



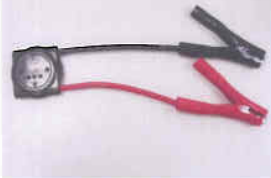
Prüfbericht - Nr.: 10040708 001		Seite 1 von 6	
<i>Test Report No.:</i>		<i>Page 1 of 6</i>	
Auftraggeber: <i>Client:</i>	Raya Enterprise Ltd. No. 528-1, Sec. 1, Shenlin Road, Daya Dist., Taichung City 42865, Taiwan, R.O.C.		
Gegenstand der Prüfung: <i>Test Item:</i>	Battery Protection		
Bezeichnung: <i>Identification:</i>	VP-12; VP-24; VP-1224		
Anlieferungszustand: <i>Delivery condition:</i>	apparent good	Eingangsdatum: <i>Date of Receipt:</i>	2013-03-07
Prüfört: <i>Testing location:</i>	TÜV Rheinland Hong Kong Ltd.		
Prüfgrundlage: <i>Test specification:</i>	According to RoHS (recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU: Total Content of Lead, Cadmium, Mercury, Chromium VI, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers		
Prüfergebnis: <i>Test result:</i>	According to the kind and extend of tests performed the above mentioned test item passed the test specification.		
geprüft/ tested by:		kontrolliert/ checked by:	
			
2013-03-14	Anne Chen /Coordinator	2013-03-14	Carl Chang /Department Manager
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
	Unterschrift <i>Signature</i>		Unterschrift <i>Signature</i>
Sonstiges/ Other Aspects:			
Test period: 2013-03-07 – 2013-03-14			
Abkürzungen:		Abbreviations:	
ok / P = entspricht Prüfgrundlage		ok / P = passed	
fail / F = entspricht nicht Prüfgrundlage		fail / F = failed	
n.a. / N = nicht anwendbar		n.a. / N = not applicable	
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p>			








Test Report No. : 10040708 001
Customer : Raya Enterprise Ltd.

2013-03-14

Sample List:

Part No.	Picture	Description:	ID / Model No.:	Lab.-No.:
A			VP-12V	TCL130307-02
B			VP-24V	TCL130307-02
C			VP1224	TCL130307-02

Sample No.	Picture	Part No.	Component	Material	Color
1		A	Hosing	Plastic	Yellow
2		A/B/C	Handle cover	Plastic	Red
3		A/B/C	Cable insulation	Plastic	Red
4		A/B/C	Handle cover	Plastic	Black
5		A/B/C	Cable insulation	Plastic	Black



Test Report No. : 10040708 001
Customer : Raya Enterprise Ltd.

2013-03-14

Sample No.	Picture	Part No.	Component	Material	Color
6		A/B/C	Clamp	Metal	Metallic
7		A/B/C	Spring	Metal	Metallic
8		A/B/C	Screw	Metal	Black
9		A/B/C	Bare PCB	PCB board	Green
10		A/B/C	Light	Plastic	Transparent Green
11		A/B/C	Base	Plastic	Transparent
12		A/B/C	Nail	Metal	Coppery
13		A/B/C	Wire	Metal	Coppery
14		B	Housing	Plastic	Blue
15		C	Housing	Plastic	Black

