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## Object

Compliance test of relevant parameters to check whether a yarn made of polyester in different colours meet the requirements in STANDARD 100 by OEKO-TEX®, Appendix 4, Product class I.

## Summary

Tested parameters and results (pass or fail) are summarized in Table 1.

## Test Material

1	Polyester thread in colour black
2	Polyester thread in colour magenta
3	Polyester thread in colour yellow
4	Polyester thread in colour cyan
Test material for all colour fastness tests: from test report O100182-167857	
1	Embroidered yarn made of polyester in colour black
2	Embroidered yarn made of polyester in colour magenta
3	Embroidered yarn made of polyester in colour yellow
4	Embroidered yarn made of polyester in colour cyan

The test material was received 2021-08-23

**Table 1.** Tested parameters, pass or fail

Test Material	1 black	2 magenta	3 yellow	4 cyan
pH			pass	
Formaldehyde	pass			
Extractable heavy metals	pass	pass	pass	pass
Extractable Ni after abrasion				
Chromium VI				
Total lead, cadmium, arsenic and mercury				
Pesticides				
Glyphosate and salts				
Chlorinated phenols, phenol and OPP		pass		
Phthalates				
Bisphenol A				
TCEP				
Siloxanes				
Organic tin compounds				pass
Perfluorinated compounds				
Chained chlorinated paraffins (SCCP+MCCP)				
Dimethylfumarate				
ADCA				
Cleavable arylamines		pass		pass
Aniline		pass		pass
Allergenic/carcinogenic disperse dyes	pass	pass	pass	
Quinoline	pass	pass	pass	
Carcinogenic dyes and pigments	pass	pass	pass	
Other banned dyes	pass	pass	pass	
Chlorinated benzenes and toluenes		pass		
Polycyclic aromatic hydrocarbons	pass			
Solvent residues				pass
Benzene				pass
APEO/AP	pass			
UV stabilizers			pass	
Nitrosamines; N-nitrosatable substances				
Colour fastness to water	pass	pass	pass	pass
Colour fastness to perspiration	pass	pass	pass	pass
Colour fastness to rubbing	pass	pass	pass	pass
Colour fastness to saliva /perspiration	pass	pass	pass	pass
VOC, climate chamber				
Odour (SNV 195 651)				
Odour			pass	

d = detected, n.d = not detected

<sup>1</sup>Under observation, presently not regulated

## Procedure and result

The tests was performed according to relevant parts of STANDARD 100 by OEKO-TEX® as prescribed by the OEKO-TEX® Association, except for colour fastness to perspiration and water.

The results for colour fastness to perspiration and water are referred to from test report **O100182-167857**.

The test for colour fastness to perspiration and water was performed with multifibre fabric DW instead of single adjacent fabrics as prescribed by the OEKO-TEX® Association.

The results for colour fastness to rubbing, dry, is referred to from test report **O100182-167857**.

For test results, see Appendix 1.

The tested samples fulfil the requirements in STANDARD 100 by OEKO-TEX®, Appendix 4, Product class I concerning tested parameters.

For all sample (1-4), Antimony (Sb) was detected but below the limit value.

For sample 2, Phenol was detected but below the limit value.

## Comment

This compliance tests shall only be considered as a check regarding if the tested sample/material can reach the requirements in STANDARD 100 by OEKO-TEX®.

The tests report is **not** valid as a certificate and the results do not represent an official STANDARD 100 by OEKO-TEX® compliance, they are only valid for selected parameters for specific lots.

Möln dal, 2021-09-14

RISE IVF



Helena Hjärtnäs  
Project Co-ordinator

## Appendix 1

**Table 1.** pH

Test Material	pH value
3	7.3
<b>Oeko-Tex® limit value Product Class I-II</b>	<b>4.0 – 7.5</b>

**Table 2.** Formaldehyde [mg/kg]

Test Material	Formaldehyde
1	<16
<b>Oeko-Tex® limit value Product Class I</b>	<b>n d<sup>1</sup></b>

<sup>1</sup> n d = not detected (corresponds to Japanese Law, abs. unit <0.5 respectively < 16 mg/kg)

**Table 3.** Extractable metals [mg/kg]

Test Material	Sb	As	Pb	Cd	Cr	Co	Cu	Ni <sup>1</sup>	Hg	Ba	Se
1	8	< 0.1	< 0.1	< 0.05	< 0.3	< 0.3	< 0.3	< 0.3	< 0.02	< 0.3	< 0.3
2	12	< 0.1	< 0.1	< 0.05	< 0.3	< 0.3	< 0.3	< 0.3	< 0.02	< 0.3	< 0.3
3	13	< 0.1	< 0.1	< 0.05	< 0.3	< 0.3	< 0.3	< 0.3	< 0.02	< 0.3	< 0.3
4	21	< 0.1	< 0.1	< 0.05	< 0.3	< 0.3	< 0.3	< 0.3	< 0.02	< 0.3	< 0.3
<b>Oeko-Tex® limit value Product Class I</b>	<b>&lt;30</b>	<b>&lt;0.2</b>	<b>&lt;0.2</b>	<b>&lt;0.1</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;25<sup>2</sup></b>	<b>&lt;1.0</b>	<b>&lt;0.02</b>	<b>&lt;1000</b>	<b>&lt;100</b>

