



**CENTRE OF TESTING SERVICE  
INTERNATIONAL**

**OPERATE ACCORDING TO ISO/IEC 17025**

# **TEST REPORT**

**RoHS 2011/65/EU**

**Test Report Number : CNB3131105-04159-C**



**CTS (Ningbo) Testing Service Technology Co., Ltd.**

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**1 General Information****1.1 Application Details**

Name : YUEQING LANGIR ELECTRIC CO.,LTD.  
Address : 4F,NO.188, LIUQING NORTH ROAD, LIUSHI TOWN,YUEQING  
CITY,ZHEJIANG PROVINCE, CHINA  
Contact : /  
Telephone : +86-577-62737672  
Fax : +86-577-62737671  
Mobile telephone : 8613695747282  
Email : sales@sunshinele.com

**1.2 Manufacturer & Buyer**

Manufacturer name : YUEQING LANGIR ELECTRIC CO.,LTD.  
Address : 4F,NO.188, LIUQING NORTH ROAD, LIUSHI TOWN,YUEQING  
CITY,ZHEJIANG PROVINCE, CHINA  
Contact : /  
Telephone : +86-577-62737672  
Fax : +86-577-62737671  
Mobile telephone : 8613695747282  
Email : sales@sunshinele.com  
Buyer name : /

**1.3 Description of the Test Item**

Sample name : VANDAL RESISTANT PUSHBUTTON SWITCH  
Model No. : L25,V12,V16,V19,V22,P12,LS16,L16,L19,L19A,L19M,LF19,L22,PZ  
Brand name : LANGIR  
Condition of sample(s) : EFFECTIVE

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## 2 Test Results

### 2.1 General Information

#### 2.1.1 Sample Receiving Date

Nov. 5, 2013

#### 2.1.2 Testing Period

Nov. 5, 2013 to Nov. 20, 2013

#### 2.1.3 Test Requested

In accordance with the RoHS Directive 2011/65/EU Annex II.

#### 2.1.4 Test Method

Test Item(s)	Test Method	Test Instrument
Lead (Pb)	With reference to IEC 62321:2008	ICP-AES
Cadmium (Cd)	With reference to IEC 62321:2008	ICP-AES
Mercury (Hg)	With reference to IEC 62321:2008	ICP-AES
Chromium VI (Cr VI)	With reference to IEC 62321:2008	UV-Vis
PBBs	With reference to IEC 62321:2008	GC-MS
PBDEs		