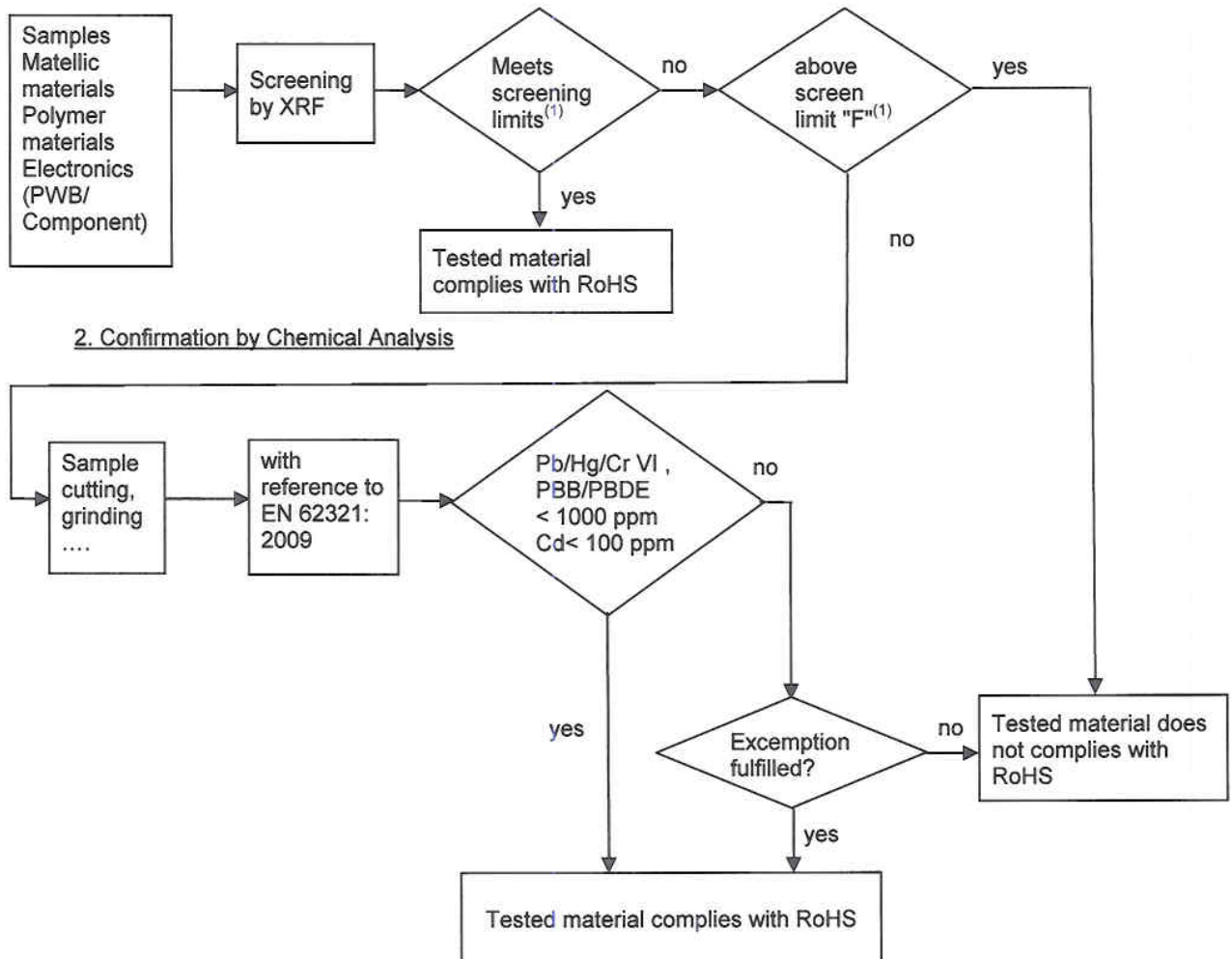


Test Report No. : 10040708 001
Customer : Raya Enterprise Ltd.

2013-03-14

Testing procedure:

1. Screening by X-RAY Fluorescence Spectrometry (XRF)



Test Report No. : 10040708 001
 Customer : Raya Enterprise Ltd.
 Test Method : Cadmium, Lead, Mercury, Chromium, Bromine
 With reference to EN 62321:2009, (XRF)

2013-03-14

1. Screening by X-Ray Fluorescence Spectrometry (XRF)

Sample No.		1	2	3	4
Cadmium (Cd)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Lead (Pb)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Mercury (Hg)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Chromium (Cr)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Bromine (Br)	[mg/kg]	n.d.	n.d.	n.d.	n.d.

Sample No.		5	6	7	8
Cadmium (Cd)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Lead (Pb)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Mercury (Hg)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Chromium (Cr)	[mg/kg]	n.d.	n.d.	>640	n.d.
Bromine (Br)	[mg/kg]	n.d.	n.a.	n.a.	n.a.

Sample No.		9	10	11	12
Cadmium (Cd)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Lead (Pb)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Mercury (Hg)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Chromium (Cr)	[mg/kg]	n.d.	n.d.	n.d.	n.d.
Bromine (Br)	[mg/kg]	>240	n.d.	n.d.	n.a.

Sample No.		13	14	15
Cadmium (Cd)	[mg/kg]	n.d.	n.d.	n.d.
Lead (Pb)	[mg/kg]	n.d.	n.d.	n.d.
Mercury (Hg)	[mg/kg]	n.d.	n.d.	n.d.
Chromium (Cr)	[mg/kg]	n.d.	n.d.	n.d.
Bromine (Br)	[mg/kg]	n.a.	n.d.	n.d.

Notes:

- n.d. - not detected
- n.a. - not applicable
- LoD - Limit of Detection
- mg/kg is equal to ppm (parts per million)
- figures highlighted in bold letters indicate high findings

Remark:(1)



XRF Screening limits for different matrices.

Materials	Concentration (ppm)				
	Cd	Cr	Pb	Hg	Br
Polymeric	P ≤ 60 < X ≤ 140 < F	P ≤ 640 < X	P ≤ 670 < X ≤ 1330 < F	P ≤ 660 < X ≤ 1340 < F	P ≤ 290 < X
Metallic	P ≤ 60 < X ≤ 140 < F	P ≤ 640 < X	P ≤ 670 < X ≤ 1330 < F	P ≤ 660 < X ≤ 1340 < F	NA
Electronic Components	P ≤ 40 < X ≤ 160 < F	P ≤ 440 < X	P ≤ 470 < X ≤ 1530 < F	P ≤ 460 < X ≤ 1540 < F	P ≤ 240 < X

Test Report No. : 10040708 001 2013-03-14
 Customer : Raya Enterprise Ltd.
 Test Method : Cd, Pb, Hg, Cr VI, PBB/PBDE - determination with reference to EN 62321:2009

2. Confirmation by Chemical Analysis

Sample No.	LoD	7	9
Cadmium (Cd) [mg/kg]	2	- ¹⁾	- ¹⁾
Lead (Pb) [mg/kg]	2	- ¹⁾	- ¹⁾
Mercury (Hg) [mg/kg]	2	- ¹⁾	- ¹⁾
Chromium VI (Cr VI) [mg/kg]	1	n.d.	- ¹⁾
PBBs [mg/kg]	10	- ¹⁾	n.d.
PBDEs [mg/kg]	10	- ¹⁾	n.d.

Notes:

- n.d. - not detected
- n.a. - not applicable
- LoD - Limit of Detection
- mg/kg is equal to ppm (parts per million)
- ¹⁾ Test covered by 1st action procedure

	Cd	Cr(VI)	Pb	Hg	PBBs	PBDEs
Maximum permissible Limit acc. to 2011/65/EU (mg/kg)	100	1000	1000	1000	1000	1000

--- End of Test-Report ---

