





中国认可 国际互认 TESTING **CNAS L1910** 



## **Test Report**

Report No. A2200378822101001R1 Page 1 of 18

**Company Name** HANGZHOU TOKA(GUANGZHOU) INK CO., LTD/

HANGZHOU TOKA INK CO., LTD shown on Report

XIN YE ROAD NO.1, YONGHE ECONOMIC ZONE OF GETDD, GUANG ZHOU Address

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

UV(BEST CURE) MIXTURE INKS Sample Name

Sample Received Date Oct. 28, 2020

**Testing Period** Oct. 28, 2020 to Nov. 2, 2020

#### **Test Conducted:**

As requested by the applicant. For details refer to next page(s)

Tested

Reviewed by

Date

Pori Xia

Nov. 4, 2020

Hill Zheng

ing International Group Co.,Ltd.

Technical Manager

No. R450141218

CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China



Report No. A2200378822101001R1 Page 2 of 18

### **Executive Summary:**

TES	ST REQUEST	CONCLUSION
1)	As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Formaldehyde, Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA), Pisphenel A (PBA), Phthalates in the submitted sample(s)	See page 4-7
2)	Bisphenol A (BPA), Phthalates in the submitted sample(s).  ASTM F963-17 Standard Consumer Safety Specification for Toy Safety	
-	Clause 4.3.5 – Total Lead content in paint and similar surface coating materials	PASS
-	Clause 4.3.5 Heavy elements	PASS
3)	EN 71-3:2019 European Standard on Safety of Toys	
-	Migration of certain elements	PASS
4)	US Consumer Product Safety Improvement Act of 2008 (CPSIA) with amendment	
	(H.R.2715)	
-	Lead in surface-coatings and similar materials of children's products	PASS
-	Phthalates in children's toys and childcare articles (only test DEHP, DBP, BBP and	PASS
	DINP)	
5)	SOR/2011-17 Toys Regulations of Canada Consumer Product Safety Act (CCPSA)	
-	Heavy metal(Total Lead) content in surface coatings/paint	PASS
-	Heavy metal(Mercury) content in surface coatings/paint	PASS
-	Heavy metals contents in surface coatings/paint	PASS
6)	ISO 8124-3:2010/Amd.1:2014 Safety of toys - Part 3:Migration of certain elements	
-	Migration of certain elements	PASS
7)	US Toxics in Packaging Clearinghouse (TPCH) with 2008 revisions	
-	Heavy metals (Pb, Cd, Hg & Cr(VI)) in packaging and packaging waste	PASS

\*\*\*\*\*\*\* For further details, please refer to the following page(s) \*\*\*\*\*\*\*\*\*\*



Report No. A2200378822101001R1

Page 3 of 18

#### **Test Method**

Tested Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
H	IEC 62321-7-2:2017 and/or determination of	LIV V:-/ICD OES
Hexavalent Chromium(Cr(VI))	Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers	FG (2221 / 2015	COMS
(PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Formaldehyde*	ISO 14184-1:2011	UV-Vis
Deefler Colfee (DEOC)	Refer to US EPA 3550C:2007 &	LC-MS-MS
Perfluorooctane Sulfonates(PFOS)	US EPA 8321B:2007	LC-MS-MS
Perfluorooctanoic Acid(PFOA)	Refer to US EPA 3550C:2007 &	LCMCMC
	US EPA 8321B:2007	LC-MS-MS
Disultant LA (DDA)	Refer to US EPA 3550C:2007 &	LC MC MC
Bisphenol A (BPA)	US EPA 8321B:2007	LC-MS-MS
Phthalates	Refer to EN 14372:2004(E)	GC-MS



Report No. A2200378822101001R1

Page 4 of 18

### Test Result(s) 1

Tested Item(s)	Result	MDL
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers	(PBDEs)	,
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg



Report No. A2200378822101001R1

Page 5 of 18

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DI	BP)	
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

Tested Item(s)	Result	MDL
Formaldehyde*	N.D.	16 mg/kg

Tested Item(s)	Result	MDL
Perfluorooctane Sulfonates	N.D.	0.01 mg/kg
(PFOS)	N.D.	0.01 mg/kg