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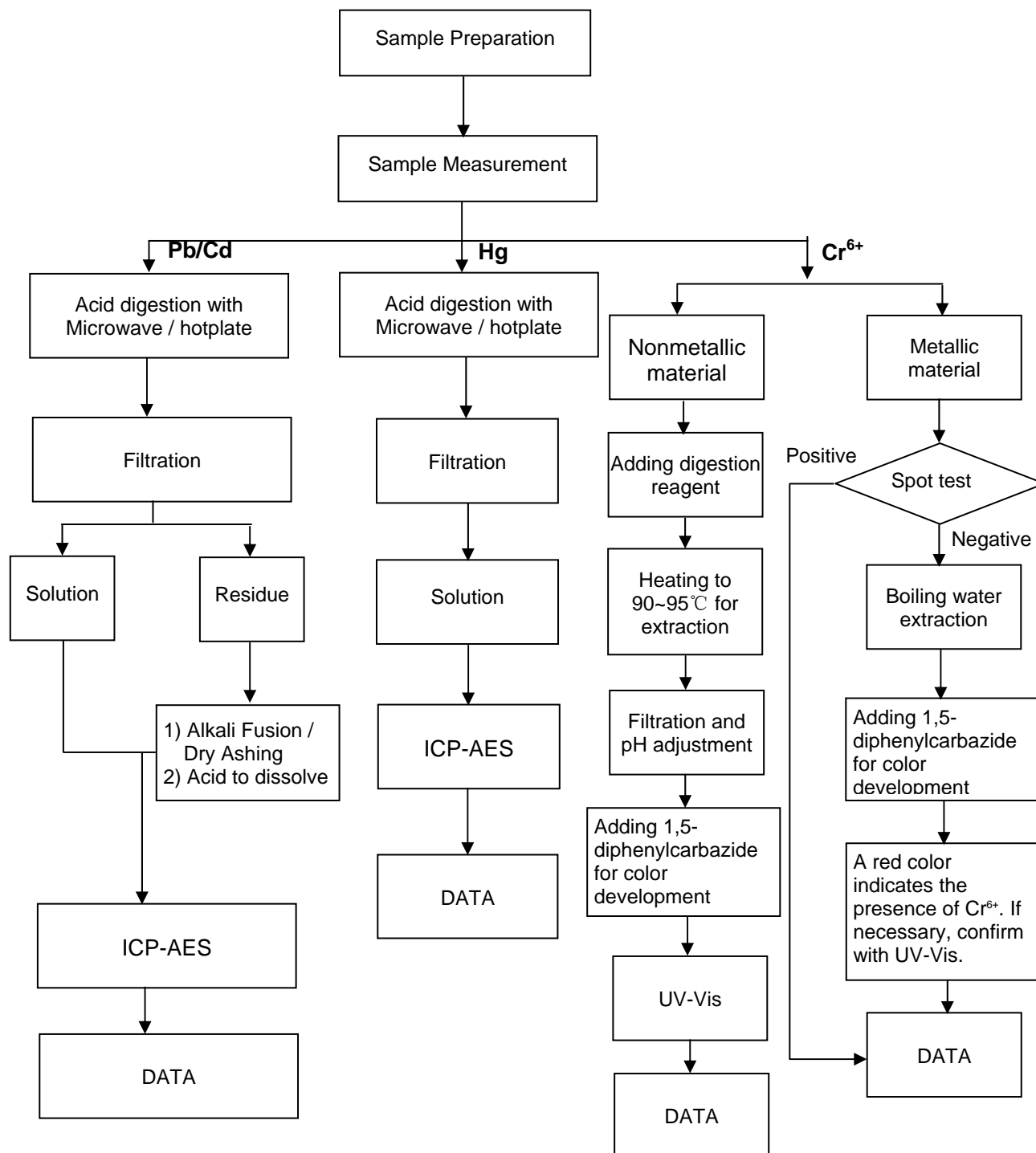
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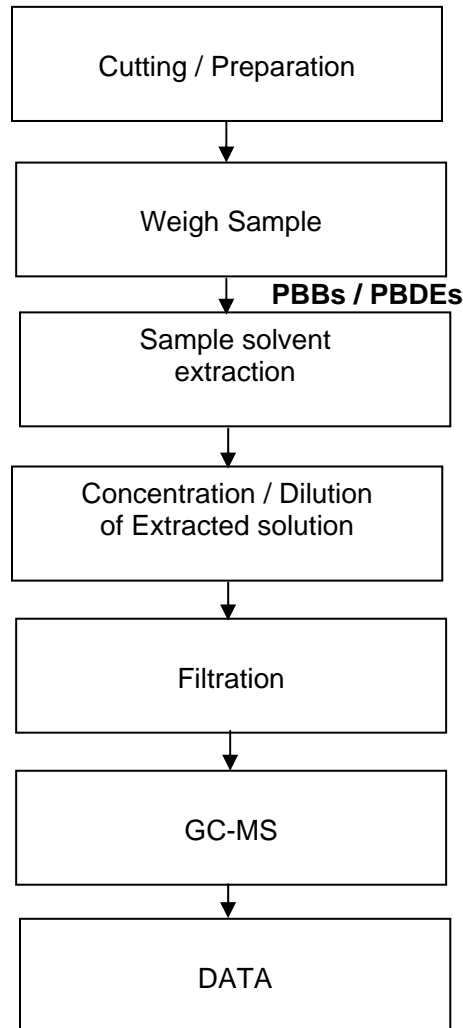
### 2.1.5 Test Method Flow Chart



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**2.2 Conclusion**

Based on the performed tests on submitted samples, the results of Lead, Cadmium, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

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### 2.3 Results

Test items		Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium (CrVI)	PBBs	PBDEs
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acceptable Limit		1000	100	1000	1000	1000	1000
1	Black soft plastic washer	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2	Bright silver metal	N.D.	N.D.	N.D.	Negative	N.A.	N.A.
3	Bright silver hexagonal nut	1.8×10 <sup>4</sup> *	35	N.D.	Negative	N.A.	N.A.
4	Golden metal wafer	56	N.D.	N.D.	Negative	N.A.	N.A.
5	Blue plastic	14	N.D.	N.D.	N.D.	N.D.	N.D.
6	Black plastic	17	N.D.	N.D.	N.D.	N.D.	N.D.
7	Soldering tin and solder	222	N.D.	N.D.	Negative	N.A.	N.A.
8	LED	Transparent body	N.D.	N.D.	N.D.	N.D.	N.D.
9		Pin	215	N.D.	N.D.	Negative	N.A.
10	Color wheel inductance	Blue body	N.D.	N.D.	N.D.	N.D.	N.D.
11		Pin	49	N.D.	N.D.	Negative	N.A.
12	White semi-transparent soft plastic	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
13	White plastic gasket	10	N.D.	N.D.	N.D.	N.D.	N.D.
14	White plastic washer	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
15	Transparent plastic pipe	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

