

TEST REPORT

2024CN0980

DATE OF RECEPTION

Date Format: dd/MM/yyyy 19/08/2024

DATE OF TESTS

Starting : 04/09/2024

Ending: 16/09/2024

APPLICANT

KUNSHAN SUNSHINETEX NEW MATERIAL Co. Ltd.

No. 417 Sanxiang Road ndustry Zone

CN-215300 Kunshan

JIANGSU

China

REFERENCE OF SAMPLES

Reference by AITEX	Reference by customer	AITEX sample description
2024CN0798-S01	POBFD3XY	Fabric

TESTS CARRIED OUT

- PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING
- DETERMINATION OF HEAT RESISTANCE 180°C
- LIMITED FLAME SPREAD
- DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING
- DETERMINATION OF THE HEAT TRANSMISSION ON EXPOSURE TO FLAME
- DETERMINATION OF BEHAVIOUR ON EXPOSURE TO A SOURCE OF RADIANT HEAT
- DETERMINATION OF BEHAVIOUR OF MATERIALS ON IMPACT SPLASHES OF MOLTEN METAL - ALUMINIUM
- DETERMINATION OF THE CONTACT HEAT TRANSMISSION

Tests marked with * are not included within the scope of the accreditation.





DESCRIPTION OF SAMPLES



Reference by AITEX: 2024CN0798-S01

Reference by customer:

POBFD3XY

AITEX sample description:

Fabric

Information supplied by the customer

0.8% Polyamide,32.9% cotton, 48.2% modacrylic, 18.1% polyester

Weight: 380gsm

Color: Grey/Navy/Black/HV-yellow/HV-orange

AITEX Subsamples		Subsample Description	
2024CN0798-S01_P1		POBFD3XY Fabric After 5 cycles	



EXECUTIVE SUMMARY

EN ISO 11612:2015	Reference	Test/Standard	Result
	2024CN0798-S01_P1	DETERMINATION OF HEAT RESISTANCE 180°C ISO 17493:2016	PASS
		DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING EN ISO 5077:2008	PASS
		DETERMINATION OF THE HEAT TRANSMISSION ON EXPOSURE TO FLAME EN ISO 9151:2016	B1
		DETERMINATION OF BEHAVIOUR ON EXPOSURE TO A SOURCE OF RADIANT HEAT EN ISO 6942:2022	C2
		DETERMINATION OF BEHAVIOUR OF MATERIALS ON IMPACT SPLASHES OF MOLTEN METAL - ALUMINIUM EN ISO 9185:2007	D2
		DETERMINATION OF THE CONTACT HEAT TRANSMISSION EN ISO 12127-1:2015	F2
	2024CN0798-S01+ 2024CN0798-S01_P1	LIMITED FLAME SPREAD EN ISO 15025:2016 Met.A	A1



REQUIREMENT SUMMARY

DETERMINATION OF HEAT RESISTANCE 180°C

REQUIREMENT ACCORDING EN ISO 11612:2015

Fabric

No layer can melt and/or drip.

At 180°C not layer shrink by more than 5%.

Not layer must ignite.

Hardware

No hardware/strip/seam shall ignite or melt

Closures opens

LIMITED FLAME SPREAD

REQUIREMENT ACCORDING EN ISO 11612:2015

- No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge
- No specimen shall give flaming or molten debris
- The afterglow time of each sample shall be ≤ 2 s. Any afterglow shall not spread from the carbonised area to the undamaged area after the cessation of flaming.
- For Method A, no specimen shall give hole formation of 5 mm or greater in any direction.
- The after flame time of each sample shall be ≤ 2 s

DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING

REQUIREMENT ACCORDING EN ISO 11612:2015

The dimensional change shall not exceed $\pm 3\%$, both in width warp and in length weft.

The dimensional change of knitted fabrics shall not exceed $\pm 5\%$, both in width Crosswise and in length Lengthwise.



DETERMINATION OF THE HEAT TRANSMISSION ON EXPOSURE TO FLAME

REQUIREMENT ACCORDING EN ISO 11612:2015

Performance level	Range of HTI ^a 24 values (s)	
	Minimum	Maximum
B1	4.0 < 10.0	
B2	10.0 < 20.0	
B3	20.0	

^a: Heat transfer index, as defined in ISO 9151:1995

DETERMINATION OF BEHAVIOUR ON EXPOSURE TO A SOURCE OF RADIANT HEAT

REQUIREMENT ACCORDING EN ISO 11612:2015

Performance level	Heat transfer level t ₂₄ (s)
C1	≥ 7
C2	≥ 20
C3	≥ 50
C4	≥ 95

DETERMINATION OF BEHAVIOUR OF MATERIALS ON IMPACT SPLASHES OF MOLTEN METAL - ALUMINIUM

REQUIREMENT ACCORDING EN ISO 11612:2015

Performance level	Molten aluminum (g)
D1	100 < 200
D2	200 < 350
D3	≥ 350



**DETERMINATION OF THE CONTACT HEAT TRANSMISSION
REQUIREMENT ACCORDING EN ISO 11612:2015**

Performance level	Threshold Time Ts (s)	
	Minimum	Maximum
F1	5	< 10
F2	10	< 15
F3	15	



