

Test Report

Applicant: CHEN TONG LEATHER CO., LTD.
No. 111-1, Minsheng Rd.,
Dayuan Township, Taoyuan County 33759,
Taiwan, R.O.C.

Number : TWNC00917927

Date Issued : Sep 16, 2020

Sample Description:

Five (5) groups of submitted sample said to be :

Item Name : Leather Lace
Item No. : -
Lot No. : -
P.O. No. : -
Color : (A) White (B) Black (C) Yellow (D) Red (E) Blue
Sample Quantity : 5 Groups
Agent : -
Factory : -
Buyer : Wolverine World Wide Inc.
Labeled Age Group : -
Applicant's Specified Age Group : Adults
Appropriate Age Group For Testing : -
Country Of Origin : Taiwan
Date Sample Received : Sep 09, 2020
Date Test Started : Sep 10, 2020

Test Conducted:

As requested by the applicant, for details refer to attached page(s).

Authorized By:
On behalf of Intertek Testing Services
Taiwan Limited

Carol Peng
General Manager



Signed by:

Thomas Chou
Manager



Test Report

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Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Samples	As Per Wolverine World Wide's Requirement Version 1.8	Pass
	- Formaldehyde Content	
	- Chromium (VI) Content	Pass
	- Total Cadmium (Cd) Content	Pass
	- Total Lead (Pb) Content	Pass
	- Organotin Content	Pass
	- Pentachlorophenol (PCP) and Tetrachlorophenol(TeCP) Content	Pass
	- Dimethyl Fumarate (DMFU) Content	Pass
	- Nonylphenol (NP), Octylphenol (OP), Nonylphenol Ethoxylates (NPEO) and Octylphenol Ethoxylates (OPEO) Content	Pass
	- pH value	Pass
	- Arylamines and Aromatic Amine Salts	Pass

Authorized By:
On behalf of Intertek Testing Services
Taiwan Limited

Carol Peng
General Manager



Signed by:

Thomas Chou

Thomas Chou
Manager



Test Conducted :

1. Formaldehyde Content

With reference to ISO 17226-2(for Leather), by High Performance Liquid Chromatography-Photodiode Array Detector (HPLC-DAD) analysis.

<u>Tested Sample</u>	<u>Result (ppm)</u>	<u>Limit (ppm)</u>
(A/B)	ND	75
(C/D/E)	ND	75

Limit : 16 ppm (<24 months)
20 ppm (<36 months)
75 ppm (>36 months skin contact)
300 ppm (>36 months no-skin contact)

Remarks : ppm = Parts per million = mg/kg
ND = Not Detected
Detection Limit = 5 ppm

2. Chromium (VI) Content

Samples were conditioned at 80°C for 24 hours with 20% humidity. With reference to EN ISO 17075:2007 and determined by UV-Vis Spectrophotometer (UV-VIS).

<u>Tested Sample</u>	<u>Result (ppm)</u>	<u>Limit (ppm)</u>
(A)	ND	3
(B)	ND	3
(C)	ND	3
(D)	ND	3
(E)	ND	3

Remarks : ppm = Parts per million = mg/kg
ND = Not Detected
Detection Limit = 3 ppm

3. Total Cadmium (Cd) Content

Acid digestion method was used and total content was determined by Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES).

<u>Tested Sample</u>	<u>Result (ppm)</u>	<u>Limit (ppm)</u>
(A/B)	ND	100
(C/D/E)	ND	100

Remarks : ppm = Parts per million = mg/kg
ND = Not detected
Detection limit = 5 ppm



Test Conducted :

4. Total Lead (Pb) Content

Acid digestion method was used and total content was determined by Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES) or Atomic Absorption Spectrophotometer (AAS).

<u>Tested Sample</u>	<u>Result (ppm)</u>	<u>Limit (ppm)</u>
(A/B)	ND	100
(C/D/E)	ND	100

Limit : Textile : 90 ppm (for 0-12 years)
Textile : 100 ppm (for >12 years)
Other material: 90 ppm (for coating)
Other material: 100 ppm (for substrate)

Remarks : ppm = Parts per million = mg/kg
ND = Not detected
Detection limit = 20 ppm

5. Organotin Content

As per EN ISO/TS 16179:2012, by solvent extraction and Gas Chromatography-Mass Spectrometer (GC-MS) analysis.

<u>Compound</u>	<u>Result (ppm)</u>		<u>Limit (ppm)</u>
	<u>(A/B)</u>	<u>(C/D/E)</u>	
Tributyltin (TBT)	ND	ND	0.5
Triphenyltin (TPhT)	ND	ND	0.5
Dibutyltin (DBT)	ND	ND	1000
Dioctyltin (DOT)	ND	ND	1000
Sum of Tri substituted tin compounds^	ND	ND	1000

Remarks : ppm = Parts per million = mg/kg
ND = Not detected
^ = Tri-substituted organotin including Tributyltin (TBT), Triphenyltin (TPhT), Trimethyltin (TMT), Trioctyltin (TOT), and Tricyclohexyltin (TCyT)
Detection limit = 0.03 ppm



Test Conducted :

6. Pentachlorophenol (PCP) and Tetrachlorophenol (TeCP) Content

With reference to LFGB B 82.02-8 (for Textile), ISO 17070(for Leather) and DIN 53313(for Wood), by solvent extraction and determined by Gas Chromatography-Mass Spectrometer (GC-MS).

