

Test Report

Report No. : WTH19H08053537X1C-1

Date: Aug. 12, 2019

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Applicant: SHENZHEN BEST LED OPTO-ELECTRONIC CO., LTD

Address: Building No. 1 Lane 1 Liuwu Nanlian The Fifth Industry Area, Longgang, Shenzhen, Guangdong, China.
518116

Report on the submitted sample(s) said to be:

Sample Name: LED

Sample Description: 1.White body
2.Silvery metal pin

Sample Model: Please refer to the following page(s).

Sample No.: WTH19H08053537C01

Sample Received Date: Aug. 3, 2019

Testing Period: Aug. 3, 2019 - Aug. 7, 2019

Test Result: Please refer to the following page(s).

Test Requested:	Conclusion
As specified by client, to determine the Pb, Cd, Hg, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP content in the submitted sample with reference to EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863.	PASS

Signed for and on behalf of HCT



Michael Huang



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Sample Model:

U5299FRBLGWD ZD6179SRGWD Z309SRGWD 509URYGWD 309URBWD U5293WC 2835WI 5050RGB-S9
3528RGB-MP 3528-3-03-RGB 5050-3-03-RGB 3528FRC-50 3528UBC-50 3528FOC 304FRC 304FYC 304WC 304BC
304LGC 304PGC 304IRC 304UVC 304FOC 503URC 503FRC 503FYC 504BC 504LGC 504PGC 503UYGC 503IRC
504UVC 503FOC 5050IRC 5050FRC 5050FYC 5050UBC 5050LGC 5050PGC 5050WC 5054WC 5050WW 5050CW
5050UVC 5054WW 5054IRC 5050FOC 2835IRC 2835FIRC 2835FRC 2835FYC 2835BC 2835LGC 2835PGC
2835WC 2835WW 2835CW 2835UVC 3528IRC 3528FIRC 3528FRC 3528FYC 3528UBC 3528BC 3528GC 3528LGC
3528YGC 3528WC 3528WW 3030IRC 3030FIRC 5730IRC 5050RYG 5730FRC 5730UBC 5730LGC 5730FYC
5730WC 5730WW 5730WI 5730CW 1615RGB 0805RGB 2121RGB 1010RGB 3535RGB 3020IRC U5293IRC
U5293FRC U5293WC U5293FYC U5293FOC U5293BC U5293LGC 2835RGB-36S 2835RGB-12S 5050RGB-6812S
506RGB-36S 506RGB-12S 3527RGC 3528RBC 3527WWC 4014WC 3528RIRC 3528BPC 3528RGC 3528RBC
503URD 503UYD 503LGD 304URD 304UYD 304LGD 304YGD 503YGD 503UYGC 503UOC-LMDZ

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Test Result(s):

Unit: mg/kg

Test Items	Test Method/ Equipment	MDL	Content	EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863	
			1		
Lead(Pb)	IEC 62321-5:2013. ICP-OES/AAS	2	N.D.	1000	
Cadmium(Cd)		2	N.D.	100	
Mercury(Hg)	IEC 62321-4:2013 +AMD1:2017. ICP-OES	2	N.D.	1000	
Hexavalent Chromium(Cr(VI))	IEC 62321-5:2013/ IEC 62321-7-2:2017. ICP-OES/AAS UV-VIS	8	N.D.	1000	
Mono-bromobiphenyl	IEC 62321-6:2015. GC-MS	5	N.D.	—	
Di-bromobiphenyl		5	N.D.		
Tri-bromobiphenyl		5	N.D.		
Tetra-bromobiphenyl		5	N.D.		
Penta-bromobiphenyl		5	N.D.		
Hexa-bromobiphenyl		5	N.D.		
Hepta-bromobiphenyl		5	N.D.		
Octa-bromobiphenyl		5	N.D.		
Nona-bromobiphenyl		5	N.D.		
Deca-bromobiphenyl		5	N.D.		
Polybrominated Biphenyls(PBBs)		—	N.D.		1000
Mono-bromodiphenyl ether		5	N.D.		—
Di-bromodiphenyl ether	5	N.D.			
Tri-bromodiphenyl ether	5	N.D.			
Tetra-bromodiphenyl ether	5	N.D.			
Penta-bromodiphenyl ether	5	N.D.			
Hexa-bromodiphenyl ether	5	N.D.			
Hepta-bromodiphenyl ether	5	N.D.			
Octa-bromodiphenyl ether	5	N.D.			
Nona-bromodiphenyl ether	5	N.D.			
Deca-bromodiphenyl ether	5	N.D.			
Polybrominated DiphenylEthers(PBDEs)	—	N.D.	1000		



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Test Items	Test Method/Equipment	MDL	Content	EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863
			1	
Dibutyl phthalate (DBP)	IEC 62321-8:2017, GC-MS	30	N.D.	1000
Butylbenzyl phthalate (BBP)		30	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP)		30	N.D.	1000
Di-iso-butyl phthalate(DIBP)		30	N.D.	1000