RESULTS

PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

Standard

EN ISO 6330:2021

Test date

Start date04/09/2024End date05/09/2024

Washing procedure

6N

Washing temperature

60°C

Washing cycles

5

Dryer type

James Heal

Drying procedure

F (type A1 tumble drying)

Washing powder

Reference detergent 3

Reference

2024CN0798-S01

Units	Dry mass of the samples(Kg)	Counterweight mass(Kg)	Counterweight type	Equipment
1	1.8	0.2	Type III	WASCATOR
2	1.3	0.7	Type III	WASCATOR
3	1.75	0.25	Type III	WASCATOR
4	1.3	0.7	Type III	WASCATOR

The test was carried out at laboratory located at Carretera Banyeres 10 - 03802 Alcoi, Alicante

Reference	Description
2024CN0798-S01	POBFD3XY



RESULTS

DETERMINATION OF HEAT RESISTANCE 180°C

Standard

ISO 17493:2016

Equipment

Air stove

Test date

Start date11/09/2024End date16/09/2024

Temperature

(180 ± 5)°C

Length of the test

5 min (+0,15/-0) min

Uncertainty

± 1 %

Reference

2024CN0798-S01_P1

Ignition	Melting	Direction		Shrink(-) Elongation(+)
NO	NO		Warp	-3%
			Weft	-2%
NO	NO		Warp	-3%
			Weft	-2%
NO	NO		Warp	-3%
			Weft	-2%

The test was carried out at laboratory located at Carretera Banyeres 10 - 03802 Alcoi, Alicante

Reference	Description
2024CN0798-S01_P1	POBFD3XY Fabric After 5 cycles



RESULTS

LIMITED FLAME SPREAD

Standard

EN ISO 15025:2016 Met.A

Equipment

Equipment for determination of limited flame spread

Test date

Start date	11/09/2024	End date	13/09/2024
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Conditioned date

Start date	3/9/2024	End date	9/9/2024
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Conditioned

24h in indoor ambient conditions at (20 ± 2) °C and (65 ± 5) % RH

Gas used

Propane gas

Face exposed to the flame

Outer



Reference

2024CN0798-S01

Atmosphere for testing

Temperature 22.2 °C

Relative Humidity

46.6 %

Direction	Warp			Weft		
Flaming to top or either side edge	NO	NO	NO	NO	NO	NO
Post- After flame (s)	0	0	0	0	0	0
Afterglow time (s)	0	0	0	0	0	0
Melting	NO	NO	NO	NO	NO	NO
Loose waste	NO	NO	NO	NO	NO	NO
Inflammation of the filter paper detached from waste	NO	NO	NO	NO	NO	NO
Hole formation	NO	NO	NO	NO	NO	NO

Reference

2024CN0798-S01_P1

Atmosphere for testing

Temperature 21.1 °C

Relative Humidity

59.2 %

Direction	Warp			Weft		
Flaming to top or either side edge	NO	NO	NO	NO	NO	NO
Post- After flame (s)	0	0	0	0	0	0
Afterglow time (s)	0	0	0	0	0	0
Melting	NO	NO	NO	NO	NO	NO
Loose waste	NO	NO	NO	NO	NO	NO
Inflammation of the filter paper detached from waste	NO	NO	NO	NO	NO	NO
Hole formation	NO	NO	NO	NO	NO	NO

Uncertainty

The uncertainty of the assay of limited flame spread is $\pm 2\%$ of the value measured

Reference	Description
2024CN0798-S01	POBFD3XY
2024CN0798-S01_P1	POBFD3XY Fabric After 5 cycles



RESULTS

DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING

Standard

EN ISO 5077:2008

Preparation, marking and measuring of fabric specimens according to EN ISO 3759:2011

Start date04/09/2024End date10/09/2024

Equipment

Wascator type A-Horizontal drum, front loading

Washing cycles

5

Uncertainty

± 0.4 %

Reference

2024CN0798-S01_P1

Specimen	Direction	Dimensional change (%)
1	WARP	-2.0
	WEFT	-1.0

Note

Positive dimensional change indicates lengthening. Negative dimensional change indicates shrinkage

The test was carried out at laboratory located at Carretera Banyeres 10 - 03802 Alcoi, Alicante

