



CTC Shanghai  
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## TEST REPORT



TESTING  
CNAS L4577

April 26, 2011

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Test(s) requested : -- Product Category : -- Product Type : --  
Sample description: 13 G HPPE yarn mixed glass fiber yarn with foam nitrile coating gloves  
Style / Article no.: 11CUT-N15 Buyer: --  
Ref no.: -- Exported to: --  
Date of receipt of application form: March 30, 2011pm  
Order no.: -- Date of receipt of sample: March 30, 2011pm  
End use: -- Testing period: March 30, 2011pm--  
April 25, 2011  
Number of sample(s) SEVERAL PAIRS OF SAMPLES Service required: REGULAR

### 1. Conclusion:

Testing	Result	Combine / Separate Test Item(s)	Failed Test Item(s)
Dexterity of glove	Level 5	(S01)	--
Sizing of glove	9, 9, 10	(S01) (S06) (S07)	--
Tear resistance of glove	Level 4	(S01)	--
Abrasion resistance	Level 4	(S01)	--
Puncture resistance of glove	Level 3	(S01)	--
Blade cut resistance of glove	Level 5	(S01)	--
Azo dyes	PPPP	(S02) (S03) (S04) (S05)	--
pH value	PPPP	(S02) (S03) (S04) (S05)	--
Dimethyl Fumarate Content	P	(S02)	--
Tin detection	P	(S02)	--

This test is not covered by CNAS accreditation.

Note: P: Pass F: Fail

### Comments :

For the submitted sample, the Dexterity got level 5; the Sizing of glove were 9, 9, 10, the pH value test passed the requirements according to EN420 standards.

The Abrasion resistance of glove got level 4; the Blade cut resistance of glove got level 5; the Tear resistance of glove got level 4; the Puncture resistance of glove got level 3 according to EN388 standard.

All the other tests passed the requirements.

Approved by

Original Signed

Henry YAN  
Lab Supervisor

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### 2. Label(s) on the sample(s):

Sample(s)	Size	Style / Article no.:	Sub-sample(s)	Component(s)	Colour
(01)	--	11CUT-N15	(a)	Glove	Black/Grey
			(b)	Palm	Black
			(c)	Back	Grey
			(d)	Cuff	Grey
			(e)	Binding	Brown
(02)	--	11CUT-N15	(a)	Glove	Black/Grey
(03)	--	11CUT-N15	(a)	Glove	Black/Grey

### 3. Sample(s) description assigned by laboratory:

Test item	Sample(s)	Combine / Separate sub-sample(s)
(S01)	(01)	(a)
(S02)	(01)	(b)
(S03)	(01)	(c)
(S04)	(01)	(d)
(S05)	(01)	(e)
(S06)	(02)	(a)
(S07)	(03)	(a)



### 4. Testing result:

#### 4.1 EN 420

TEST METHOD		Test item(s) (S01)	Requirement	P/F
1	Dexterity of glove (EN 420:2003 §6.2) Highest value of four tests : Performance Level :	5.0 5	---	---

Note: P: Pass F: Fail

TEST METHOD		Test item(s)						Requirement	P/F
		(S01)		(S06)		(S07)			
2	Sizing of glove (EN 420:2003 §6.1)	Total length (mm)	Size	Total length (mm)	Size	Total length (mm)	Size		
	Test 1	250	9	255	9	260	10	---	---
	Test 2	251	9	255	9	260	10	---	---
	Test 3	250	9	255	9	260	10	---	---
	Test 4	250	9	255	9	260	10	---	---

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### 4.2 EN 388

TEST METHOD		Test item(s) (S01)		Requirement	P/F
1	<b>Blade cut resistance of glove #</b> (NF EN 388:2004 §6.2) Sequence 1 2 3 Average (I): Lowest average value ( I ) : Performance Level :	Index (I)			
		Test 1	Test 2		
		38.2	45.4		
		39.8	42.2		
		38.6	40.6		
		38.9	42.8		
		38.9			
		5			
2	<b>Tear resistance of glove #</b> (NF EN 388:2004 §6.3) Lowest value of four tests (N): Performance Level :	81.1		---	---
		4		---	---
3	<b>Puncture resistance of glove #</b> (NF EN 388:2004 §6.4) Lowest value of four tests (N): Performance Level :	127.9		---	---
		3		---	---
4	<b>Abrasion resistance of glove #</b> (NF EN 388:2004 §6.1) Lowest value of four tests : Performance Level :	>8000		---	---
		4		---	---