Test Items	Test Method/Equipment	MDL	Content	EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863
			2	
Lead(Pb)	IEC 62321-5:2013. ICP-OES/AAS	2	N.D.	1000
Cadmium(Cd)		2	N.D.	100
Mercury(Hg)	IEC 62321-4:2013 +AMD1:2017. ICP-OES	2	N.D.	1000

Test Item	Test Method/Equipment	MDL (µg/cm ²)	Result (µg/cm ²)	Qualitative Result	EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863
			2		
Hexavalent Chromium(Cr(VI))◆	IEC 62321-7-1:2015. UV-VIS	0.10	N.D.	Negative	—

Note: mg/kg=ppm= parts per million

MDL=method detection limit

“—” =Not regulated

N.D.=not detected(less than method detection limit)

Results shown as N.D. are ignored in the sum calculation.

The detected Chromium (Cr) content is "N.D.", therefore, the Hexavalent Chromium (Cr (VI)) content is "N.D.", No need for validation test of the Hexavalent Chromium (Cr (VI)).

If Chromium (Cr) content exceeds Hexavalent Chromium (Cr (VI)) method detection limit, Validation test of the Hexavalent Chromium (Cr (VI)) is required.

As specified by client, only test the designated sample.

This report replaces the report which report No. is WTH19H08053537C-1.



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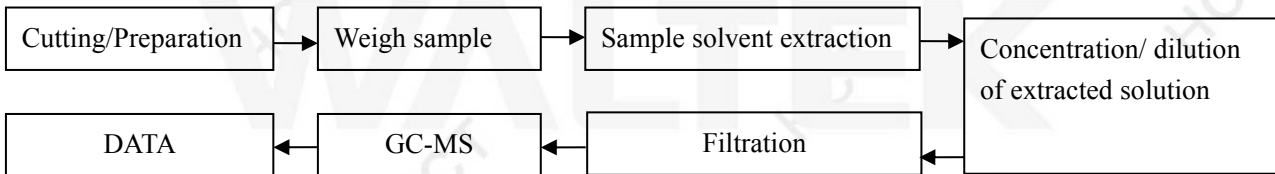
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- ◆ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than $0.13\mu\text{g}/\text{cm}^2$. The sample coating is considered to contain Cr(VI);
 - b. The sample is negative for Cr(VI) if Cr(VI) is N.D. (concentration less than $0.10\mu\text{g}/\text{cm}^2$). The coating is considered a non-Cr(VI) based coating;
 - c. The result between $0.10\mu\text{g}/\text{cm}^2$ and $0.13\mu\text{g}/\text{cm}^2$ is considered to be inconclusive -unavoidable coating variations may influence the determination;
- Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

Test Flow Chart (DBP, BBP, DEHP, DIBP)