<u>Compound</u>	<u>Result (ppm)</u>		<u>Limit (ppm)</u>
	<u>(A/B)</u>	<u>(C/D/E)</u>	
Pentachlorophenol (PCP)	ND	ND	5
Tetrachlorophenol (TeCP)	ND	ND	0.5

Limit : PCP : 0.5 ppm for coated fabric
: 5 ppm for leather
: 0.05 ppm for textile
TeCP : 0.5 ppm

Remarks : ppm = Parts per million = mg/kg
ND = Not detected
Detection limit = 0.05 ppm

7. Dimethyl Fumarate (DMFU) Content

By solvent extraction and Gas Chromatography-Mass Spectrometer (GC-MS) Analysis.

<u>Tested Sample</u>	<u>Result (ppm)</u>	<u>Limit (ppm)</u>
(A/B)	ND	0.1
(C/D)	ND	0.1
(E)	ND	0.1

Remarks : ppm = Parts per million = mg/kg
ND = Not detected
Detection limit = 0.03 ppm



Test Conducted :

8. Nonylphenol (NP), Octylphenol (OP), Nonylphenol Ethoxylates (NPEO) and Octylphenol Ethoxylates (OPEO) Content

By solvent extraction and followed by Liquid Chromatography /Tandem Mass Spectrometer (LC-MS-MS).

<u>Compound</u>	<u>Result (ppm)</u>		<u>Limit (ppm)</u>
	<u>(A/B)</u>	<u>(C/D/E)</u>	
Nonylphenol (NP)	ND	ND	100
Octylphenol (OP)	ND	ND	100
Nonylphenol Ethoxylates (NPEO)	ND	ND	100
Octylphenol Ethoxylates (OPEO)	ND	ND	100

Remarks: ppm = Parts per million = mg/kg
 ND = Not Detected
 Detection Limit = 10 ppm

9. pH value

As per ISO 3071: 2005 (KCl solution) (for textiles) by pH meter analysis.

<u>Tested sample</u>	<u>Result</u>	<u>Limit</u>
(A)	3.7(@)	>3.5
(B)	5.5	>3.5
(C)	4.2	>3.5
(D)	5.8	>3.5
(E)	5.6	>3.5

Limit : >3.5 (Leather)
 : 4.0-7.5 (<36 months)
 4.0-8.5 (>36 months skin contact)
 4.0-9.0 (>36 months no-skin contact)

Remark : @ = Difference figure = 0.78



Test Conducted :

10. Arylamines and Aromatic Amine Salts

By Gas Chromatography-Mass Spectrometer (GC-MS) analysis.

Test Method : Leather Method (EN ISO 17234-1 : 2015)

	<u>Forbidden Amine</u>	CAS No.	Result	
			Method L (A/B)	Method L (C/D/E)
1.	4-Aminodiphenyl	92-67-1	N	N
2.	Benzidine	92-87-5	N	N
3.	4-Chloro- <i>o</i> -toluidine	95-69-2	N	N
4.	2-Naphthylamine	91-59-8	N	N
5.	<i>o</i> -Aminoazotoluene	97-56-3	N	N
6.	2-Amino-4-nitrotoluene	99-55-8	N	N
7.	<i>p</i> -Chloroaniline	106-47-8	N	N
8.	2,4-Diaminoaniso	615-05-4	N	N
9.	4,4'-Diaminodiphenylmethane	101-77-9	N	N
10.	3,3'-Dichlorobenzidine	91-94-1	N	N
11.	3,3'-Dimethoxybenzidine	119-90-4	N	N
12.	3,3'-Dimethylbenzidine	119-93-7	N	N
13.	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	N	N
14.	<i>p</i> -Cresidine	120-71-8	N	N
15.	4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	N	N
16.	4,4'-Oxydianiline	101-80-4	N	N
17.	4,4'-Thiodianiline	139-65-1	N	N
18.	<i>o</i> -Toluidine	95-53-4	N	N
19.	2,4-Toluylenediamine	95-80-7	N	N
20.	2,4,5-Trimethylaniline	137-17-7	N	N
21.	<i>o</i> -Anisidine	90-04-0	N	N
22.	<i>p</i> -Aminoazobenzene	60-09-3	N	N
23.	2,4-Xylidine	95-68-1	N	N
24.	2,6-Xylidine	87-62-7	N	N
25.	4-Chloro- <i>o</i> -toluidinium chloride [^]	3165-93-3	N	N
26.	2-Naphthylammoniumacetate [^]	553-00-4	N	N
27.	2,4-Diaminoaniso sulphate [^]	39156-41-7	N	N
28.	2,4,5-Trimethylaniline hydrochloride [^]	21436-97-5	N	N

Limit : 30 ppm

Remarks : N = Not detected
 ppm = Parts per million = mg/kg
 Detection limit = 20 ppm
 ^ = The values were calculated based on concentration of 4-Chloro-*o*-toluidine, 2-Naphthylamine, 2,4-Diaminoaniso and 2,4,5-Trimethylaniline.





End of Report

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