, Direct Brown 95, Direct Red 28, Pigment Red 104 and Pigment Yellow 34 have no value since no direct quantitative analysis is possible.

#### Result value details:

##### Acid Violet 49

Acid Violet 49 has no requirements for Annex 4.

##### Basic Violet 1

Basic Violet 1 has no requirements for Annex 4.

##### Solvent Yellow 2

Solvent Yellow 2 has no requirements for Annex 4.

##### Solvent Yellow 14

Solvent Yellow 14 has no requirements for Annex 4.

##### Basic Yellow 2 / Solvent Yellow 34 (hydrochloride and free base)

Basic Yellow 2 / Solvent Yellow 34 (hydrochloride and free base) is under observation and the result is provided for information but presently not regulated indeed.

## Quinoline

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	<b>1<sup>C1</sup></b> [mg/kg]	<b>2<sup>C1</sup></b> [mg/kg]	<b>3<sup>C2</sup></b> [mg/kg]	<b>4<sup>C2</sup></b> [mg/kg]	<b>LOQ</b> [mg/kg]	<b>LV</b> [mg/kg]
Quinoline	n.d.	n.d.	n.d.	n.d.	< 10	< 50
<b>Footnotes</b>						
Composite Samples	<b>C1</b> 1, 2 <b>C2</b> 3, 4					

### Additional details for this test

#### Parameter hints:

Testing method according to STANDARD 100 by OEKO-TEX®

**Chlorinated benzenes and toluenes**

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	<b>1</b> [mg/kg]	<b>2</b> [mg/kg]	<b>3</b> [mg/kg]	<b>4</b> [mg/kg]	<b>LOQ</b> [mg/kg]	<b>LV</b> [mg/kg]
Chlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,2-Dichlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,3-Dichlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,4-Dichlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,2,3-Trichlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,2,4-Trichlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,3,5-Trichlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,2,3,4-Tetrachlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,2,3,5-Tetrachlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
1,2,4,5-Tetrachlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
Pentachlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
Hexachlorobenzene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2-Chlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
3-Chlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
4-Chlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a-Chlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,3-/3,4-Dichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,4-Dichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,5-/2,6-Dichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
3,5-Dichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a,a-Dichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,3,4-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,3,5-/2,4,5-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,3,6-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,4,6-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
3,4,5-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a,a,a-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a,2,4-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-

	1 [mg/kg]	2 [mg/kg]	3 [mg/kg]	4 [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
a,2,6-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a,3,4-Trichlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,3,4,5-Tetrachlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,3,4,6-Tetrachlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
2,3,5,6-Tetrachlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a,a,a,2-Tetrachlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a,a,a,4-Tetrachlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
a,a,2,6-Tetrachlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
Pentachlorotoluene	n.d.	n.d.	n.d.	n.d.	< 0.10	-
Sum	n.d.	n.d.	n.d.	n.d.	-	< 1.00

**Additional details for this test**

**Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

**Result value details:**

**2,3-/3,4-Dichlorotoluene**

2,3-Dichlorotoluene and 3,4-Dichlorotoluene are not analytically separable, so that the determined value for both substances must be given combined.

**2,5-/2,6-Dichlorotoluene**

2,5-Dichlorotoluene und 2,6-Dichlorotoluene are not analytically separable, so that the determined value for both substances must be given combined.

**2,3,5-/2,4,5-Trichlorotoluene**

2,3,5-Trichlorotoluene und 2,4,5-Trichlorotoluene are not analytically separable, so that the determined value for both substances must be given combined.

**Polycyclic aromatic hydrocarbons**

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1 <sup>C1</sup> [mg/kg]	2 <sup>C1</sup> [mg/kg]	3 <sup>C2</sup> [mg/kg]	4 <sup>C2</sup> [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
Acenaphthene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Acenaphthylene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Anthracene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Benzo[a]anthracene	n.d.	n.d.	n.d.	n.d.	< 0.20	< 0.50
Benzo[b,k,j]fluoranthene	n.d.	n.d.	n.d.	n.d.	< 0.20	< 0.50
Benzo[ghi]perylene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Benzo[a]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	< 0.50
Benzo[e]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	< 0.50
Chrysene	n.d.	n.d.	n.d.	n.d.	< 0.20	< 0.50
Cyclopenta[c,d]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Dibenzo[a,h]anthracene	n.d.	n.d.	n.d.	n.d.	< 0.20	< 0.50
Dibenzo[a,e]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Dibenzo[a,h]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Dibenzo[a,i]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Dibenzo[a,l]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Fluoranthene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Fluorene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Indeno[1,2,3-cd]pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
1-Methylpyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Naphthalene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Phenanthrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Pyrene	n.d.	n.d.	n.d.	n.d.	< 0.20	-
Sum 24 PAHs	n.d.	n.d.	n.d.	n.d.	-	< 5.00