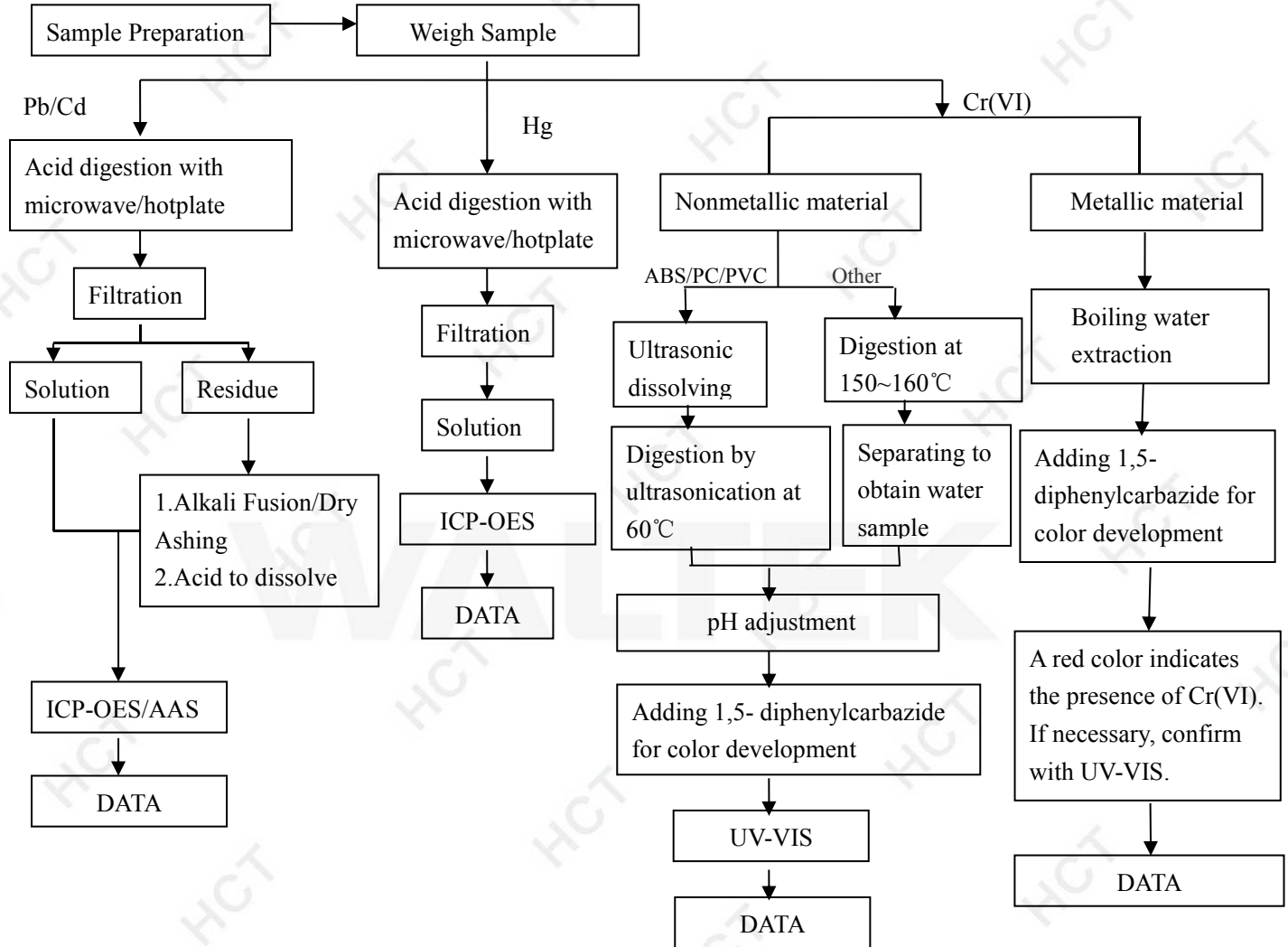
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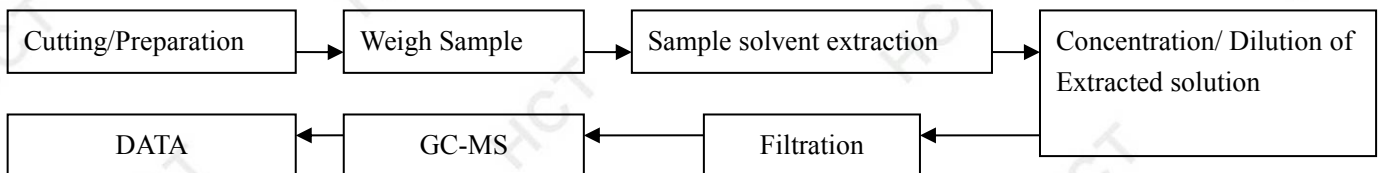
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Test Flow Chart (Pb, Cd, Hg, Cr(VI), PBBs, PBDEs)



These sample were dissolved totally by pre-conditioning method according to above flow chart(Cr(VI) test method excluded)

PBBs/PBDEs



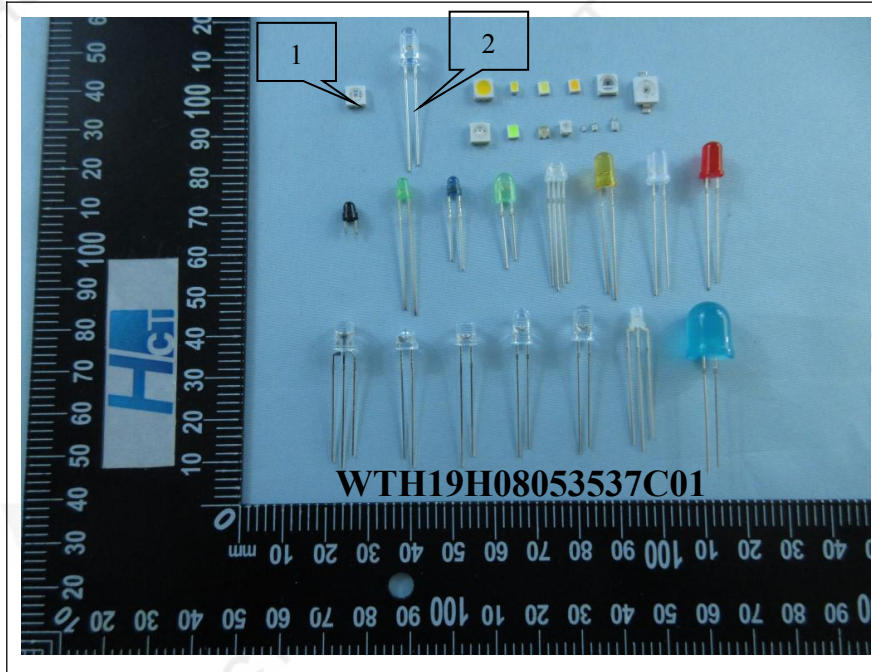
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The photo of the sample



End

This report will go into effect with HCT stamp. This report could not be revised. This report is only responsible for the test result of submitted samples. Without written authorization, any copy of this report for propaganda is invalid.

