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TEST REPORT

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Report No.: S210909595_2

01 November 2021

APPLICANT: NANTONG MEGA SAFETY PRODUCTS COM. , LTD
南通擎固安全用品有限公司 (C50710)

Economic development Zone
Rudong County
中国江苏省南通市如东经济开发区
NANTONG JIANGSU
CHINA

Date of receipt : 28 Sept. 2021
Testing period : 29 Sept. 2021
: 01 Nov. 2021

Buyer: --

Sample description: 13G UHMWPE/glass fiber/polyester/spandex liner with PU palm coating

Style / Article no. : 303052

Test(s) requested : --

Service : REGULAR

Brand / Section : --

Season : --

End use : --

Factory name : --

Factory code : --

Revision : Amend sample information.

For CE Marking : Yes

Previous report : --

Product category : --

Product type : --

Test stage : FIRST TEST

Supplier name : --

Exported to : --

1. Conclusion:

	<u>Tests description</u>	<u>Conformity</u>
	EN ISO 21420/EN 388	
1	Abrasion resistance: 2016	Level 4
2	Cut resistance: 2016	Level 4
3	Cutting resistance TDM	Level C
4	Tear strength resistance: 2016	Level 4
5	Puncture resistance: 2016	Level 3
6	pH - Textile (KCl solution)	Pass
7	Aromatic amines derived from azo colorants	Pass
8	Dimethylformamide (DMF/DMFo/DMFa)	Pass
9	Polycyclic Aromatic Hydrocarbons (8)	Pass
10	Dexterity	Level 5
11	XRF screening	Pass
12	XRF screening (Tin)	Pass
13	Phthalates	Pass

Pass: requirements met Fail: requirements not met None: no requirement for this test N/A: not applicable

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Approved by



Henry YAN 严滨
Laboratory Manager



Yvonne MAO 茅璇怡
Senior Analytical Chemical Engineer

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2. Sample(s) description assigned by laboratory:

Size	Analyzed product	Description	Sample information
	GLOVE	Whole glove grey(black/white) PU(UHMWPE/glass fiber/polyester/spandex) palm black/white UHMWPE/glass fiber/polyester/spandex back black/white UHMWPE/glass fiber/polyester/spandex/elastics cuff	



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3. GLOVE/

Whole glove

	Method	Client Requirement	Unit	Result	Conformity
▲ 4.2. Dimethylformamide (DMF/DMFo/DMFa) Dimethylformamide Dimethylformamide (2) Dimethylformamide - average	EN 16778: 2016		mg/kg	28.6	Pass
		<1000	mg/kg	32.8	
			mg/kg	30.7	
(+) 5.2. Dexterity Smallest diameter of pin fulfilling test condition Smallest diameter of pin fulfilling test condition (2) Smallest diameter of pin fulfilling test condition (3) Smallest diameter of pin fulfilling test condition (4) Performance level	EN ISO 21420: 2020		mm	5.0	
			mm	5.0	
			mm	5.0	
			mm	5.0	
				5	

grey (black/white) PU(UHMWPE/glass fiber/polyester/spandex) palm

	Method	Client Requirement	Unit	Result	Conformity
(+) 4.1. Abrasion resistance: 2016 Deviation from the test method used consumables - abrasive used consumables - adhesive Number of cycles at the hole detection Number of cycles at the hole detection (2) Number of cycles at the hole detection (3) Number of cycles at the hole detection (4) Performance level	EN 388:2016 + A1:2018			No Klingspor PL31B Grit 180 3M Scotch >8000 >8000 >8000 >8000 4	
(+) 4.1. Cut resistance: 2016 Deviation from the test method used consumables - canvas used consumables - blade C1	EN 388:2016 + A1:2018			No LEM 6 OLFA RB45 1.3	

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	Method	Client Requirement	Unit	Result	Conformity
T1				60.0	
1C1				8.7	
I1				13.0	
C2				1.4	
T2				60.0	
1C2				9.4	
I2				12.1	
C3				0.8	
T3				60.0	
1C3				7.7	
I3				15.1	
C4				1.4	
T4				60.0	
1C4				7.8	
I4				14.0	
C5				1.4	
T5				60.0	
1C5				8.7	
I5				12.9	
Number of passages for sample 1				5	
Mean value of test piece 1				13.4	
C1 bis				1.3	
T1 bis				60.0	
2C1bis				7.8	
I1 bis				14.2	
C2 bis				1.4	
T2 bis				60.0	
2C2bis				8.3	
I2 bis				13.4	
C3 bis				1.4	
T3 bis				60.0	
2C3bis				10.3	
I3 bis				11.3	
C4 bis				1.3	