**Footnotes**

Composite Samples    **C1** 1, 2  
                                  **C2** 3, 4

**Additional details for this test**

**Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

**Result value details:**

**Benzo[b,k,j]fluoranthene**

Benzo[b]fluoranthene, benzo[k]fluoranthene and benzo[j]fluoranthene have not been separated analytically and therefore the calculated value for these substances is given in combination.

## Solvent residues

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	<b>2</b> [%]	<b>4</b> [%]	<b>LOQ</b> [%]	<b>LV</b> [%]
1-Methyl-2-pyrrolidone (NMP)	n.d.	n.d.	< 0.010	< 0.050
N,N-Dimethylacetamide (DMAc)	n.d.	n.d.	< 0.010	< 0.050
N,N-Dimethylformamide (DMF)	n.d.	n.d.	< 0.010	< 0.050
Formamide	n.d.	n.d.	< 0.010	< 0.020

**Additional details for this test**

### Parameter hints:

Testing method according to STANDARD 100 by OEKO-TEX®



**Surfactant, wetting agent residues, alkyl phenols**

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1 <sup>C1</sup> [mg/kg]	2 <sup>C1</sup> [mg/kg]	3 <sup>C2</sup> [mg/kg]	4 <sup>C2</sup> [mg/kg]	LOQ [mg/kg]	LV [mg/kg]
4-tert-Butylphenol (BP)	n.d.	n.d.	n.d.	n.d.	< 4.0	-
Pentylphenol (PeP)	n.d.	n.d.	n.d.	n.d.	< 4.0	-
Heptylphenol (HpP)	n.d.	n.d.	n.d.	n.d.	< 4.0	-
Octylphenol (OP)	n.d.	n.d.	n.d.	n.d.	< 4.0	-
Nonylphenol (NP)	n.d.	n.d.	n.d.	n.d.	< 4.0	-
Sum BP, NP, OP, HpP, PeP	n.d.	n.d.	n.d.	n.d.	-	< 10.0
Octylphenoethoxylates (OP(EO))	n.d.	n.d.	n.d.	n.d.	< 4.0	-
Nonylphenoethoxylates (NP(EO))	n.d.	n.d.	n.d.	n.d.	< 4.0	-
Sum BP, NP, OP, HpP, PeP, NP(EO), OP(EO)	n.d.	n.d.	n.d.	n.d.	-	< 100.0

**Footnotes**

Composite Samples	<b>C1</b> 1, 2 <b>C2</b> 3, 4
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**Additional details for this test****Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

**Color fastness to water**

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1	2	3	4	LV
Adjacent fabric 1	Polyester	Polyester	Polyester	Polyester	-
Adjacent fabric 2	Cotton	Cotton	Cotton	Cotton	-
Fastness grade 1	4-5	4-5	4-5	4	(LV1)
Fastness grade 2	4-5	4-5	4-5	4-5	(LV1)
Footnotes					
Leads to failed	<b>(LV1)</b> 1 / 1-2 / 2 / 2-3 / 3				

**Additional details for this test**

**Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

### Color fastness to perspiration

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1	2	3	4	LV
Adjacent fabric 1	Polyester	Polyester	Cotton	Polyester	-
Adjacent fabric 2	Cotton	Cotton	Polyester	Cotton	-
Fastness grade 1 - alkaline	4-5	4-5	4-5	4-5	(LV1)
Fastness grade 2 - alkaline	4-5	4-5	4-5	4-5	(LV1)
Fastness grade 1 - acid	4-5	4-5	4-5	4-5	(LV1)
Fastness grade 2 - acid	4-5	4-5	4-5	4-5	(LV1)

**Footnotes**

Leads to failed **(LV1)** 1 / 1-2 / 2 / 2-3 / 3

**Additional details for this test**

**Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

## Color fastness to saliva and perspiration

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 4 product class I, 01.2022

	1	2	3	4	LV
Rating	fast	fast	fast	fast	(LV1)

### Footnotes

Leads to failed **(LV1)** not fast

### Additional details for this test

#### Parameter hints:

Testing method according to STANDARD 100 by OEKO-TEX®

#### Result value details:

##### Rating

The evaluation "fast" confirms the saliva and perspiration fastness of the sample.

