

TEST REPORT

Report No.: 66.430.25.2455.01

Dated: 2025-10-15



中国认可
国际互认
检测
TESTING
CNAS L7038



Applicant: Nanjing Uton Optical Materials Technology Co., Ltd.
Address: 17F Yishujia Workhouse, 22 East Bailongjiang St., Jianye Dist., Nanjing City.
Contact Person: Morgan

Sample Submitted: The Sample(s) and Its (Their) Information(s) Was (Were) Submitted by Applicant and Identified.
A. Silver retroreflective tape with Fluorescent Yellow fabric - 1 piece

Sample Description: Aramid Flame Retardant Retro-reflective Tape
Colour: Fluorescent Yellow - Silver - Fluorescent Yellow
Style No.: ET-311
Manufacturer: Utontech

Sample Received Date: 2025-07-30
Date of Testing: 2025-09-11 to 2025-10-14

Test Result(s): Refer to the Section 2 and 3

Note:

- (1) Each order is subject to acceptance of our [General Terms and Conditions](#) and the [TÜV SÜD Testing, Certification, Validation and Verification Regulation](#), in the version valid at the time the contract is concluded. For full version of above both documents, please visit the link to view.
- (2) The results in this report are relevant only to the sample(s) tested.
- (3) The test report shall not be reproduced except in full without the written approval of the laboratory.
- (4) Disclaimer Measurement Uncertainty:
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019 or CNAS-GL015:2022.
- (5) The testing report without CMA stamp is not legally binding and could only be used as internal reference material for the applicant. It shall not be provided as a notarial certification.

Laboratory:
TÜV SÜD Certification and Testing
(China) Co., Ltd. Xiamen Branch
Testing Location: Xiamen
Form No.: TC_XMN_F_24.04 E
Rev: 03
Effective Date: 2024-10-23

Phone: +86 592 7706188
Fax: +86 592 7706288
E-mail:
Report.Softlines@tuvsud.com
Web: www.tuvsud.cn

Regd. Office:
TÜV SÜD Certification and Testing (China) Co., Ltd. Xiamen
Branch
Unit 401 No.93 Huli Industrial Park, Meixi Road, Tong'an District,
Xiamen 361100 P. R. China



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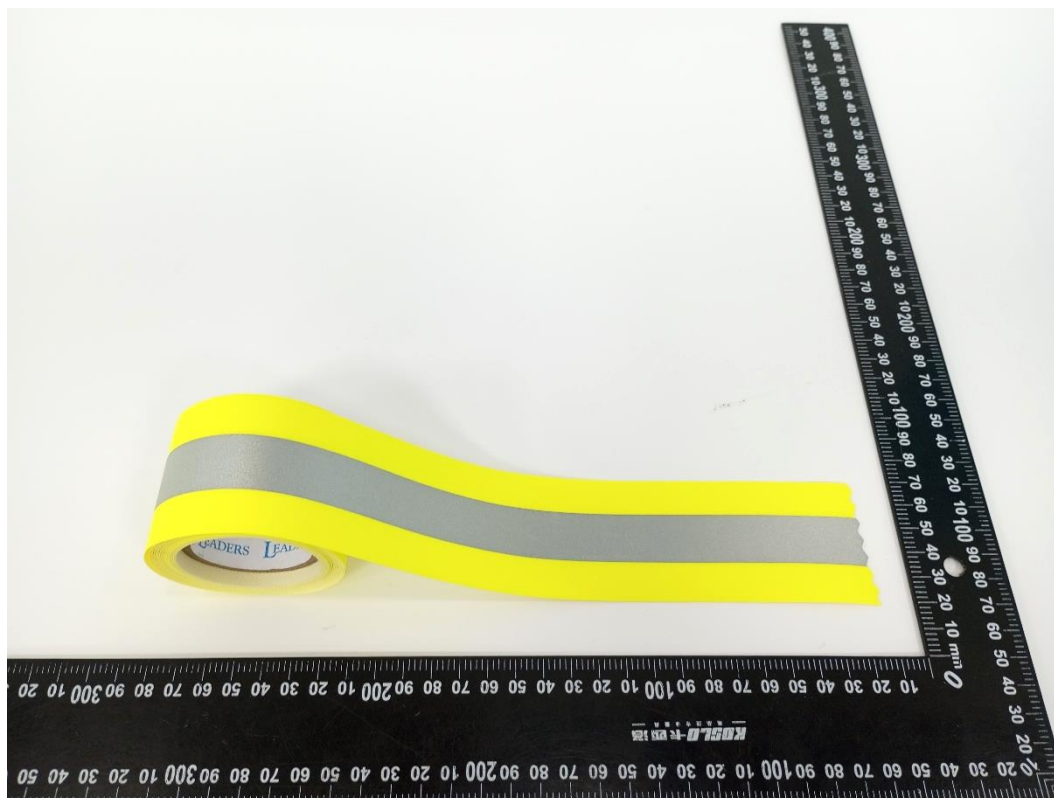
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1. Test Sample Photo(s)