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	Method	Client Requirement	Unit	Result	Conformity
T4 bis				60.0	
2C4bis				8.7	
I4 bis				13.0	
C5 bis				1.3	
T5 bis				60.0	
2C5bis				8.8	
I5 bis				12.9	
Number of passages for sample 2				5	
Mean value of test piece 2				12.9	
Considered value				12.9	
Performance level				4	
Observation				First sequence Cn+1 higher than 3xCn, switch to EN13997	
(+) 4.1. Cutting resistance TDM	EN ISO 13997:1999				
used consumables - blade			%	202102027	
Coefficient of variation			%	5.6	
Adjusted factor for blade with neoprene			mm	0.91	
Normalized cutting stroke lengths			mm	23.6	
Normalized cutting stroke lengths (2)			mm	21.5	
Normalized cutting stroke lengths (3)			mm	16.3	
Normalized cutting stroke lengths (4)			mm	21.2	
Normalized cutting stroke lengths (5)			mm	19.6	
Mean normalized cutting stroke length			mm	20.4	
Cut load adjusted for a cut length of 20 mm			N	12.7	
Level Performance				Level C	
(+) 4.1. Tear strength resistance: 2016	EN 388:2016 + A1:2018				
Tear strength			N	>75	
Tear strength (2)			N	>75	
Tear strength (3)			N	>75	
Tear strength (4)			N	>75	
Performance level				4	
(+) 4.1. Puncture resistance: 2016	EN 388:2016 + A1:2018				

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	Method	Client Requirement	Unit	Result	Conformity
Puncture resistance			N	123	
Puncture resistance (2)			N	137	
Puncture resistance (3)			N	125	
Puncture resistance (4)			N	162	
Performance level				3	
(+) 4.2. pH - Textile (KCl solution)	ISO 3071:2020				Pass
pH value		3.5< - <9.5		6.7	
▲ 4.2. Polycyclic Aromatic Hydrocarbons (8)	ISO/TS 16190: 2013				Pass
Benzo(a)anthracene		<1	mg/kg	<0.1	
Chrysene		<1	mg/kg	<0.1	
Benzo(b)fluoranthene		<1	mg/kg	<0.1	
Benzo(k)fluoranthene		<1	mg/kg	<0.1	
Benzo(a)pyrene		<1	mg/kg	<0.1	
Dibenzo(a,h)anthracene		<1	mg/kg	<0.1	
Benzo(e)pyrene		<1	mg/kg	<0.1	
Benzo(j)fluoranthene		<1	mg/kg	<0.1	
(+) XRF screening	ASTM F2617 – 15				Pass
Cd (Cadmium)		<100	ppm	<100	
XRF screening (Tin)	ASTM F2617 – 15				Pass
Sn (Tin)		<150	ppm	<150	
Phthalates	CEN ISO/TS 16181:2011				Pass
BBP . Butyl benzyl phthalate		<0.1	%	<0.0025	
DBP . Di-butyl phthalate		<0.1	%	<0.0025	
DEHP . Di-(2-ethylhexyl) phthalate		<0.1	%	<0.0025	
DIKP . Di-iso-butyl phthalate		<0.1	%	<0.0025	

black/white UHMWPE/glass fiber/polyester/spandex back

	Method	Client Requirement	Unit	Result	Conformity
(+) 4.2. pH - Textile (KCl solution)	ISO 3071:2020				Pass
pH value		3.5< - <9.5		6.8	

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	Method	Client Requirement	Unit	Result	Conformity
(+) 4.2. Aromatic amines derived from azo colorants	ISO 14362-1:2017 (combined extraction)				Pass
Accessible with fibre extraction		<30	mg/kg	<5	
Accessible without fibre extraction		<30	mg/kg	<5	

black/white UHMWPE/glass fiber/polyester/spandex/elastics cuff

	Method	Client Requirement	Unit	Result	Conformity
(+) 4.2. pH - Textile (KCl solution)	ISO 3071:2020				Pass
pH value		3.5< - <9.5		6.7	
(+) 4.2. Aromatic amines derived from azo colorants	ISO 14362-1:2017 (combined extraction)				Pass
Accessible with fibre extraction		<30	mg/kg	<5	
Accessible without fibre extraction		<30	mg/kg	<5	

END OF TEST REPORT

(+)CNAS accreditation

▲: The test was carried out by external accredited laboratory under their accreditation scope.

Unless otherwise specified, the physical test items in this report performed in CTC Shanghai lab were conditioned and tested in the environment of T 23±2°C / RH 50±4%.

Table of Performance Level for Glove

Test Item	Performance Level					
	0##	1	2	3	4	5
Abrasion Resistance (EN 388) Number of cycles (minimum)	<100	100	500	2000	8000	---
Blade Cut Resistance (EN 388) Index (I) (minimum)	<1.2	1.2	2.5	5.0	10.0	20.0
Tear Resistance (EN 388) Force (N) (minimum)	<10	10	25	50	75	---
Puncture Resistance (EN 388) Force (N) (minimum)	<20	20	60	100	150	---
Finger dexterity (EN ISO 21420) Smallest diameter of pin fulfilling test conditions (mm)	---	11.0	9.5	8.0	6.5	5.0

Performance level 0 means the glove falls below the minimum performance level for the given individual hazard

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Levels of performance for materials tested with EN ISO 13997

	Level A	Level B	Level C	Level D	Level E	Level F
6.3 TDM: cut resistance (N)	2	5	10	15	22	30

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