

Ecully, 17/01/2020

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IFTH reference : DL191014-014

TEST REPORT N° 19-03535 E1 - V1

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PURPOSE OF THE REQUEST

Customer reference :	Date of request : 14/10/2019
Purchase order : ORDRE ACHAT N.19838	Samples supplied on : 12/12/2019
Subject :	N° CE/CL :
	N° CQ :

SAMPLE(S) REFERENCE(S)

19-03535-003 : Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD KANGQIAO 201203 SHANGHAI

19-03535-004 : PRETRAITEMENT : machine n°1

19-03535-004.19-03535-001 : Yellow high visibility vest. 75662 600230756622 / Orange high visibility vest. 75672 3600230756721

19-03535-004.19-03535-002 : Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU ROAD KANGQIAO 201203 SHANGHAI

19-03535-004.19-03535-005 : Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU ROAD KANGQIAO 201203 SHANGHAI

19-03535-006 : PRETRAITEMENT : machine n°2

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles - Determination of pH of aqueous extract
NF EN ISO 3071 (2006)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Type of extraction solution used : KCl solution

pH of the extraction solution : 5,9

Temperature of extraction solution : 24 °C

Testing location : Ecully

Date of the test : 20/12/2019

RESULTS

Epr 1	pH of the aqueous extract	6,97
Epr 2	pH of the aqueous extract	6,96
	Average pH of the aqueous extract	7,0

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles - Determination free and hydrolyzed formaldehyde (water extraction method)
NF EN ISO 14184-1 (2011)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Reception date of the sample : 11/12/2019
Conditions of storage of the samples before the test : In the conditioned laboratory
Conditions of packing of the samples before the test : In the customer packing
Range of the calibration standard : 0,1584 à 6,3360 mg/l
Testing location : Ecully
Date of the test : 19/12/2019

RESULTS

Specimen 1	Weight of the sample	2,50 g
	Results	<16 mg/kg
Specimen 2	Weight of the sample	2,51 g
	Results	<16 mg/kg
	Average	<16 mg/kg

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles - Determination of certain aromatic amines derived from azo colorants
NF EN 14362-1 (2017)**

PROCESS CONDITIONS

Identification method : LC-MS/DAD
Quantification method : LC-MS/MS
Samples test condition : With extraction,
Limit of detection : 5 ppm
Date of receipt sample : 17/12/2019
Testing location : Ecully
Date of the test : 07-09/01/2020

RESULTS

Banned amines according to REACH regulation, Annex XVII (Entry 43)

Aniline (CAS : 62-53-3)

<LQ ppm

<LQ ppm

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles. Bursting properties of fabrics - Hydraulic method
NF EN ISO 13938-1 (1999)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Testing conditions : 20°C ± 2°C, 65% ± 4% RH

Number of specimen : 5

Apparatus : MTS EC 37

Testing surface : 7,3 cm²

Increase speed : 100 cm³/min

Status of specimens : Conditioned

Testing location : Saint-Priest-en-Jarez

Date of the test : 16/12/2019

RESULTS

Epr 1	Pressure	601 kPa
Epr 2	Pressure	578 kPa
Epr 3	Pressure	558 kPa
Epr 4	Pressure	574 kPa
Epr 5	Pressure	610 kPa
	Pressure Average	584 kPa
Epr 1	Distension	14 mm
Epr 2	Distension	14 mm
Epr 3	Distension	14 mm
Epr 4	Distension	14 mm
Epr 5	Distension	15 mm
	Distension Average	14 mm
	Number of bursting close to fixation	0
	Number of rejected tests	0
	Behaviour to bursting	Break in all direction

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to rubbing.
NF EN ISO 105-X12 (2016)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Rubbing peg : With circular area (d=16 ± 0.1 mm)

Force exerted : 9 ± 0,2 N

Type of rubbing : Dry

Testing and conditioning atmosphere : 20°C ± 2°C ; 65 % ± 4 % RH

Duration of conditioning samples and material of friction : >24 h

Testing location : Ecully

Date of the test : 09-10/01/2020

RESULTS

Staining on cotton according the grey scale / rubbing in the longitudinal direction	4
Staining on cotton according the grey scale / rubbing in the transversal direction	4