Sample A

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2. Conclusion

No.	Test Parameter(s)	Conclusion
1.	Flame Spread Test – Labels, Badges, Retro-reflective Materials	Pass
2.	Heat Resistance	Pass
3.	Visibility – Performance of Visibility Material(s) – Separate Retroreflective Material	Pass
4.	Visibility – Performance of Visibility Material(s) – Retroreflective Performance after Test Exposure	Pass
5.	Visibility – Visibility Requirement after Heat Resistance Test Exposure	Pass

Notes: Pass = Meet Requirement
= No Comment
N/A = Not Applicable

Fail = Below Requirement
- = Did Not Perform

Remark: (1) Samples are tested as received.

TÜV SÜD Certification and Testing (China) Co., Ltd. Xiamen Branch

Reviewed by:



Stacey Yang
Softlines Department

Approved by:

Damon Zheng
Softlines Department

Laboratory:
TÜV SÜD Certification and Testing
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3. Test Result(s)

3.1 Flame Spread Test – Labels, Badges, Retro-reflective Materials (EN 469:2020 Clause 6.2.1.1, EN ISO 15025:2016 Procedure A)

Washing test method: EN ISO 6330:2021

Washing cycles: 50 cycles.

Sample	Parameters		Results			Requirement	Conclusion
			1	2	3		
A	After domestic washing	Flame spread	#1	#1	#1	*	Pass
		Afterflame (s)	0	0	0		
		Afterglow (s)	0	0	0		
		Flaming debris	#2	#2	#2		
		Hole formation (mm)	4×2	4×1	4×1		

Remark: Domestic washing. Procedure No.: 6N; Using horizontal axis, front-loading type machine: Machine wash at 60°C with 2 kg total dry mass [Type III (100% polyester) ballast + specimen] and "ECE(A)" detergent +sodium perborate + TAED. Line dry.

#1: No part of the lowest boundary of any flame to reach the upper or either vertical edge.

#2: No flaming or molten debris.

*=

Parameters	Index 3
Flame spread	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.
Afterflame	Afterflame time shall be ≤ 2 s.
Afterglow	Afterglow time shall be ≤ 2 s.
Flaming debris	No specimen shall give flaming or molten debris.
Hole formation	No specimen shall give hole formation of 5 mm or greater in any direction, except for an inter-lining that is used for specific protection other than flame protection.

3.2 Heat Resistance (EN 469:2020 Clause 6.2.1.6, ISO 17493:2016)

Test temperature: (180 ± 5) °C

Exposure time: 5 min

Sample	Parameters			Results	Requirement	Conclusion
A	Material	Visual check		No ignition, no melting	No ignition or melting	Pass
		Shrinkage (%)	Length	0.5	≤ 5%	
			Width	0.0		

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3.3 Visibility – Performance of Visibility Material(s) – Separate Retroreflective Material (EN 469:2020 Clause 6.2.6.3, EN ISO 20471:2013 Clause 6.1 & 7.3)

Sample	Parameters		Results [cd/(lx·m²)]			Requirement	Conclusion
	Entrance angle	Observation angle	Rotation angle $\epsilon_1 = 0^\circ$	Rotation angle $\epsilon_2 = 90^\circ$	Difference (%)		
A	5°	12'	550	550	0.0	*	Non-orientation sensitive

Remark: *= Material having coefficients of retroreflection that differ by more than 15 % are defined as orientation sensitive when measured at the two rotation angles $\epsilon_1 = 0^\circ$ and $\epsilon_2 = 90^\circ$.