Tested Item(s)	Result	MDL
Perfluorooctanoic Acid (PFOA)	N.D.	0.01 mg/kg

Tested Item(s)	Result	MDL
Bisphenol A (BPA)	N.D.	1.0 mg/kg



Report No. A2200378822101001R1

Page 6 of 18

Tested Item(s)	Result	MDL
Phthalates		
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	30 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	30 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	30 mg/kg
Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	30 mg/kg
Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
Diethyl phthalate (DEP) CAS#:84-66-2*	N.D.	30 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5*	N.D.	30 mg/kg
Dipentyl phthalate (DPP) CAS#:131-18-0*	N.D.	30 mg/kg
Dicyclohexyl phthalate (DCHP) CAS#:84-61-7*	N.D.	30 mg/kg
Di-n-hexyl phthalate (DNHP) CAS#:84-75-3*	N.D.	30 mg/kg
Bis(2-methoxyethyl) phthalate (DMEP) CAS#:117-82-8	N.D.	30 mg/kg
Diisopentylphthalate (DIPP) CAS#:605-50-5*	N.D.	30 mg/kg
N-Pentyl-isopentyl phthalate (NIPP) CAS#:776297-69-9*	N.D.	30 mg/kg
<sup>1</sup> 1,2-Benzenedicarboxylic acid, di-(C7-11)-branched and linear alkyl esters (DHNUP) CAS#:68515-42-4	N.D.	50 mg/kg
<sup>©</sup> 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) CAS#:71888-89-6	N.D.	50 mg/kg



Report No. A2200378822101001R1

Page 7 of 18

Tested Item(s)	Result	MDL
<sup>1</sup> 1,2-Benzenedicarboxylic acid,		
dipentylester, branched and linear	N.D.	50 mg/kg
(BADP) CAS#:84777-06-0*		
<sup>1</sup> 1,2-benzenedicarboxylic acid,		
di-C6-10-alkyl esters; 1,2-		
benzenedicarboxylic acid, mixed		
decyl and hexyl and octyl diesters	N.D.	50 mg/kg
with $\geq 0.3\%$ of dihexyl		
phthalate CAS#:68515-51-5;		
68648-93-1*		

### Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

- -MDL = Method Detection Limit
- -N.D. = Not Detected (<MDL)
- -mg/kg = ppm = parts per million
- -<sup>©</sup>: In view of the substances are established as UVCB substances (substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test results are calculated based on the main constituents of the representative compounds for substances.

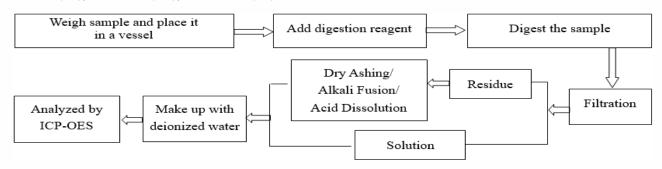


Report No. A2200378822101001R1

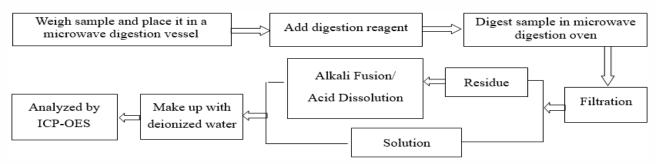
Page 8 of 18

#### **Test Process**

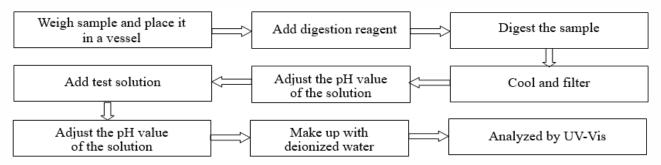
### 1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



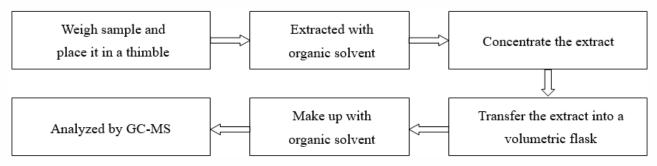
#### 2. Mercury(Hg)