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to perspiration
NF EN ISO 105-E04 (2013)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Type of adjacent fabric : Multifibers DW

Testing location : Ecully

Date of the test : 07-10/01/2020

RESULTS

Degradation evaluation according the grey scale / Perspiration pH 5,5	5
Degradation evaluation according the grey scale / Perspiration pH 8	5
Staining according the grey scale / Perspiration pH 5,5 on Acetate	4
Staining according the grey scale / Perspiration pH 8 on Acetate	4
Staining according the grey scale / Perspiration pH 5,5 on Cotton	4/5
Staining according the grey scale / Perspiration pH 8 on Cotton	4/5
Staining according the grey scale / Perspiration pH 5,5 on Polyamide	4
Staining according the grey scale / Perspiration pH 8 on Polyamide	4
Staining according the grey scale / Perspiration pH 5,5 on Polyester	4/5
Staining according the grey scale / Perspiration pH 8 on Polyester	4/5
Staining according the grey scale / Perspiration pH 5,5 on Acrylique	4/5
Staining according the grey scale / Perspiration pH 8 on Acrylique	4/5
Staining according the grey scale / Perspiration pH 5,5 on Wool	4/5
Staining according the grey scale / Perspiration pH 8 on Wool	4/5

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to domestic and commercial laundering
NF EN ISO 105-C06 (2010)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Number of the test method used : Cycle C2S - 60°C

Use of steel balls : yes

Souring with acetic acid performed : no

Standard detergent used : ECE with phosphate

Type of adjacent fabric : multifiber TV

Testing location : Ecully

Date of the test : 08-10/01/2020

RESULTS

Grading of change in colour according to the grey scale	5
Grading of staining according to the grey scale Cotton	4
Grading of staining according to the grey scale Polyamide	2/3
Grading of staining according to the grey scale Polyester	3/4
Grading of staining according to the grey scale Acrylic	4/5
Grading of staining according to the grey scale Viscose	4
Grading of staining according to the grey scale Triacetate	3

DETAILS OF RESULTS

19-03535-003

Doublure nid d'abeille, 100% polyester, 100g/m², noire, fournisseur Tractel chine 3500 XIUPU ROAD
KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to hot pressing
NF EN ISO 105-X11 (1996)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Thermal devices with a pressure of : 4 ± 1 kPa

Hot pressing condition : $150^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / dry

Operating amendment : AO_048

Testing location : Ecully

Date of the test : 10/01/2020

RESULTS

Assesment change in colour according the grey scale / Hot pressing	5
Assesment change in colour according the grey scale / Hot pressing 4 hours later	5
Staining according the grey scale / Hot pressing on Cotton	4/5

DETAILS OF RESULTS

19-03535-004

PRETRAITEMENT : machine n°1

**Pre-treatment - Domestic washing and drying for textile
NF EN ISO 6330 (2012)**

PROCESS CONDITIONS

*Type of washing machine : Type A
Type of cycle : Cycle 6N - 60°C - normal agitation
Intermediate drying : No
Testing location : Ecully
Date of the test : 17-18/12/2019*

RESULTS

	Type of detergent	Reference 2 (CEI A*)
Epr 1	Total mass of samples	0,6800 kg
Epr 1	Mass of the load-up	1,3200 kg
	Type of load-up	Type III - 100% polyester
	Number of cycles	5
	Drying method	Method A : Line drying
Epr 1	Number of washing machine used	1

DETAILS OF RESULTS

19-03535-001

Yellow high visibility vest. 75662 600230756622 / Orange high visibility vest. 75672 3600230756721

**Check of the ergonomic characteristics of protective clothings (practical Tries of performance)
NF EN ISO 13688 (2013)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

*Clothing size : M->XL
Height : 165-195 cm
Chest girth : 140 cm
Size of the wearer : Stature:182 cm, tour depoitrine: 119 cm
Testing location : Ecully
Date of the test : 19/12/2019*

RESULTS

Presence of the rough surfaces or other items inside or outside that are likely to cause damage to the user

No

Is it possible to put on and take off the protective clothing without any difficulty ?

