



**Test Report** 

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Overall Rating		
Χ	Pass	
Fail		

Sample Photo







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Lululemon Athletica 1818 Cornwall Avenue, Vancouver, British Columbia, V6J1C7, Canada

The following sample was submitted and identified on behalf of the client as:

Sample Description One sample of TPU film in natural

Brand	:	LuluLemon
Supplier Article Number	:	FT1095 0.3MM
Request Type	:	Development Fabric
Oracle Code/	:	100.10.80910.00000.0097 (Product Development - Accessories)/
Department Code		D0158
Category	:	Bags
Business	:	Accessories
Test Package	:	1
Product Type	:	Clear TPU
Lab Test Request#(PO#)	:	D6284-1
Season / Year	:	SP2023
Raw Material Developer	:	Chris Lin
Raw Material Developer	:	LLL VC Iululemon Store Support Centre 1818 Cornwall Ave Vancouver, BC,
Address		V6J 1C7
Supplier Code	:	DING01
Supplier Name	:	Dingzing Advanced Materials Incorporated
LLL Material Name	:	FT1095-0204 redevelopment
Material Weight	:	360g/m <sup>2</sup>
Construction	:	
Width	:	54 inches cuttable
Finish or Coating/	:	1
Chemical Finishes		
Special Performance	:	1
Claims		
Color	:	Natural
Lot Number	:	
Submitted Fibre Content	:	100% Thermoplastic Polyurethane
Actual Fibre Content	:	Thermoplastic Polyurehtane (TPU)
Suggested Fibre Content	:	Thermoplastic Polyurehtane (TPU)
Submitted Care	:	Material Care Instrucitons Custom Care
Instructions		Warnings Do Not Steam Iron
		Washing Instructions Machine Wash Cold
		Bleaching Instructions Do Not Bleach
		Drying Instructins Tumble Dry Low
		Ironing Instructions Do Not Iron
		Professional Care Instructions Do Not Dry Clean
		Color Care Instruction Comments
		This is a TPU material which
		the melting point is 160c. Do not rion,
		steam, or anything with high heat over than 150c.





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Suggested Care Instructions	: /			
Fail Retest	: /			
Retest Sample Number	: /			
Previous Report Number	: /			
Reason For Revision	: /			
Sample Receiving Date	: Jan. 03, 2	022		
Testing Period	: Jan. 03, 2	.022 - Jan. 20	, 2022	
Test Result(S)				is test report refer only to the roto the roto the following page(s).

### Remark:

This test report supersedes the test report No. TXC2401/2021/LE, Date: Jan. 20, 2022 Reason: Revised Supplier Code and Luminous transmittance +Haze (ASTM D1003)





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Test	Clear TPU for adult		
Protocol	Special Claims & Feather Do	own	
<b>Test Name</b>			Overall Rating
Flammability	Test of Vinyl Plastic Film	16 CFR Part 1611	PASS
Material Ana	lysis	FTIR	DATA
Bloom Form	ation on Polymeric Materials	SATRA TM 361	PASS
Breaking streemethod	ength of leather: Grab	ASTM D2208-16	DATA
Tensile strer	gth of leather: Grab method	ASTM D2209-00 (Reapproved 2015)	DATA
Tearing Strength		ASTM D624-00 (2012)	DATA
Luminous transmittance +Haze		ASTM D1003-00	DATA
Ageing		ASTM D573-04 (2019)	PASS
Color Fastne	ess To Light	AATCC TM 16.3-2014	PASS
Color Fastne	ess To Dye Transfer	AATCC TM 163-2013	PASS
Appearance	after Spot Clean/Wipe Clean	SL-TM-DIM-005	PASS
Water Repel	lent: Spray test	AATCC 22	PASS
Waterproof:	Spray test	AATCC 22	PASS
Waterproof		AATCC 127 option 2	PASS
Air permeab	ility: Wind Proof	ASTM D737-04 (R2012)	PASS

Signed for and on behalf of

SGS Taiwan Ltd.