# Refer to the below for details of the performance level of glove.

Note: P: Pass F: Fail

Table of Performance Level for Glove

Test Item	Performance Level					
	0 ##	1	2	3	4	5
<b>Abrasion Resistance (NF EN 388:2004 §6.1)</b> Number of cycles (minimum)	< 100	100	500	2000	8000	---
<b>Blade Cut Resistance (NF EN 388:2004 §6.2)</b> Index (I) (minimum)	< 1.2	1.2	2.5	5.0	10.0	20.0
<b>Tear Resistance (NF EN 388:2004 §6.3)</b> Force (N) (minimum)	< 10	10	25	50	75	---
<b>Puncture Resistance (NF EN 388:2004 §6.4)</b> Force (N) (minimum)	< 20	20	60	100	150	---
<b>Dexterity (EN 420:2003 §6.2)</b> Diameter of pin (in 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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## 4.3 Azo dyes

TEST METHOD		Test Items	Client Requirement	P/F
		(S02)		
1	Azo dyes* (mg/kg) (EN 14362-1:2004)	<10.0	≤30	P
		(S03)		
2	Azo dyes* (mg/kg) (EN 14362-1:2004)	<10.0	≤30	P
		(S04)		
3	Azo dyes* (mg/kg) (EN 14362-1:2004)	<10.0	≤30	P
4	Azo dyes* (mg/kg) (EN 14362-2:2004)	<10.0	≤30	P
		(S05)		
5	Azo dyes* (mg/kg) (EN 14362-2:2004)	<10.0	≤30	P

Note: P: Pass F: Fail

\*Test method according to EN14362-1:2003, EN14362-2:2003 or CEN ISO/TS17234:2010 or §64 LFGB B 82.02-9:2006. Removal of fat by n-hexane (in case of leather), treatment with citric buffer, reductive cleavage with sodium dithionite, extraction with ether, detection by GC/MS and/or HPLC/DAD. (Detection limit: 5 mg/kg)

### List of aromatic amines (Detection limit: 5mg/kg)

Benzidine	3,3'-Dimethoxybenzidine	O-Anisidine
4-Aminodiphenyl	3,3'-Dimethylbenzidine	4-Aminoazobenzene
4-Chloro-O-Toluidine	4,4'-Methylenedi-o-Toluidine	
2-Naphthylamine	P-Cresidine	
O-Aminoazotoluene	4,4'-Methylene-BIS-(2-Chloroaniline)	
5-Nitro-O-Toluidine	4,4'-Oxydianiline	
4-Chloroaniline	4,4'-Thiodianiline	
4-Methoxy-M-Phenylenediamine	O-Toluidine	
4,4'-Diaminodiphenylmethane	2,4,5-Trimethylaniline	
3,3'-Dichlorobenzidine	4-Methyl-M-Phenylenediamine	

### Interpretation of test results:

- (1) In the case of levels per amine component ≤30 mg/kg: Not detected. According to the analysis as carried out, azo colourants banned under the ordinance on commodities were not detected in the article submitted.
- (2) In the case of levels per amine component >30 mg/kg: The analysis result suggests that the article submitted has been manufactured or treated by using azo colourants banned under the ordinance on commodities.
- (3) In case of a result between 25 and 35 mg/kg: We remark that due to the error range of the method, these measurement values represent a border line case.
- (4) For polyester blend sample, two test methods (EN 14362-1:2003 and EN 14362-2:2003) are performed on the sample, result of either one test method or both test methods shown any forbidden amines with content greater than 30 mg/kg will be considered as detected.
- (5) For determination of 4-Aminoazobenzene, §64 LFGB B 82.02-9:2006 will be performed on the sample.

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### 4.4 pH value

According to EN1413: 1998

TEST METHOD	Test Items				Requirement	P/F
	(S02)	(S03)	(S04)	(S05)		
pH value Average value(nearest to 0.1)	6.3	5.5	5.4	6.5	>3.5 & <9.5	PPPP

Note: P: Pass F: Fail

### 4.5 Dimethyl Fumarate Content:

TEST METHOD		Test Items (S02)	Requirement	P/F
1	Dimethyl Fumarate Content (CAS: 624-49-7) Method used: extracted with organic solvent, GCMS analysis Detection Limit: =0.1mg/kg	<0.1	<0.1	P

Note: P: Pass F: Fail

#### Remark:

Laboratory Reporting Limit = 0.1 mg/kg

Mg/kg = milligram per kilogram

ND = Not detected

Method: Sample was extracted with organic solvent and analyzed by Gas Chromatograph Mass Spectrometer.

### 4.6 Tin Detection:

TEST METHOD	Test Items	Requirement	P/F
	(S02)		
Tin XRF Screening (With reference to IEC 62321 (Ed.1) Chapter 6) Detection limit: 350 (mg/kg or ppm)	<350	<350	P

Note: P: Pass F: Fail

- End of report -

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