Yes

Can the closure, adjustment and restraint systems operate easily ?

Yes

Does the garment protect the part of the body that it covers and is protection maintained when moving ?

Uncertain

Is the protective clothing compatible with other PPE

Not check

Grounds for concluding that a piece of cloth is unacceptable

No prohibitive criteria found

The clothing allows the user moving freely ?

Yes

COMMENTS

DETAILS OF RESULTS

19-03535-001

Yellow high visibility vest. 75662 600230756622 / Orange high visibility vest. 75672 3600230756721

**High-visibility clothing for professional use - Measurement of fluorescent and retroreflective surfaces
NF EN ISO 20471 + A1 (2017)**

PROCESS CONDITIONS

Clothing size : M/XL

Nature of garment : gilet

Testing location : Ecully

Date of the test : 17/12/2019 + 06/01/2020

RESULTS

Chapter 4.1

Basis material

Retroreflective material

Proportion of basis material in the front size of the garment

Width of retroreflective strips

Chapter 4.2

Concerned paragraph

Photo of the garment in the appendix

Material area

0,61 m²

0,14 m²

49 %

50 mm

Requested specific

conceptions

4.2.1

Yes

COMMENTS

DETAILS OF RESULTS

19-03535-001

Yellow high visibility vest. 75662 600230756622 / Orange high visibility vest. 75672 3600230756721

**Textiles - Dimensional change in washing and drying
NF EN ISO 5077 (2008)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Number of item tested : 1
Type of clothing : veste sans manches
Size : T. Unique
Testing location : Ecully
Date of the test : 16/12/2019-06/01/2020

Pre-treatment : 5 Washing NF EN ISO 6330 (2012) Cycle 6N - 60°C - normal agitation

RESULTS

Specimen 1	Location of measurement	Neck size
	Average dimensional change	-1,5 %
Specimen 2	Location of measurement	Right length from armhole to the end of the bottom hem
	Average dimensional change	-2,0 %
Specimen 3	Location of measurement	Left length from armhole to the end of the bottom hem
	Average dimensional change	-3,5 %
Specimen 4	Location of measurement	Right length from shoulder sem /shoulder collar junction to the end of the bottom hem
	Average dimensional change	-0,5 %
Specimen 5	Location of measurement	Left length from shoulder sem/shoulder collar junction to the end of the bottom hem
	Average dimensional change	-0,5 %
Specimen 6	Location of measurement	Back length in center from the neck to the bottom hem
	Average dimensional change	-1,0 %
Specimen 7	Location of measurement	Width of yoke of a sewing of sleeve in the other one
	Average dimensional change	-1,0 %
Specimen 8	Location of measurement	Width mid back under the neck 1
	Average dimensional change	-1,0 %
Specimen 9		

	Location of measurement	Width mid back under the neck 2
Specimen 10	Average dimensional change	-1,0 %
	Location of measurement	Width mid back under the neck 3
	Average dimensional change	-0,5 %

COMMENTS

DETAILS OF RESULTS

19-03535-001

Yellow high visibility vest. 75662 600230756622 / Orange high visibility vest. 75672 3600230756721

**Textiles - Dimensional change in washing and drying
NF EN ISO 5077 (2008)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

*Number of item tested : 1
Type of clothing : veste sans manches
Size : T. Unique
Testing location : Ecully
Date of the test : 16/12/2019-06/01/2020*

Pre-treatment : 5 Washing NF EN ISO 6330 (2012) Cycle 6N - 60°C - normal agitation

RESULTS

Specimen 1	Location of measurement	Neck size
	Average dimensional change	-1,5 %
Specimen 2	Location of measurement	Right length from armhole to the end of the bottom hem
	Average dimensional change	-0,5 %
Specimen 3	Location of measurement	Left length from armhole to the end of the bottom hem
	Average dimensional change	-0,5 %
Specimen 4	Location of measurement	Right length from shoulder sem /shoulder collar junction to the end of the bottom hem
	Average dimensional change	-1,5 %
Specimen 5	Location of measurement	Left length from shoulder sem/shoulder collar junction to the end of the bottom hem
	Average dimensional change	-1,5 %
Specimen 6	Location of measurement	Back length in center from the neck to the bottom hem
	Average dimensional change	-2,0 %
Specimen 7	Location of measurement	Width of yoke of a sewing of sleeve in the other one
	Average dimensional change	-0,5 %
Specimen 8	Location of measurement	Width mid back under the neck 1
	Average dimensional change	-1,0 %
Specimen 9		