Reference	Description
2024CN0798-S01_P1	POBFD3XY Fabric After 5 cycles



RESULTS

DETERMINATION OF THE HEAT TRANSMISSION ON EXPOSURE TO FLAME

Standard

EN ISO 9151:2016

Equipment

Equipment for the determination of convective heat

Testing Method

Method B

Conditioned24h in indoor ambient conditions at (20 ± 2) °C and (65 ± 5) % RH**Ambient test conditions**

22 °C and 49.5 % RH

Test date**Start date**

11/09/2024

End date

13/09/2024

UncertaintyThe uncertainty of the assay of Convective heat is $\pm 4\%$ of the value measured**Reference**

2024CN0798-S01_P1

Heat flux density79.48 kW/m²

Specimen	Range HTI ^a 12 values (s)	Time for a 24°C temperature rise HTI (s)
1	6.6	8.7
2	6.8	9.0
3	6.8	9.1
Classification value	6.6	8.7
Average	6.7	8.9

The test was carried out at laboratory located at Carretera Banyeres 10 - 03802 Alcoi, Alicante

Reference	Description
2024CN0798-S01_P1	POBFD3XY Fabric After 5 cycles



RESULTS

DETERMINATION OF BEHAVIOUR ON EXPOSURE TO A SOURCE OF RADIANT HEAT

Standard

EN ISO 6942:2022

Equipment

Equipment for the determination of radiant heat

Conditioned

24h in indoor ambient conditions at (20 ± 2) °C and (65 ± 5) % RH

Ambient test conditions

22 °C and 49.5 % RH

Test date

Start date11/09/2024End date13/09/2024

Reference

2024CN0798-S01_P1

Heat flux density

19.91 kW/m²

Specimen	TF(%)	Heat transfer index RHTI 12 (s)	Heat transfer index RHTI24	(RHTI 24 - RHTI 12) (s)
1	31.9	17.0	27.4	10.4
2	31.9	16.8	27.2	10.4
3	32.3	17.1	27.4	10.3
Average	32.0	17.0	27.3	10.3
Result	31.9	16.8	27.2	10.4

Uncertainty

The uncertainty of the assay of Radiant heat is ±3% of the value measured

The test was carried out at laboratory located at Carretera Banyeres 10 - 03802 Alcoi, Alicante

Reference	Description
2024CN0798-S01_P1	POBFD3XY Fabric After 5 cycles



RESULTS

DETERMINATION OF BEHAVIOUR OF MATERIALS ON IMPACT SPLASHES OF MOLTEN METAL - ALUMINIUM

Standard

EN ISO 9185:2007

Metal

Aluminium

Pouring temperature

(780±20) °C

Pouring angle

(60±1) °C

Pouring height

(225±5) mm

Uncertainty

± 1 % of the value measured

Reference

2024CN0798-S01_P1

Test date**Start date**

11/09/2024

End date

13/09/2024

Atmosphere for testing**Temperature**

22.0 °C

Relative Humidity

51.7 %

Mass of metal used (g)	Mass of metal pouring (g)	Ignition	Puncture	Metal adhered to fabric	Assessment of PVC film
114.25	106.25	NO	NO	NO	NOT DAMAGED
216.32	206.32	NO	NO	NO	NOT DAMAGED
365.32	354.32	NO	YES	YES	DAMAGED
215.02	204.02	NO	NO	NO	NOT DAMAGED
214.88	205.88	NO	NO	NO	NOT DAMAGED
214.8	205.8	NO	NO	NO	NOT DAMAGED

The test was carried out at laboratory located at Carretera Banyeres 10 - 03802 Alcoi, Alicante

Reference	Description
2024CN0798-S01_P1	POBFD3XY Fabric After 5 cycles



RESULTS

DETERMINATION OF THE CONTACT HEAT TRANSMISSION

Standard

EN ISO 12127-1:2015

Equipment

ÖTI CONTACT HEAT PROTECTION TESTER

Conditioned

24h in indoor ambient conditions at (20 ± 2) °C and (65 ± 5) % RH

Test date

Start date11/09/2024End date16/09/2024

Uncertainty

The uncertainty of the assay of contact heat test is ±2% of the value

Reference

2024CN0798-S01_P1

Atmosphere for testing

Temperature21.9 °CRelative Humidity48.6 %

Specimen	Contact temperature (°C)	Threshold time T (s)
1	250	10.98
2	250	10.75
3	250	11.01
Average	250	10.9
Clasification value	250	10.8

The test was carried out at laboratory located at Carretera Banyeres 10 - 03802 Alcoi, Alicante

Reference	Description
2024CN0798-S01_P1	POBFD3XY Fabric After 5 cycles



Lucia Martinez
Head of PPE and Ballistics department

Date: 01/10/2024 12:18:16

Digitally Signed by: LUCIA MARTINEZ MOLTO -

NIF: 21651425F

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