**Table 4.** Chlorinated phenols, Other chemical residues (phenol and Orthophenylphenol (OPP)) [mg/kg] <sup>1</sup>

Test Material	Chlorinated phenols					Other chemical residues	
	PCP	TeCP, sum	TrCP, sum	DCP, sum	MCP, sum	Phenol	OPP
2	< 0.02	< 0.05	< 0.12	< 0.12	< 0.06	10	< 2
<b>Oeko-Tex® limit value Product Class I</b>	<b>&lt;0.05</b>	<b>&lt;0.05</b>	<b>&lt;0.2</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;20</b>	<b>&lt;10</b>

<sup>1</sup> The individual substances are listed in Standard 100 by OEKO-TEX® Appendix 5

**Table 5.** Organic tin compounds [mg/kg]

Test Material	4	Oeko-Tex® limit value Product Class I
TBT	< 0.1	0.5
TPhT	< 0.1	0.5
DBT	< 0.1	1.0
DMT	< 0.1	1.0
DOT	< 0.1	1.0
DPhT	< 0.1	1.0
MMT	< 0.1	1.0
MBT	< 0.1	1.0
MOT	< 0.1	1.0
TeBT	< 0.1	1.0
TCyHT	< 0.1	1.0
TMT	< 0.1	1.0
TOT	< 0.1	1.0
TPT	< 0.1	1.0
DPT	< 0.1	1.0
MPhT	< 0.1	1.0
TeET	< 0.1	1.0

**Table 6.** Colorants (Cleavable cancerogenic arylamines derived from azo colorants [mg/kg]

Test Material	Cleavable arylamines <sup>1,2</sup>	Aniline <sup>1,3</sup>
2	<20	<20
4	<20	<20
<b>Oeko-Tex® limit value Product Class I</b>	< 20	<20

<sup>1</sup> The individual arylamines are listed in Standard 100 by OEKO-TEX® Appendix 5

<sup>2</sup> The sum of cancerogenic arylamine and of possible also as chemical residue present free cancerogenic (same) arylamine.

<sup>3</sup> The sum of cleavable aniline and of possibly also as chemical residue present free aniline

**Table 7.** Colorants, Allergenic, cancerogenic and other banned disperse dyes, cancerogenic dyes (Basic red 9, Basic violet 3) and Other chemical residues, Quinoline [mg/kg]

Test Material	Allergenic and cancerogenic, other banned disperse dyes <sup>1,2</sup>	Cancerogenic dyes (Basic red 9, Basic violet 3) <sup>2</sup>	Quinoline <sup>2</sup>
1	<10	<10	<10
2	<10	<10	<10
3	<10	<10	<10
<b>Oeko-Tex® limit value Product Class I-IV</b>	<50	<50	<50

<sup>1</sup> The individual allergenic and cancerogenic disperse dyes are listed in Standard 100 by OEKO-TEX®, Appendix 5

<sup>2</sup> Disperse Blue 1 (allergenic), Basic Red 9, Basic Violet 3 (cancerogenic) and Quinoline are established CMR substances and will be regulated for textiles in REACH, Annex XVII in November 1, 2020.

**Table 8.** Chlorinated benzenes and toluenes [mg/kg]

Test Material	Sum <sup>1</sup>
2	< 0.01
<b>Oeko-Tex® limit value Product Class I-IV</b>	<1.0

<sup>1</sup> The individual substances are listed in STANDARD 100 by OEKO-TEX® Appendix 5

**Table 9.** Polycyclic aromatic hydrocarbons (PAH) and [mg/kg]

Test Material	1	Oeko-Tex® limit value Product Class I
Benzo[a]pyrene <sup>2,3</sup>	< 0.2	<0.5
Benzo[e]pyrene <sup>2</sup>	< 0.2	<0.5
Benzo[a]anthracene <sup>2,3</sup>	< 0.2	<0.5
Chrysene <sup>2,3</sup>	< 0.2	<0.5
Benzo[b]fluoranthene <sup>2</sup>	< 0.2	<0.5
Benzo[j]fluoranthene <sup>2</sup>	< 0.2	<0.5
Benzo[k]fluoranthene <sup>2,3</sup>	< 0.2	<0.5
Dibenzo[a,h]anthracene <sup>2</sup>	< 0.2	<0.5
Sum 24 PAH <sup>1,4</sup>	< 0.5	<5.0

<sup>1</sup> The individual substances are listed in Standard 100 by OEKO-TEX® Appendix 5

<sup>2</sup> Regulated in REACH, Annex XVII for plastic and rubber parts that may come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity.