	Location of measurement	Width mid back under the neck 2
Specimen 10	Average dimensional change	-1,0 %
	Location of measurement	Width mid back under the neck 3
	Average dimensional change	-1,0 %

COMMENTS

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Determination of pH of aqueous extract
NF EN ISO 3071 (2006)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Type of extraction solution used : KCl solution

pH of the extraction solution : 5,9

Temperature of extraction solution : 24 °C

Testing location : Ecully

Date of the test : 20/12/2019

RESULTS

Epr 1	pH of the aqueous extract	9,38
Epr 2	pH of the aqueous extract	9,38
	Average pH of the aqueous extract	9,4

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Determination free and hydrolyzed formaldehyde (water extraction method)
NF EN ISO 14184-1 (2011)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Reception date of the sample : 11/12/2019
Conditions of storage of the samples before the test : In the conditioned laboratory
Conditions of packing of the samples before the test : In the customer packing
Range of the calibration standard : 0,1584 à 6,3360 mg/l
Testing location : Ecully
Date of the test : 19/12/2019

RESULTS

Specimen 1	Weight of the sample	2,51 g
	Results	<16 mg/kg
Specimen 2	Weight of the sample	2,51 g
	Results	<16 mg/kg
	Average	<16 mg/kg

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Determination of certain aromatic amines derived from azo colorants
NF EN 14362-1 (2017)**

PROCESS CONDITIONS

Identification method : LC-MS/DAD
Quantification method : LC-MS/MS
Samples test condition : Combined method,
Limit of detection : 5 ppm
Date of receipt sample : 17/12/2019
Testing location : Ecully
Date of the test : 07-09/01/2020

RESULTS

Epr 1	Banned amines according to REACH regulation, Annex XVII (Entry 43) Aniline (CAS : 62-53-3)	<LQ ppm <LQ ppm
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DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Maximum tensile force and elongation at maximum force using the strip method
NF EN ISO 13934-1 (2013)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Test Length : 200 mm
Test width : 50 mm
Test speed : 100 mm/min
Pre-force applied : 5 N
Status of specimens : Conditioned
Testing location : Ecully
Date of the test : 10/01/2020

RESULTS

Epr 1	Maximum force in the longitudinal direction	1782,0 N
Epr 2	Maximum force in the longitudinal direction	1858,0 N
Epr 3	Maximum force in the longitudinal direction	1766,0 N
Epr 4	Maximum force in the longitudinal direction	1774,0 N
Epr 5	Maximum force in the longitudinal direction	1814,0 N
	Maximum average force in the longitudinal direction	1799 N
Epr 1	Elongation at maximum force in the longitudinal direction	47,9 %
Epr 2	Elongation at maximum force in the longitudinal direction	48,9 %
Epr 3	Elongation at maximum force in the longitudinal direction	47,4 %
Epr 4	Elongation at maximum force in the longitudinal direction	48,8 %
Epr 5	Elongation at maximum force in the longitudinal direction	47,3 %
	Average Elongation at maximum force in the longitudinal direction	48 %
Epr 1	Maximum force in the transversal direction	1115,0 N
Epr 2	Maximum force in the transversal direction	1110,0 N
Epr 3	Maximum force in the transversal direction	1135,0 N
Epr 4	Maximum force in the transversal direction	1144,0 N
Epr 5	Maximum force in the transversal direction	1191,0 N
	Maximum average force in the transversal direction	1139 N
Epr 1	Elongation at maximum force in the transversal direction	14,8 %
Epr 2	Elongation at maximum force in the transversal direction	14,9 %
Epr 3	Elongation at maximum force in the transversal direction	15,7 %
Epr 4	Elongation at maximum force in the transversal direction	15,8 %
Epr 5	Elongation at maximum force in the transversal direction	16,0 %
	Average Elongation at maximum force in the transversal direction	15 %

