

# Test Report

No. CANEC1503944801

Date: 31 Mar 2015

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DONGGUAN SANYOU ELECTRICAL APPLIANCES CO.,LTD

NO.62,TANGPU WEST ROAD,PUXINHU,TANGXIA TOWN,DONGGUAN CITY,GAUNGDONG  
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : Relay

SGS Job No. : CP15-012421 - GZ

Model No. : SRD

Date of Sample Received : 20 Mar 2015

Testing Period : 20 Mar 2015 - 27 Mar 2015

Test Requested : Selected test(s) as requested by client.

Test Method : Please refer to next page(s).

Test Results : Please refer to next page(s).

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Almay Gao  
Approved Signatory



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Test Results :

### Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN15-039448.001	Black plastic(a)+black plastic(b)
SN2	CAN15-039448.002	Mixed all metal parts(mixed)

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

### Elementary Analysis & Flame Retardants

Test Method : (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.  
 (2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.  
 (3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.  
 (4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.  
 (5)With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Unit	MDL	001
Cadmium (Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	10
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (CrVI)	mg/kg	2	ND
Sum of PBBs	mg/kg	-	ND
Monobromobiphenyl	mg/kg	5	ND
Dibromobiphenyl	mg/kg	5	ND
Tribromobiphenyl	mg/kg	5	ND
Tetrabromobiphenyl	mg/kg	5	ND
Pentabromobiphenyl	mg/kg	5	ND
Hexabromobiphenyl	mg/kg	5	ND
Heptabromobiphenyl	mg/kg	5	ND
Octabromobiphenyl	mg/kg	5	ND
Nonabromobiphenyl	mg/kg	5	ND
Decabromobiphenyl	mg/kg	5	ND
Sum of PBDEs	mg/kg	-	ND



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<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Monobromodiphenyl ether	mg/kg	5	ND
Dibromodiphenyl ether	mg/kg	5	ND
Tribromodiphenyl ether	mg/kg	5	ND
Tetrabromodiphenyl ether	mg/kg	5	ND
Pentabromodiphenyl ether	mg/kg	5	ND
Hexabromodiphenyl ether	mg/kg	5	ND
Heptabromodiphenyl ether	mg/kg	5	ND
Octabromodiphenyl ether	mg/kg	5	ND
Nonabromodiphenyl ether	mg/kg	5	ND
Decabromodiphenyl ether	mg/kg	5	ND

## Elementary Analysis

Test Method : (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.  
 (2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.  
 (3)With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.  
 (4)With reference to IEC 62321:2008, determination of Hexavalent Chromium by spot test / Colorimetric Method using UV-Vis.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Cadmium (Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	ND
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (CrVI)	-	◇	Negative

## Notes :

(1)◇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 is Negative or 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 50 cm<sup>2</sup> sample surface area.

Information on storage conditions and production date of the tested sample is unavailable and thus results of Cr(VI) represent status of the sample at the time of testing.

## Hexabromocyclododecane (HBCDD)



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Test Method : Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s)	Unit	MDL	001
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

### Notes :

- (1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC:  
Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

## Phthalate

Test Method : Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	CAS NO.	Unit	MDL	001
Dibutyl Phthalate (DBP)	84-74-2	%(w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%(w/w)	0.003	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%(w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%(w/w)	0.003	ND

### Notes :

Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC and the latest amending directive:

- (1) Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.
- (2) Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl Phthalates (DIBP) have been adopted in the draft of Commission Delegated Directive amending Annex II to Directive 2011/65/EU of the European Parliament, and the regulatory limit of each restricted substances should be 0.1%.

Remark 1: Results of 001 shown are of the total weight of mixed samples.

Remark 2: The sample(s) of 001~002 was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value and only for reference.



