



# RoHS TEST REPORT

For

LED FILAMENT BULB

Model No.: VT-2005, VT-2006, VT-2008, VT-2019, VT-2024, VT-2027, VT-2004, VT-2018,  
VT-2052, VT-2042, VT-2144, VT-2132, VT-2126, VT-2154, VT-2164

Applicant : V-TAC EXPORTS LIMITED

ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD CENTRAL,  
CENTRAL, HONGKONG

Manufacturer : V-TAC EXPORTS LIMITED

ROOM NO.301, KAM ON BUILDING 176A QUEENS ROAD CENTRAL,  
CENTRAL, HONGKONG

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Report Number : D00.06.0432R-R1

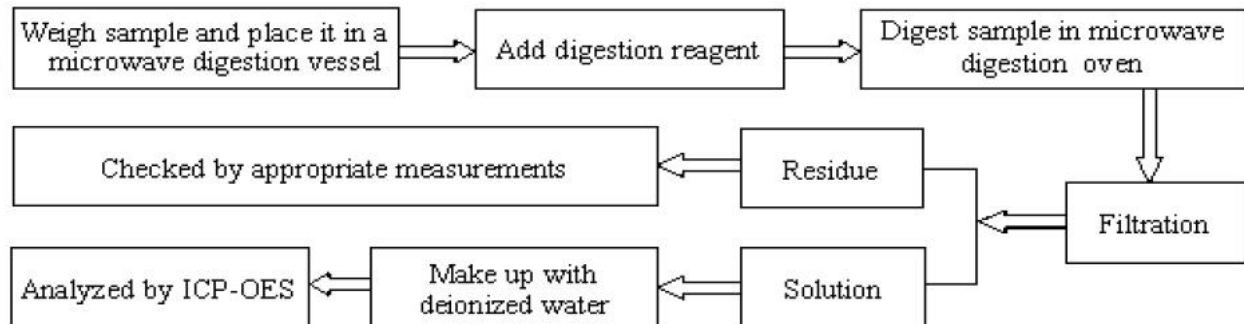
Issued Date : December 01, 2017

Date of Report : December 01, 2017

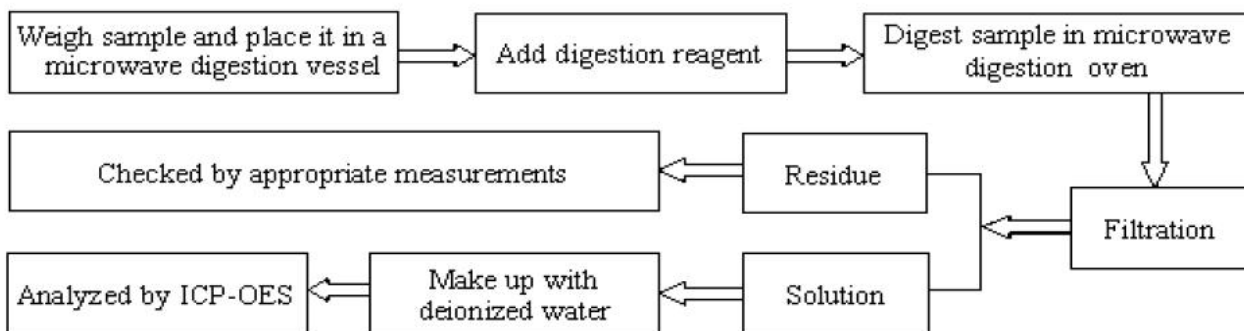
**Note:**

1. The test data and result is based on the tested sample only.
2. Please verify information in the report on GST web: [www.gstslab.com](http://www.gstslab.com) through report number.
3. All rights reserve, the pirate edition investigates necessarily! This report shall not be reproduced unless under the authority of Global-Standard Testing Service Co., Ltd.
4. This report is based on report D00.06.0432R dated December 26, 2016.

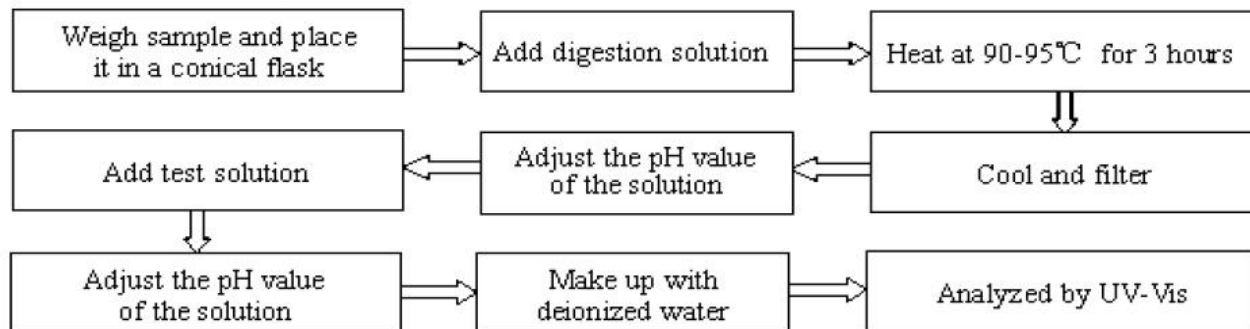
### 1. Lead(Pb), Cadmium(Cd)