Sample	Parameters		Results [cd/(lx·m²)]		Requirement [cd/(lx·m²)]	Conclusion
	Entrance angle	Observation angle	Rotation angle $\epsilon_1 = 0^\circ$	Rotation angle $\epsilon_2 = 90^\circ$		
A	5°	12'	550	550	330	Pass
		20'	386	373	250	
		1°	37.3	34.8	25	
		1° 30'	26.2	26.5	10	
	20°	12'	565	571	290	
		20'	397	393	200	
		1°	40.4	40.9	15	
		1° 30'	22.3	24.2	7	
	30°	12'	459	476	180	
		20'	343	359	170	
		1°	40.9	41.6	12	
		1° 30'	27.7	27.0	5	
	40°	12'	307	317	65	
		20'	252	247	60	
		1°	36.7	38.1	10	
		1° 30'	18.2	18.8	4	

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3.4 Visibility – Performance of Visibility Material(s) – Retroreflective Performance after Test Exposure (EN 469:2020 Clause 6.2.6.3, EN ISO 20471:2013+A1:2016 Clause 6.2)

Washing method: ISO 6330:2021 (Domestic)

Sample	Test exposure	Parameters		Results [cd/(lx·m²)]		Requirement [cd/(lx·m²)]	Conclusion
		Entrance angle	Observation angle	Rotation angle $\epsilon_1 = 0^\circ$	Rotation angle $\epsilon_2 = 90^\circ$		
A	7.4.1 Abrasion	5°	12'	537	526	100	Pass
	7.4.2 Flexing	5°	12'	466	424	100	Pass
	7.4.3 Folding at cold temperatures	5°	12'	507	505	100	Pass
	7.4.4 Temperature variation	5°	12'	543	521	100	Pass
	7.4.5 Rainfall	5°	12'	337	341	100	Pass
	7.5.2 Domestic Washing (50 cycles)	5°	12'	316	313	100	Pass

Remark: Domestic washing. Procedure No.: 6N; Using horizontal axis, front-loading type machine: Machine wash at 60°C with 2 kg total dry mass [Type III (100% polyester) ballast + specimen] and "ECE(A)" detergent +sodium perborate + TAED. Line dry.

3.5 Visibility – Visibility Requirement after Heat Resistance Test Exposure (EN 469:2020 Clause 6.2.6.4, EN ISO 20471:2013+A1:2016 Clause 7.3)

Sample	Parameters		Results [cd/(lx·m²)]			Requirement	Conclusion
	Entrance angle	Observation angle	Rotation angle $\epsilon_1 = 0^\circ$	Rotation angle $\epsilon_2 = 90^\circ$	Difference (%)		
A	5°	12'	550	550	0.0	*	Non-orientation sensitive

Remark: *= Material having coefficients of retroreflection that differ by more than 15 % are defined as orientation sensitive when measured at the two rotation angles $\epsilon_1 = 0^\circ$ and $\epsilon_2 = 90^\circ$.

Heat resistance test method: ISO 17493:2016

Test temperature: (180±5) °C

Exposure time: 5 minutes

Sample	Parameters	Parameters		Results [cd/(lx·m²)]		Requirement [cd/(lx·m²)]	Conclusion
		Entrance angle	Observation angle	Rotation angle $\epsilon_1 = 0^\circ$	Rotation angle $\epsilon_2 = 90^\circ$		
A- As received	After heat resistance	5°	12'	513	504	100	Pass

-- END OF THE TEST REPORT --