#### 3. Hexavalent Chromium(Cr(VI))



#### 4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)

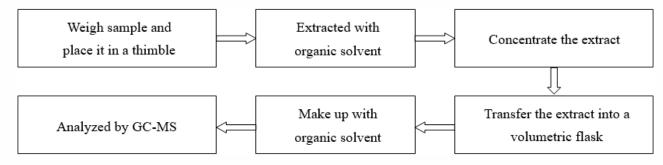




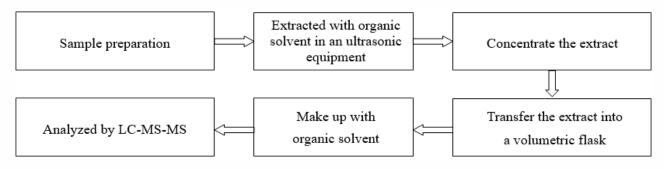
Report No. A2200378822101001R1

Page 9 of 18

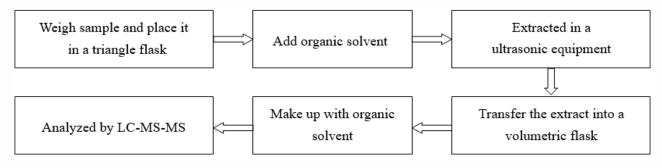
#### 5. Phthalates (DBP, BBP, DEHP, DIBP)



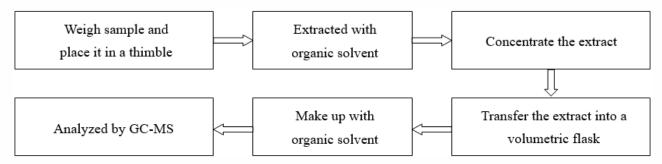
#### 6. Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)



#### 7. Bisphenol A (BPA)



#### 8. Phthalates





Report No. A2200378822101001R1

Page 10 of 18

#### Test Result(s) 2

#### ASTM F963-17 Standard Consumer Safety Specification for Toy Safety

## **▼** Clause 4.3.5 – Total Lead content in paint and similar surface coating materials

Method(s) ASTM F963-17 Clause 8.3 was/were used, and the item(s) was/were analyzed by ICP-OES.

Tested Item(s)	Result	MDL	<u>Limit</u>
	(mg/kg)	(mg/kg)	(mg/kg)
Total Lead (Pb)	N.D.	5	90

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

#### **▼** Heavy elements test\*

Method(s) ASTM F963-17 Clause 8.3 was/were used, and the item(s) was/were analyzed by ICP-OES.

Total results screening on surface coating:

Tastad Itam(s)	Descrite (meality)	MDL	Total limit	Soluble limit
Tested Item(s)	Result (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Total Antimony (Sb)	N.D.	10		60
Total Arsenic (As)	N.D.	10		25
Total Barium (Ba)	39	10		1000
Total Cadmium (Cd)	N.D.	10		75
Total Chromium (Cr)	N.D.	10		60
Total Lead (Pb)	N.D.	5	90	90
Total Mercury (Hg)	N.D.	10		60
Total Selenium (Se)	N.D.	10		500

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million



Report No. A2200378822101001R1

Page 11 of 18

#### Test Result(s) 3

## EN 71-3:2019 European Standard on Safety of Toys

## **▼** Migration of certain elements

Method(s) EN 71-3:2019 was/were used, and the item(s) was/were analyzed by ICP-OES, ICP-MS, IC-UV, LC-ICP-MS and/or GC-MS.