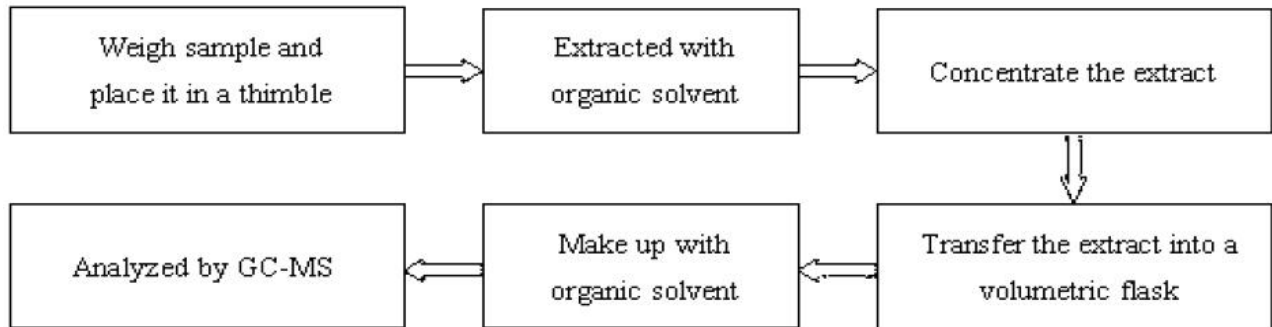
### 2. Mercury(Hg)



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



**4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers(PBDEs) ,  
HBCDD, DBP, DEHP, BBP**



**Method Detection Limit (MDL) in wet chemical test**

Test Items	Pb	Cd	Hg	PBBs & PBDEs
Unit	mg/kg	mg/kg	mg/kg	mg/kg
MDL	2	2	2	2

<b>Result</b>	:	<b>Pass</b>
<b>Conclusion</b>	:	An independent evaluation on the above-mentioned product(s) has been conducted pursuant to 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, and concluded that the equipment under evaluation met the legislative requirements of this directive.

Reviewed by  
  
 Tim Sun  
 Manager  
 December 01, 2017

### Test Data Summary

SAMPLE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusion (P/F)
1	Diffuser	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
2	Matal of lamp base	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	/	< 1000	N.A.
		PBDEs	D	/	< 1000	N.A.
		HBCDD	D	/	< 1000	N.A.
		DEHP	D	/	< 1000	N.A.
		DBP	D	/	< 1000	N.A.
3	Plastic of lamp base	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
BBP	D	N.D.	< 1000	P		

SAMPLE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusion (P/F)
4	Plastic enclosure	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
5	Screws	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	/	< 1000	N.A.
		PBDEs	D	/	< 1000	N.A.
		HBCDD	D	/	< 1000	N.A.
		DEHP	D	/	< 1000	N.A.
		DBP	D	/	< 1000	N.A.
		BBP	D	/	< 1000	N.A.
6	Glue	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P

SAMPLE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusion (P/F)
7	LED	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
8	LED PCB	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
9	Soldering tin of LED PCB	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	/	< 1000	N.A.
		PBDEs	D	/	< 1000	N.A.
		HBCDD	D	/	< 1000	N.A.
		DEHP	D	/	< 1000	N.A.
		DBP	D	/	< 1000	N.A.
		BBP	D	/	< 1000	N.A.

SAMP LE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusio n (P/F)
10	Internal wire	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
11	Conductive mud	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
12	Metal block	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	/	< 1000	N.A.
		PBDEs	D	/	< 1000	N.A.
		HBCDD	D	/	< 1000	N.A.
		DEHP	D	/	< 1000	N.A.
		DBP	D	/	< 1000	N.A.
		BBP	D	/	< 1000	N.A.

SAMP LE NO.	COMPONENTS	Item	Results of EDXRF	Results of	Chemical testing	Conclusio n
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			(P/F/D)	testing(mg/kg)	limit (mg/kg)	(P/F)
13	PCB of driver	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
14	Resistors	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
15	Diodes	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P



SAMPLE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusion (P/F)
16	Capacitors	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
17	Triode	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
18	Rectifier bridge	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P

SAMP LE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusio n (P/F)
19	IC	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
20	Fuse	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P
21	Inductance	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	N.D.	< 1000	P
		PBDEs	D	N.D.	< 1000	P
		HBCDD	D	N.D.	< 1000	P
		DEHP	D	N.D.	< 1000	P
		DBP	D	N.D.	< 1000	P
		BBP	D	N.D.	< 1000	P

SAMP LE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusio n (P/F)
22	Soldering tin of driver PCB	Cd	P	N.D.	< 100	P
		Cr	P	N.D.	< 1000	P
		Hg	P	N.D.	< 1000	P
		Pb	P	N.D.	< 1000	P
		PBBs	D	/	< 1000	N.A.
		PBDEs	D	/	< 1000	N.A.
		HBCDD	D	/	< 1000	N.A.
		DEHP	D	/	< 1000	N.A.
		DBP	D	/	< 1000	N.A.
		BBP	D	/	< 1000	N.A.

Note:

(1) N.D. = Not detected (<MDL)

(2) ppm = mg/kg

(3) N.A. = Not Analyzed

(4) Negative = the concentration of Hexavalent Chromium extracted from 50cm<sup>2</sup> sample is less than the detection limit.

**Appendix 1**

Photo documentation

<p>Photo 1</p> <p>View:</p> <p><input checked="" type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
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<p>Photo 2</p> <p>View:</p> <p><input checked="" type="checkbox"/> Front</p> <p><input type="checkbox"/> Rear</p> <p><input type="checkbox"/> Right side</p> <p><input type="checkbox"/> Left side</p> <p><input type="checkbox"/> Top</p> <p><input type="checkbox"/> Bottom</p> <p><input type="checkbox"/> Internal</p>	
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