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- Note :
1. Specimens, which requested to determine Cadmium, Mercury and Lead content, have been dissolved completely.
  2. N.D. = not detected (less than MDL)
  3. N.A. = not applicable
  4. 1 mg/kg=1 ppm=0.0001%
  5. **Spot –test:**  
Negative = Absence of CrVI coating, Positive = Presence of CrVI coating;  
(The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed)  
**Boiling-water-extraction:**  
Negative = Absence of CrVI coating  
Positive = Presence of CrVI coating; the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50cm<sup>2</sup> sample surface area.
  6. **Positive** indicates the presence of CrVI on the tested areas and result be regarded as conflict with RoHS requirement.  
**Negative** indicates the absence of CrVI on the tested areas and result be regarded as no conflict with RoHS requirement.
  7. \*According to the declaration from client, the source of lead in the sample could be from the copper alloy material. Lead as a copper alloy containing which is under 4% (40000ppm) is exempted from the requirement of RoHS Directive (2011/65/EU Annex III).

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8. The method detect limit for each hazardous substances, and determined individual PBBs and individual PBDEs are:

Method Detect Limit in mg/kg		
Heavy Metals	Lead (Pb)	2
	Cadmium (Cd)	2
	Mercury (Hg)	2
	Chromium (CrVI)	2
PBBs	Monobromobiphenyl	5
	Dibromobiphenyl	5
	Tibromobiphenyl	5
	Tetrabromobiphenyl	5
	Pentabromobiphenyl	5
	Hexabromobiphenyl	5
	Heptabromobiphenyl	5
	Octabromobiphenyl	5
	Nonabromodiphenyl	5
PBDEs	Decabromodiphenyl	5
	Monobromodiphenyl ether	5
	Dibromodiphenyl ether	5
	Tibromodiphenyl ether	5
	Tetrabromodiphenyl ether	5
	Pentabromodiphenyl ether	5
	Hexabromodiphenyl ether	5
	Heptabromodiphenyl ether	5
	Octabromodiphenyl ether	5
Nonabromodiphenyl ether	5	
Decabromodiphenyl ether	5	

Written by: *Jessie*

Inspected by: *Susei*

Approved by: *Jan*



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

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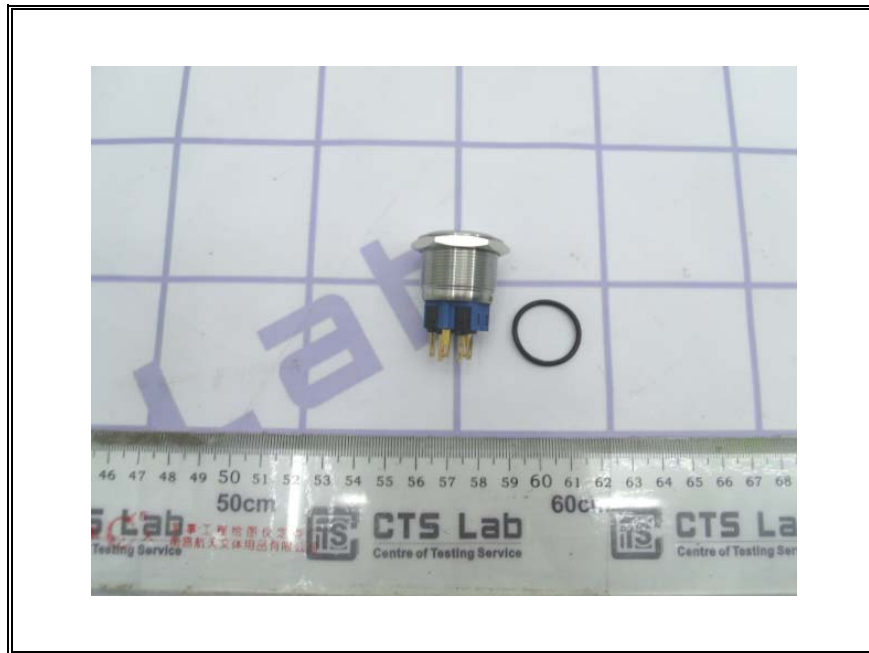
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### 3 Sample Reference Photo



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