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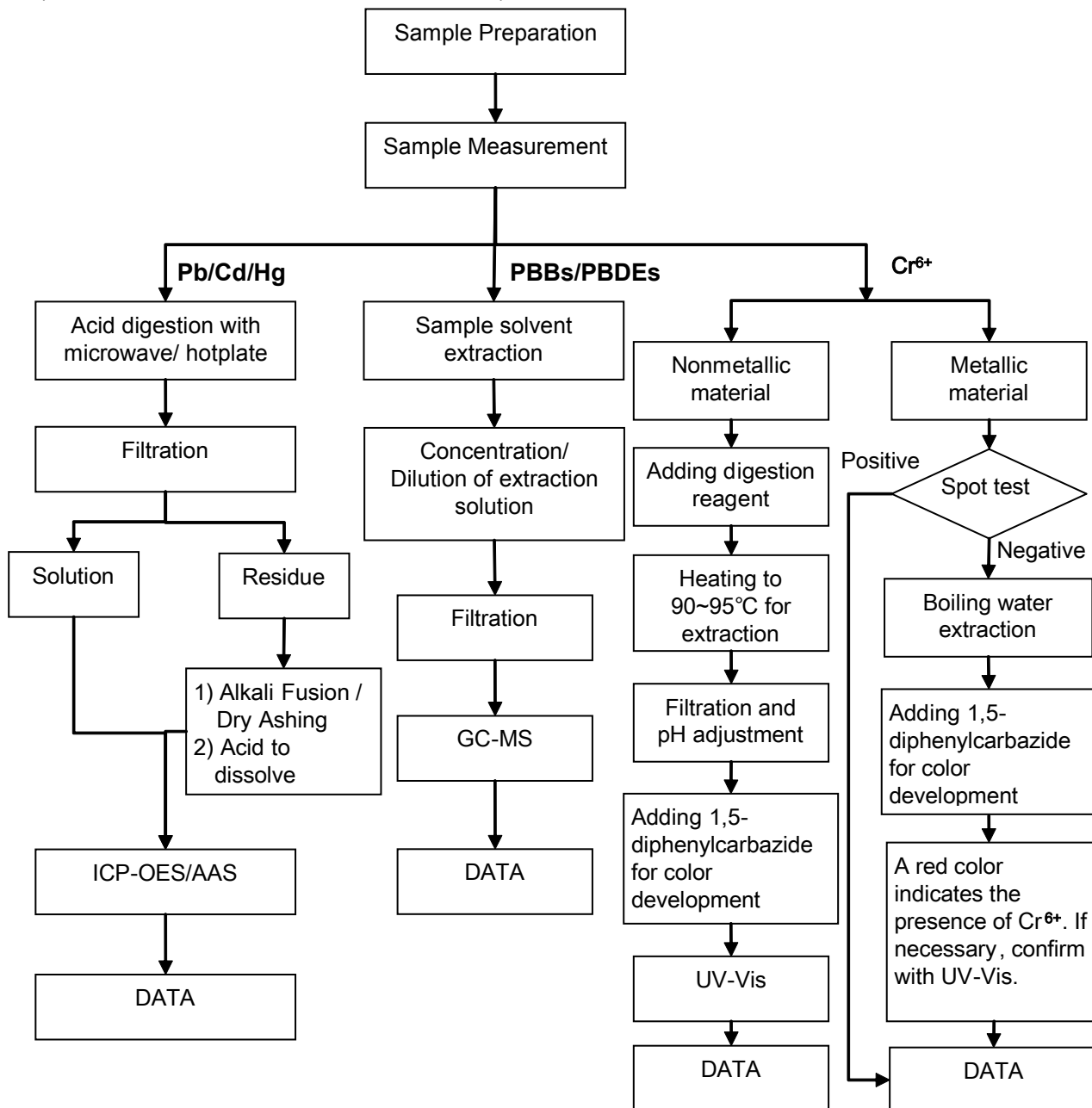
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### ATTACHMENTS

#### RoHS Testing Flow Chart

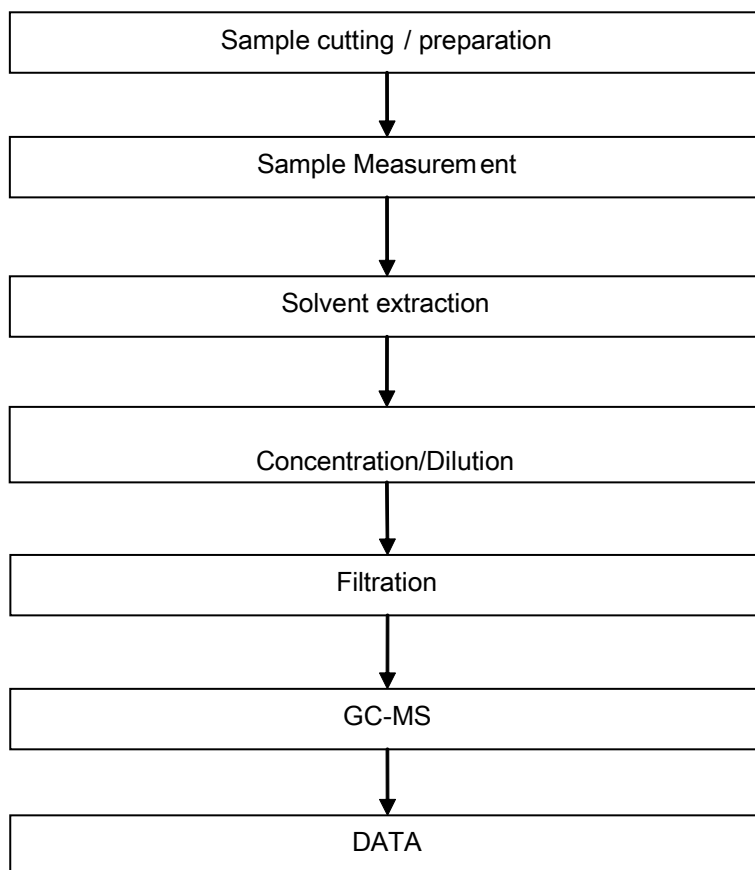
- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre -conditioning method according to below flow chart (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