Max 0.5 mg/kg for toys and children's articles and max 1 mg/kg for other articles.

<sup>3</sup> Identified as Substances of Very High Concern (SVHC) and are included in the Candidate List. EU and EEA suppliers of articles which contain substances in the Candidate List in a concentration above 0.1% (w/w) (1000 mg/kg) have certain obligations according to the REACH regulation.

Anthracene, Benzo[ghi]perylene, Fluoranthene, Phenanthrene and Pyrene are identified as Substances of Very High Concern (SVHC) and are included in the Candidate List. EU and EEA suppliers of articles which contain substances in the Candidate List in a concentration above 0.1% (w/w) (1000 mg/kg) have certain obligations according to the REACH regulation

**Table 10.** Solvent residues<sup>1</sup> [%, w/w] and Other chemical residues, (mg/kg), (Benzene)

Test Material	NMP	DMAc	DMF	Formamide	Benzene
4	< 0.01	< 0.01	< 0.01	< 0.01	<1
Oeko-Tex® limit value Product Class I-IV	<0.05	<0.05	<0.05	<0.02	<5

<sup>1</sup> The individual substances are listed in STANDARD 100 by OEKO-TEX® Appendix 5.

**Table 11.** Surfactant, wetting agent residues, [mg/kg] (APEO (Alkylphenols and Alkylphenol ethoxylates))

Test Material	NP <sup>1</sup>	OP	HpP,	PeP	NP(EO) <sup>1,2</sup>	OP(EO)
1	< 2.5	< 2.5	< 2.5	< 2.5	< 20	< 20
<b>Oeko-Tex® limit value Product Class I-IV</b>	<b>&lt;10 (sum)</b>				<b>&lt;100 (sum incl NP/OP, HpP, PeP)</b>	

<sup>1</sup> Identified as Substances of Very High Concern and is included in the Candidate List. EU and EEA suppliers of articles which contain substances in the Candidate List in a concentration above 0.1% (w/w) (1000 mg/kg) have certain obligations according to the REACH regulation.

<sup>2</sup> Regulated in REACH, Annex XVII.: Max 0.01% (w/w) (100 mg/kg) since February 2021.

**Table 12.** UV stabilizers [w-%]

Test Material	UV 320 <sup>1</sup>	UV 327 <sup>1</sup>	UV 328 <sup>1</sup>	UV 350 <sup>1</sup>
3	< 0.01	< 0.01	< 0.01	< 0.01
<b>Oeko-Tex® limit value Product Class I-IV</b>	<b>&lt; 0.1</b>	<b>&lt; 0.1</b>	<b>&lt; 0.1</b>	<b>&lt; 0.1</b>

<sup>1</sup> Identified as Substances of Very High Concern and is included in the Candidate List. EU and EEA suppliers of articles which contain substances in the Candidate List in a concentration above 0.1% (w/w) have certain obligations according to the REACH regulation.

**Table 13.** Colour fastness to water (staining)

Test Material	Grey scale (Multifibre DW, co)	Grey scale (Multifibre DW, pes)
1	5	5
2	5	5
3	5	5
4	5	5
<b>Oeko-Tex® limit value Product Class I</b>	<b>3-4</b>	<b>3-4</b>

**Table 14.** Colour fastness to perspiration (staining)

Test Material	Grey scale (Multifibre DW, co)		Grey scale (Multifibre DW, pes)	
	pH 5.5	pH 8.0	pH 5.5	pH 8.0
1	5	5	5	5
2	5	5	5	5
3	5	5	5	5
4	5	5	5	5
<b>Oeko-Tex® limit value Product Class I-IV</b>	<b>3-4</b>	<b>3-4</b>	<b>3-4</b>	<b>3-4</b>

**Table 15.** Colour fastness to rubbing dry (staining)

Test Material	Length	Width
1	4-5	4-5
2	4-5	4-5
3	4-5	4-5
4	4-5	4-5
<b>Oeko-Tex® limit value Product Class I-IV</b>	<b>4</b>	<b>4</b>

**Table 16.** Colour fastness to saliva and perspiration

Test Material	Saliva	Perspiration
1	fast	fast
2	fast	fast
3	fast	fast
4	fast	fast
<b>Oeko-Tex® limit value Product Class I</b>	<b>fast</b>	<b>fast</b>

**Table 17.** Determination of odour

General
no abnormal odour