Hu Shuen Long, Tim Supervisor





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# **Test Results:**

## Flammability Test of Vinyl Plastic Film

(16 CFR Part 1611)

## **Test results**

Specimen	Number	Burn Time(s)	Burn Length (inches)	Burn Rate (inches/s)	Overall Result
	1	N/A	N/A	SE	
	2	N/A	N/A	SE	
L a matha coise a	3	N/A	N/A	SE	
Lengthwise	Lengthwise 4	N/A	N/A	SE	
5	5	N/A	N/A	SE	
	Average	-	-	-	Pass
	1	N/A	N/A	SE	Pass
	2	N/A	N/A	SE	
Transverse	3	N/A	N/A	SE	
Transverse	4	N/A	N/A	SE	
	5	N/A	N/A	SE	
	Average	-	-	-	

The burn rate is calculated based on 6-inch distance between the starting and stopping trip threads SE= Self-extinguish

N/A = Not applicable

## **General requirement (per 16 CFR 1611.3)**

The rate of burning shall not exceed 1.2 in./sec as judged by the average of five determinations lengthwise and five determinations transverse to the direction of processing.





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## **Test Results:**

# **Material Analysis**

(FTIR)

Unit Requirement

Main constituent is

**TPU** Thermoplastic Polyurehtane Content\*

(TPU)

Conclusion **DATA** 

Remark: \* Analysis by Instrument: FTIR (Fourier Transform Infrared Spectrophotometer): VARIAN 3100) Tested by relevant SGS laboratory.

## **Bloom Formation on Polymeric Materials**

(SATRA TM 361)

First stage condition: Dry hot at 60°C for 16 hours / Cold condition at 3°C for 8 hours; test cycle alternately Second stage condition: Humid Hot at 60°C & 95% RH for 16 hours / Cold condition at 3°C for 8 hours) test cycle alternatively

	Unit	<u>Requirement</u>
First stage (after 4 cycles)	No bloom of any kind	No bloom of any kind
Second Stage (after 4 cycles)	No bloom of any kind	No bloom of any kind

Conclusion **PASS** 

## **Breaking strength of leather: Grab method**

(ASTM D2208-16)

	Unit		<u>Requirement</u>
Specimen Thickness	in	0.01	
Lengthwise	lbf	75.90	-
Widthwise	lbf	73.27	-
Conclusion		DATA	





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# **Test Results:**

## Tensile strength of leather: Grab method

(ASTM D2209-00 (Reapproved 2015)

	Unit		Requirement
Thickness	in	0.01	
Tensile Strength			
Lengthwise	lbf/in²	6576.71	-
Widthwise	lbf/in²	6965.58	-
Conclusion		DATA	

## **Tearing Strength**

(ASTM D624-00 (2012); Type of test piece: C)

	Unit		Requirement
Thickness	mm	0.30	· · · · · ·
Tearing force	-		
Lengthwise	N	37.43	-
Widthwise	N	35.43	-
Tearing strength	-		
Lengthwise	kN/m	124.77	-
Widthwise	kN/m	118.11	-
Conclusion		DATA	

# Luminous transmittance +Haze

(ASTM D1003-00)

	Unit		<u>Requirement</u>
Thickness	mm	0.30	
Haze	%	0.95	-
Total Luminous Transmittance	%	90.95	-
Diffuse Luminous Transmittance	%	0.86	-
Conclusion		DATA	

(ASTM D573-04 (2019); Test condition: 50°C; 90% RH; under 10 lb load for 5 days)

	Unit	
Appearance	No significant - change on the test	No significant
, ippediance	sample	change
Conclusion	PASS	





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### **Test Results:**

## **Color Fastness To Light**

(AATCC TM 16.3-2014, Option 3; Xenon Arc Lamp)

Unit Requirement

After 20 AFU

Change in Shade Min. 4.0 4.5

Conclusion **PASS** 

Remark: Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is worst and 5 is best.

# **Color Fastness To Dye Transfer**

(AATCC TM 163-2013; Option II; Modified 70+1°C for 4 hrs)

	Unit		<u>Requirement</u>
Change in Shade	-	5.0	
Staining On Multi-fibre Stripe			Min. 4.0
Acetate	-	5.0	
Cotton	-	5.0	
Nylon	-	5.0	
Polyester	-	5.0	
Acrylic	-	5.0	
Wool	-	5.0	
Staining On Cotton	-	5.0	Min. 4.0
Conclusion		PASS	

Remark: Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is worst and 5 is best.