The evaluation "not fast" confirms that the sample is not fast to saliva and perspiration.

**Chlorinated solvents, volatile organic compounds, glycols and cresols**

The following results were evaluated against the limit values (LV): STANDARD 100 by OEKO-TEX® Annex 6 product class I, 01.2022

	<b>1</b> [mg/kg]	<b>3</b> [mg/kg]	<b>LOQ</b> [mg/kg]	<b>LV</b> [mg/kg]
Dichloromethane	n.d.	n.d.	< 0.1	< 1.0
Trichloromethane	n.d.	n.d.	< 0.1	< 1.0
Tetrachloromethane	n.d.	n.d.	< 0.1	< 1.0
1,1-Dichloroethane	n.d.	n.d.	< 0.1	< 1.0
1,2-Dichloroethane	n.d.	n.d.	< 0.1	< 1.0
1,1,1-Trichloroethane	n.d.	n.d.	< 0.1	< 1.0
1,1,2-Trichloroethane	n.d.	n.d.	< 0.1	< 1.0
1,1,1,2-Tetrachloroethane	n.d.	n.d.	< 0.1	< 1.0
1,1,2,2-Tetrachloroethane	n.d.	n.d.	< 0.1	< 1.0
Pentachloroethane	n.d.	n.d.	< 0.1	< 1.0
1,1-Dichloroethylene	n.d.	n.d.	< 0.1	< 1.0
cis-1,2-Dichloroethylene	n.d.	n.d.	< 0.1	-
trans-1,2-Dichloroethylene	n.d.	n.d.	< 0.1	-
Sum 1,2-Dichloroethylene	n.d.	n.d.	-	< 1.0
Trichloroethylene	n.d.	n.d.	< 0.1	< 1.0
Tetra(per)chloroethylene	n.d.	n.d.	< 0.1	< 1.0
Sum of the 14 chlorinated solvents	n.d.	n.d.	-	< 5.0
Methylethylketone	n.d.	n.d.	< 1.0	< 10.0
Ethylbenzene	n.d.	n.d.	< 1.0	< 10.0
m-/p-Xylene	n.d.	n.d.	< 2.0	-
o-Xylene	n.d.	n.d.	< 1.0	-
Sum Xylene	n.d.	n.d.	-	< 10.0
Cyclohexanone	n.d.	n.d.	< 1.0	< 10.0
2-Ethoxyethylacetate	n.d.	n.d.	< 1.0	< 10.0
1,2,3-Trichloropropane	n.d.	n.d.	< 0.1	< 10.0
Acetophenone	n.d.	n.d.	< 1.0	< 10.0
2-Phenyl-2-propanole	n.d.	n.d.	< 1.0	< 10.0
Bis(2-methoxyethyl) ether	n.d.	n.d.	< 1.0	< 10.0

	<b>1</b> [mg/kg]	<b>3</b> [mg/kg]	<b>LOQ</b> [mg/kg]	<b>LV</b> [mg/kg]
Styrene	n.d.	n.d.	< 1.0	< 10.0
Benzene	n.d.	n.d.	< 0.1	< 1.0
Toluene	n.d.	n.d.	< 1.0	< 10.0
2-Ethoxyethanol	n.d.	n.d.	< 1.0	< 10.0
Ethylene glycol dimethyl ether	n.d.	n.d.	< 2.0	< 10.0
Methylglycol	n.d.	n.d.	< 2.0	< 10.0
2-Methoxyethylacetate	n.d.	n.d.	< 1.0	< 10.0
2-Methoxypropylacetate	n.d.	n.d.	< 1.0	< 10.0
Triethylene glycol dimethyl ether	n.d.	n.d.	< 1.0	< 10.0
1,2-Diethoxyethane	n.d.	n.d.	< 1.0	-
2-Methoxypropanol	n.d.	n.d.	< 1.0	-
o-Cresol	n.d.	n.d.	< 1.0	< 10.0
m-/p-Cresol	n.d.	n.d.	< 2.0	< 10.0

**Additional details for this test****Parameter hints:**

Testing method according to STANDARD 100 by OEKO-TEX®

**Result value details:****1,2-Diethoxyethane**

1,2-Diethoxyethane is under observation and the result is provided for information but presently not regulated indeed.

**2-Methoxypropanol**

2-Methoxypropanol is under observation and the result is provided for information but presently not regulated indeed.

**m-/p-Cresol**

m-Cresol and p-cresol have not been separated analytically, so that the determined value for these substances is given combined.