COMMENTS

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

High visibility clothing for professional use - Cromaticity coordinates
NF EN ISO 20471 + A1 (2017) / CIE 15

PROCESS CONDITIONS

Testing location : Subcontracted
Date of the test : 07/01/2020
Subcontrator name : STFI

RESULTS

Report Number

2019 3053

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

High visibility clothing for professional use - Chromaticity coordinates
NF EN ISO 20471 + A1 (2017) / CIE 15

PROCESS CONDITIONS

Testing location : Subcontracted

Date of the test : 16/01/2020

Subcontractor name : STFI

Pre-treatment : 5 Washing NF EN ISO 6330 (2012) Cycle 6N - 60°C - normal agitation

RESULTS

Report Number

2019 3085 correction

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

High-visibility clothing for professional use - Light ageing
NF EN ISO 20471 + A1 (2017) Xénon

PROCESS CONDITIONS

Date of the test : 07/01/2020
Subcontractor name : STFI
Testing location : Subcontracted

RESULTS

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**High visibility clothing for professional use - Chromaticity coordinates
NF EN ISO 20471 + A1 (2017) / CIE 15**

PROCESS CONDITIONS

Testing location : Subcontracted

Date of the test : 07/01/2020

Subcontractor name : STFI

Pre-treatment : Hours of light ageing NF EN ISO 20471 + A1 (2017) Xénon

RESULTS

Report Number

2019 3053

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to rubbing.
NF EN ISO 105-X12 (2016)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Rubbing peg : With circular area (d=16 ± 0.1 mm)

Force exerted : 9 ± 0,2 N

Type of rubbing : Dry

Testing and conditioning atmosphere : 20°C ± 2°C ; 65 % ± 4 % RH

Duration of conditioning samples and material of friction : >24 h

Testing location : Ecully

Date of the test : 09-10/01/2020

RESULTS

Staining on cotton according the grey scale / rubbing in the longitudinal direction	5
Staining on cotton according the grey scale / rubbing in the transversal direction	5

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to perspiration
NF EN ISO 105-E04 (2013)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Type of adjacent fabric : Multifibers DW

Testing location : Ecully

Date of the test : 07-10/01/2020

RESULTS

Degradation evaluation according the grey scale / Perspiration pH 5,5	5
Degradation evaluation according the grey scale / Perspiration pH 8	5
Staining according the grey scale / Perspiration pH 5,5 on Acetate	4/5
Staining according the grey scale / Perspiration pH 8 on Acetate	4/5
Staining according the grey scale / Perspiration pH 5,5 on Cotton	4/5
Staining according the grey scale / Perspiration pH 8 on Cotton	4/5
Staining according the grey scale / Perspiration pH 5,5 on Polyamide	4/5
Staining according the grey scale / Perspiration pH 8 on Polyamide	4/5
Staining according the grey scale / Perspiration pH 5,5 on Polyester	4/5
Staining according the grey scale / Perspiration pH 8 on Polyester	4/5
Staining according the grey scale / Perspiration pH 5,5 on Acrylique	5
Staining according the grey scale / Perspiration pH 8 on Acrylique	5
Staining according the grey scale / Perspiration pH 5,5 on Wool	5
Staining according the grey scale / Perspiration pH 8 on Wool	5

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to domestic and commercial laundering
NF EN ISO 105-C06 (2010)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Number of the test method used : Cycle C2S - 60°C

Use of steel balls : yes

Souring with acetic acid performed : no

Standard detergent used : ECE with phosphate

Type of adjacent fabric : multifiber TV

Testing location : Ecully

Date of the test : 08-10/01/2020

RESULTS

Grading of change in colour according to the grey scale	5
Grading of staining according to the grey scale Cotton	4/5
Grading of staining according to the grey scale Polyamide	3/4
Grading of staining according to the grey scale Polyester	5
Grading of staining according to the grey scale Acrylic	5
Grading of staining according to the grey scale Viscose	4/5
Grading of staining according to the grey scale Triacetate	4/5