## Appearance after Spot Clean/Wipe Clean

(SGS In house test method SL-TM-DIM-005)

	Unit		<u>Requirement</u>
Change in Shade	-	4.5	Min. 4.0
Staining	-	4.5	Min. 4.0
Appearance Change	-	No significant change	No significant change
Conclusion		PASS	_





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## **Test Results:**

# Water Repellent: Spray test

(AATCC TM 22-2017)

	Unit	<u>Requirement</u>
As received		
Rating	-	
Trial 1	90	
Trial 2	90	Min. 90
Trial 3	90	
After 10 washes		
Rating	-	
Trial 1	90	
Trial 2	90	Min. 80
Trial 3	90	
Conclusion	PASS	

#### Remarks:

Nomenclature for rating:

100 (ISO 5) No sticking or wetting of the specimen face

90 (ISO 4) Slight random sticking or wetting of the specimen face

80 (ISO 3) Wetting of the specimen face at spray points

70 (ISO 2) Partial wetting of the specimen face beyond the spray points

50 (ISO 1) Complete wetting of the entire specimen face beyond the spray points

0 (ISO 0) Complete wetting of entire face

Washing Procedure: AATCC TM 135-2018t; Machine wash at 80±5°F with 1.8 kg total loading Type 3 ballast + specimen) and 66±1g of 1993 AATCC Standard Reference Detergent WOB, Normal Cycle, Tumble Dry Delicate

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## **Test Results:**

## Waterproof: Spray test

(AATCC TM 22-2017)

	Unit		<u>Requirement</u>
As received			
Rating	-		
Trial 1	90		
Trial 2	90		Min. 90
Trial 3	90		
After 20 washes			
Rating	-		
Trial 1	90		
Trial 2	90		Min. 80
Trial 3	90		
Conclusion	PASS	3	

#### Remarks:

Nomenclature for rating:

100 (ISO 5) No sticking or wetting of the specimen face

90 (ISO 4) Slight random sticking or wetting of the specimen face

80 (ISO 3) Wetting of the specimen face at spray points

70 (ISO 2) Partial wetting of the specimen face beyond the spray points

50 (ISO 1) Complete wetting of the entire specimen face beyond the spray points

0 (ISO 0) Complete wetting of entire face

Washing Procedure: AATCC TM 135-2018t; Machine wash at 80±5°F with 1.8 kg total loading Type 3 ballast + specimen) and 66±1g of 1993 AATCC Standard Reference Detergent WOB, Normal Cycle, Tumble Dry Delicate

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# **Test Results:**

## Waterproof: Hydrostatic Head

(AATCC TM 127-2018; Option 2, Rate of increase of water pressure: 60 mbar/min, temp. of distilled water: 21°C, face side)

	Unit		<u>Requirement</u>
As received Fabric Water Column	mmH₂O	9760	Min. 5000
After 5 washes Fabric Water Column	mmH <sub>2</sub> O	8966	Min. 5000
Conclusion		PASS	

Remark:

Washing Procedure: AATCC TM 135-2018t; Machine wash at 80±5°F with 1.8 kg total loading

Type 3 ballast + specimen) and 66±1g of 1993 AATCC Standard Reference Detergent

WOB, Normal Cycle, Tumble Dry Delicate





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# **Test Results:**

## **Air Permeability: Wind Proof**

(ASTM D737-18; Test pressure: 125Pa; Test area: 38cm²)

	Unit		<u>Requirement</u>
As received			
Average	cfm	0	Max. 5 cfm
Maximum	cfm	0	
Minimum	cfm	0	
CV	%	0	
After 5 washes			
Average	cfm	0	Max. 5 cfm
Maximum	cfm	0	
Minimum	cfm	0	
CV	%	0	

Conclusion **PASS** 

Remark:

ND=Not Detectable

Remark: Detection limit 0.1 cfm at 38cm² test area.

Washing Procedure: AATCC TM 135-2018t; Machine wash at 80±5°F with 1.8 kg total loading

Type 3 ballast + specimen) and 66±1g of 1993 AATCC Standard Reference Detergent

WOB, Normal Cycle, Tumble Dry Delicate

\*\*\* End of Report \*\*\*