### **Category Ⅲ:** scraped-off toy material

Tested Item(s)	<u>Result</u>	MDL	<u>Limit</u>
Tested Item(s)	(mg/kg)	(mg/kg)	(mg/kg)
Aluminium (Al)	N.D.	50	70000
Antimony (Sb)	N.D.	5	560
Arsenic (As)	N.D.	5	47
Barium (Ba)	N.D.	50	18750
Boron (B)	N.D.	50	15000
Cadmium (Cd)	N.D.	1	17
Chromium (III) #1	N.D.	0.2	460
Chromium (VI)	N.D.	0.002	0.053
Cobalt (Co)	N.D.	5	130
Copper (Cu)	N.D.	50	7700
Lead (Pb)	N.D.	1	23
Manganese (Mn)	N.D.	50	15000
Mercury (Hg)	N.D.	5	94
Nickel (Ni)	N.D.	5	930
Selenium (Se)	N.D.	5	460
Strontium (Sr)	N.D.	50	56000
Tin (Sn) #2	N.D.	2	180000
Organic tin (TBT) #3	N.D.	0.05	12
Zinc (Zn)	N.D.	50	46000



Report No. A2200378822101001R1

Page 12 of 18

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- Filter paper was used instead of membrane filter in lab testing.
- #1 Trivalent chromium (Cr (III)) = Chromium (Cr) Hexavalent chromium (Cr (VI)).
- <sup>#2</sup> Tin (Sn) content can be used for screen test for organic tins analysis to show compliance with the requirement of EN 71-3:2019.
- #3 The migration of organic tin is expressed as tributyltin (TBT). Where the tin content exceeded the limit of organic tin, eleven organic tins listed in the table were determined by GC-MS and the client should note there are other organic tins that may be present in toy materials.



Report No. A2200378822101001R1

Page 13 of 18

#### Test Result(s) 4

#### US Consumer Product Safety Improvement Act of 2008 (CPSIA) with amendment (H.R.2715)

#### **▼**<u>Lead in surface-coatings and similar materials of children's products</u>

Method(s) CPSC-CH-E1003-09.1 was/were used, and the item(s) was/were analyzed by ICP-OES.

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	<u>Limit</u> (mg/kg)
Total Lead (Pb)	N.D.	5	90

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

#### **▼** Phthalates in children's toys and childcare articles (only test DEHP, DBP, BBP and DINP)

Method(s) CPSC-CH-C1001-09.4 was/were used, and the item(s) was/were analyzed by GC-MS.

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
Di-2-ethylhexyl Phthalate (DEHP)	N.D.	30	1000
Dibutyl Phthalate (DBP)	N.D.	30	1000
Benzylbutyl Phthalate (BBP)	N.D.	30	1000
Diisononyl Phthalate (DINP)	N.D.	50	1000
Client's additional requirement on other phthalate(s)			
Di-n-octyl Phthalate (DNOP)*	N.D.	30	1000
Diisodecyl Phthalate (DIDP)*	N.D.	50	1000

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- -1000 mg/kg = 0.1%



Report No. A2200378822101001R1

Page 14 of 18

#### Test Result(s) 5

#### SOR/2011-17 Toys Regulations of Canada Consumer Product Safety Act (CCPSA)

#### **▼** Heavy metal(Total Lead) content in surface coatings/paint

Method(s) Health Canada Product Safety Reference Manual Book 5 - Laboratory Policies and Procedures Part B: Test Methods Section, Method C-02.2 was/were used, and the item(s) was/were analyzed by ICP-OES.

Tested Item(s)	Result	MDL	<u>Limit</u>
	(mg/kg)	(mg/kg)	(mg/kg)
Total Lead (Pb)	N.D.	10	90

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

#### **▼** Heavy metal(Mercury) content in surface coatings/paint

Method(s) Health Canada Product Safety Reference Manual Book 5 - Laboratory Policies and Procedures Part B: Test Methods Section, Method C-07 was/were used, and the item(s) was/were analyzed by ICP-OES.

Tested Item(s)	<u>Result</u>	MDL	<u>Limit</u>
rested ftelli(s)	(mg/kg)	(mg/kg)	(mg/kg)
Mercury (Hg)	N.D.	10	N.D.(<10)

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million



Report No. A2200378822101001R1

Page 15 of 18

### **▼** Heavy metals contents in surface coatings/paint

Method(s) Health Canada Product Safety Reference Manual Book 5 - Laboratory Policies and Procedures Part B: Test Methods Section, Method C-03 was/were used, and the item(s) was/were analyzed by ICP-OES.