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### Phthalates Testing Flow Chart

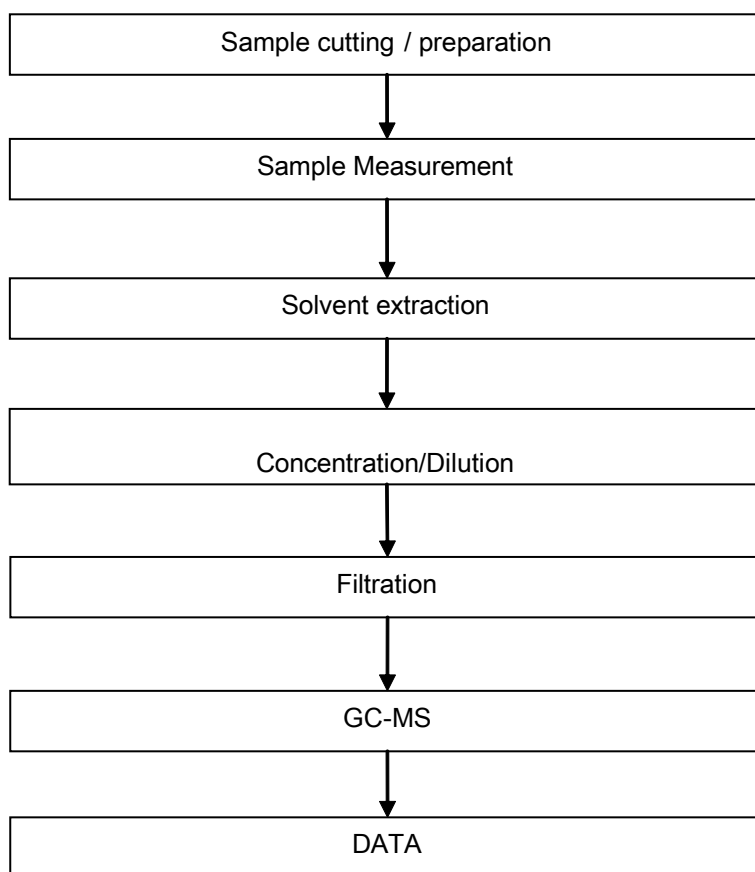
- 1) Name of the person who made testing: Sunny Hu
- 2) Name of the person in charge of testing: Cutey Yu



## ATTACHMENTS

### HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Sunny Hu
- 2) Name of the person in charge of testing: Cutey Yu



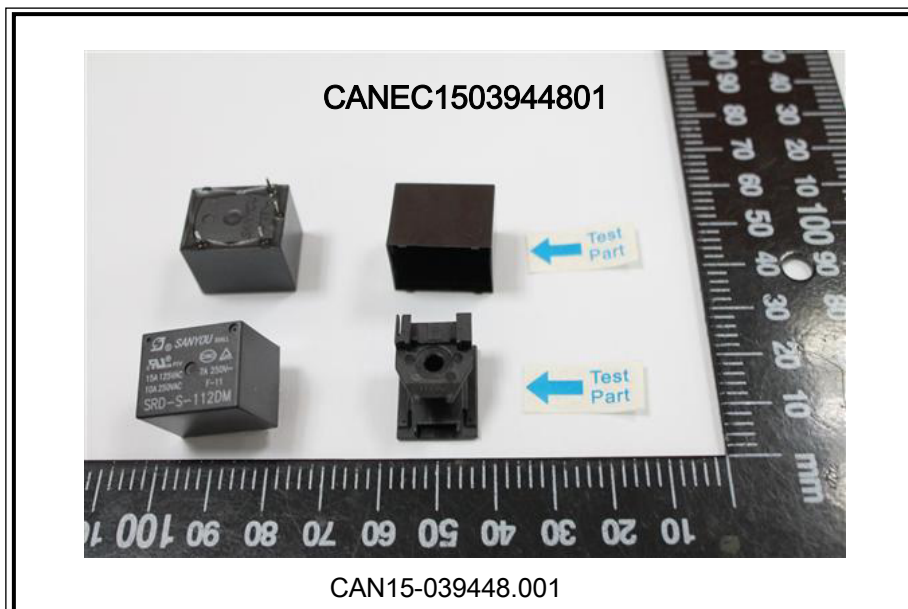
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Sample photo:



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