DETAILS OF RESULTS

19-03535-002

Matière de base fluo, toile 80% polyester 20% coton, jaune, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to hot pressing
NF EN ISO 105-X11 (1996)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Thermal devices with a pressure of : 4 ± 1 kPa

Hot pressing condition : $150^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / dry

Operating amendment : AO_048

Testing location : Ecully

Date of the test : 10/01/2020

RESULTS

Assesment change in colour according the grey scale / Hot pressing	5
Assesment change in colour according the grey scale / Hot pressing 4 hours later	5
Staining according the grey scale / Hot pressing on Cotton	5

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Determination of pH of aqueous extract
NF EN ISO 3071 (2006)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Type of extraction solution used : KCl solution

pH of the extraction solution : 5,9

Temperature of extraction solution : 24 °C

Testing location : Ecully

Date of the test : 20/12/2019

RESULTS

Epr 1	pH of the aqueous extract	6,95
Epr 2	pH of the aqueous extract	6,96
	Average pH of the aqueous extract	7,0

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Determination free and hydrolyzed formaldehyde (water extraction method)
NF EN ISO 14184-1 (2011)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Reception date of the sample : 11/12/2019
Conditions of storage of the samples before the test : In the conditioned laboratory
Conditions of packing of the samples before the test : In the customer packing
Range of the calibration standard : 0,1584 à 6,3360 mg/l
Testing location : Ecully
Date of the test : 19/12/2019

RESULTS

Specimen 1	Weight of the sample	2,50 g
	Results	<16 mg/kg
Specimen 2	Weight of the sample	2,52 g
	Results	<16 mg/kg
	Average	<16 mg/kg

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Determination of certain aromatic amines derived from azo colorants
NF EN 14362-1 (2017)**

PROCESS CONDITIONS

Identification method : LC-MS/DAD

Quantification method : LC-MS/MS

Samples test condition : Combined method,

Limit of detection : 5 ppm

Date of receipt sample : 17/12/2019

Testing location : Ecully

Date of the test : 07-09/01/2020

RESULTS

Banned amines according to REACH regulation, Annex XVII (Entry 43)

Aniline (CAS : 62-53-3)

<LQ ppm

<LQ ppm

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

High visibility clothing for professional use - Chromaticity coordinates
NF EN ISO 20471 + A1 (2017) / CIE 15

PROCESS CONDITIONS

Testing location : Subcontracted
Date of the test : 07/01/2020
Subcontractor name : STFI

RESULTS

Report Number

2019 3053

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**High visibility clothing for professional use - Chromaticity coordinates
NF EN ISO 20471 + A1 (2017) / CIE 15**

PROCESS CONDITIONS

*Testing location : Subcontracted
Date of the test : 16/01/2020
Subcontractor name : STFI*

Pre-treatment : 5 Washing NF EN ISO 6330 (2012) Cycle 6N - 60°C - normal agitation

RESULTS

Report Number

2019 3085 correction

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

High-visibility clothing for professional use - Light ageing
NF EN ISO 20471 + A1 (2017) Xénon

PROCESS CONDITIONS

Date of the test : 07/01/2020

Subcontractor name : STFI

Testing location : Subcontracted

RESULTS

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**High visibility clothing for professional use - Chromaticity coordinates
NF EN ISO 20471 + A1 (2017) / CIE 15**

PROCESS CONDITIONS

*Testing location : Subcontracted
Date of the test : 07/01/2020
Subcontractor name : STFI*

Pre-treatment : Hours of light ageing NF EN ISO 20471 + A1 (2017) Xénon

RESULTS

Report Number

2019 3053

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to rubbing.
NF EN ISO 105-X12 (2016)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

*Rubbing peg : With circular area (d=16 ± 0.1 mm)
Force exerted : 9 ± 0,2 N
Type of rubbing : Dry
Testing and conditioning atmosphere : 20°C ± 2°C ; 65 % ± 4 % RH
Duration of conditioning samples and material of friction : >24 h
Testing location : Ecully
Date of the test : 09-10/01/2020*

RESULTS

Staining on cotton according the grey scale / rubbing in the longitudinal direction	5
Staining on cotton according the grey scale / rubbing in the transversal direction	5

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to perspiration
NF EN ISO 105-E04 (2013)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Type of adjacent fabric : Multifibers DW