T. ( 11, ( )	Result	MDL	<u>Limit</u>
Tested Item(s)	(mg/kg)	(mg/kg)	(mg/kg)
Soluble Antimony(Sb)	N.D.	10	1000
Soluble Arsenic(As)	N.D.	10	1000
Soluble Cadmium(Cd)	N.D.	5	1000
Soluble Barium(Ba)	N.D.	5	1000
Soluble Selenium(Se)	N.D.	10	1000

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million



Report No. A2200378822101001R1

Page 16 of 18

Test Result(s) 6

### ISO 8124-3:2010/Amd.1:2014 Safety of toys - Part 3:Migration of certain elements

### **▼** Migration of certain elements\*

Method(s) ISO 8124-3:2010/Amd.1:2014 was/were used, and the item(s) was/were analyzed by ICP-OES.

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	<u>Limit</u> (mg/kg)
Soluble Antimony (Sb)	N.D.	5	60
Soluble Arsenic (As)	N.D.	2.5	25
Soluble Barium (Ba)	N.D.	5	1000
Soluble Cadmium (Cd)	N.D.	5	75
Soluble Chromium (Cr)	N.D.	2.5	60
Soluble Lead (Pb)	N.D.	5	90
Soluble Mercury (Hg)	N.D.	2.5	60
Soluble Selenium (Se)	N.D.	5	500

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million



Report No. A2200378822101001R1

Page 17 of 18

Test Result(s) 7

### US Toxics in Packaging Clearinghouse (TPCH) with 2008 revisions

#### **▼** Heavy metals (Pb, Cd, Hg & Cr(VI)) in packaging and packaging waste

Refer to method(s) US EPA 3052:1996, US EPA 6010D:2018, US EPA 7196A:1992 and US EPA 3060A:1996 was/were used, and the item(s) was/were analyzed by ICP-OES and UV-Vis.

Tested Item(s)	Result	MDL	<u>Limit</u>
	(mg/kg)	(mg/kg)	<u> </u>
Total Lead (Pb)	N.D.	2	Total content (Lead +
Total Cadmium (Cd)	N.D.	2	Cadmium + Mercury +
Total Mercury (Hg)	N.D.	2	Hexavalent Chromium)
Hexavalent-Chromium (Cr(VI))	N.D.	2	< 100 mg/kg

#### Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

#### Sample/Part Description Black ink

#### Note:

- -The sample was tested after drying for 2 hours under 105°C.
- -This testing report revised "Company Name shown on Report" based on the original report of No.A2200378822101001. This testing report displaces the original one which was invalid since the date of this testing report released.
- -\*indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.



Report No. A2200378822101001R1

Page 18 of 18

## Photo(s) of the sample(s)



#### Statement:

- 1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
- 2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
- 3. The result(s) shown in this report refer(s) only to the sample(s) tested;
- 4. Without written approval of CTI, this report can't be reproduced except in full;
- 5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

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



## **Appendix**

#### **Client Reference Information**

UV 161、UV VP、UV HY-BD、YT UV INK、UV SUP、UV YQ15-NT、UV LHP、UV HZ、UV L CARTON、UV LS、UV NH、UV NH (H)、UV KFI、UV 171、UV CS、UV RNC、UV NVR、UV BF、UV PFP-NT、UV SF、UV DT、UV HF、UV NHF、UV NT、UV CHP、UV BG、UV QYS-NT、UV KTP、UV NEW HF、UV UV FLUOPESCENT 、UV HL、UV HJ、UV YL-NT、UV ASP、UV NT(XY)、UV GCP、UV WL、UV INCARD、UV SCREEN、UV K-HS、UV LED、UV LES、UV SOYA、UV VNL、UV HT、UVFLEXO、UV TK/KW/NO.7 OPV 、UV HJK、UV RUB MATT OPV 、UV EMBOSS、UV NYD、UV TS、UV BOLI OPV 、UV SJ、UV YL-NT、UV NIXIANGDIYOU 、UV KY、UV KY(H)、UV GP-LED 、UV ART、UV GP、UV PACK、UV LC-LED 、LED UV HK/90、LeCard、LeCure、UV ZXY、U-Card、MontAge a,Mixtures of the above series。

#### **Statement:**

The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.