Testing location : Ecully

Date of the test : 07-10/01/2020

RESULTS

Degradation evaluation according the grey scale / Perspiration pH 5,5	5
Degradation evaluation according the grey scale / Perspiration pH 8	5
Staining according the grey scale / Perspiration pH 5,5 on Acetate	3/4
Staining according the grey scale / Perspiration pH 8 on Acetate	4
Staining according the grey scale / Perspiration pH 5,5 on Cotton	3/4
Staining according the grey scale / Perspiration pH 8 on Cotton	3/4
Staining according the grey scale / Perspiration pH 5,5 on Polyamide	2/3
Staining according the grey scale / Perspiration pH 8 on Polyamide	2/3
Staining according the grey scale / Perspiration pH 5,5 on Polyester	3/4
Staining according the grey scale / Perspiration pH 8 on Polyester	3/4
Staining according the grey scale / Perspiration pH 5,5 on Acrylique	4
Staining according the grey scale / Perspiration pH 8 on Acrylique	4
Staining according the grey scale / Perspiration pH 5,5 on Wool	3/4
Staining according the grey scale / Perspiration pH 8 on Wool	3/4

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to domestic and commercial laundering
NF EN ISO 105-C06 (2010)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Number of the test method used : Cycle C2S - 60°C

Use of steel balls : yes

Souring with acetic acid performed : no

Standard detergent used : ECE with phosphate

Type of adjacent fabric : multifiber TV

Testing location : Ecully

Date of the test : 08-10/01/2020

RESULTS

Grading of change in colour according to the grey scale	5
Grading of staining according to the grey scale Cotton	3/4
Grading of staining according to the grey scale Polyamide	1
Grading of staining according to the grey scale Polyester	3
Grading of staining according to the grey scale Acrylic	4
Grading of staining according to the grey scale Viscose	3/4
Grading of staining according to the grey scale Triacetate	2

DETAILS OF RESULTS

19-03535-005

Matière de base fluo, toile 80% polyester 20% coton, orange, 245 g/m², fournisseur Tractel chine 3500 XIUPU
ROAD KANGQIAO 201203 SHANGHAI

**Textiles - Colour fastness to hot pressing
NF EN ISO 105-X11 (1996)**

Test carried out according to COFRAC accreditation

PROCESS CONDITIONS

Thermal devices with a pressure of : 4 ± 1 kPa

Hot pressing condition : $150^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / dry

Operating amendment : AO_048

Testing location : Ecully

Date of the test : 10/01/2020

RESULTS

Assesment change in colour according the grey scale / Hot pressing	5
Assesment change in colour according the grey scale / Hot pressing 4 hours later	5
Staining according the grey scale / Hot pressing on Cotton	5

DETAILS OF RESULTS

19-03535-006

PRETRAITEMENT : machine n°2

**Pre-treatment - Domestic washing and drying for textile
NF EN ISO 6330 (2012)**

PROCESS CONDITIONS

Type of washing machine : Type A
Type of cycle : Cycle 6N - 60°C - normal agitation
Intermediate drying : No
Testing location : Ecully
Date of the test : 17-18/12/2019

RESULTS

	Type of detergent	Reference 2 (CEI A*)
Epr 1	Total mass of samples	0,6700 kg
Epr 2	Total mass of samples	0,6700 kg
Epr 1	Mass of the load-up	1,3300 kg
Epr 2	Mass of the load-up	1,3300 kg
	Type of load-up	Type III - 100% polyester
	Number of cycles	5
	Drying method	Method A : Line drying
Epr 1	Number of washing machine used	1
Epr 2	Number of washing machine used	1

COMMENTS

Cécile VALLON
Laoratory Manager



Versions

Version 1 : Report creation

I.F.T.H. service clientèle

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Number of pages : 40 Appendices : 3

If test reports, interpretation reports, comments, advice or observations are translated into a foreign language, only the version in French is valid.

« The uncertainty associated to the result was not explicitly taken in consideration to declare the conformity to the specification. Conformities are given only for the results associated to a specification. Results of this test report are only valid for specimens subjected to testing at IFTH. »

* End of report *