

Test Report

No. CANEC1603418903

Date: 24 Mar 2016

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DONGGUAN NANJING ELECTRONICS LTD.

YIHONGRONG HIGH-TECH INDUSTRIAL PARK, NO.7, CHILING
INDUSTRIAL ROAD, HOUJIE, DONGGUAN, GUANGDONG, CHINA

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

SGS Job No. : CP16-011289 - SZ

Model No. : D0-41

Client Ref. Info. : D0-35, LL-34, LL-41

Date of Sample Received : 09 Mar 2016

Testing Period : 09 Mar 2016 - 16 Mar 2016

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).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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



Alkene Liang
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-034189.001	Black/red body w/ black printing
SN2	CAN16-034189.002	Silver-gray metal pin

Remarks :

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

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

- 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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
 - (6) With reference to EN 14372:2004, determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	81940 ▲
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	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



SGS-CTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Service Chemical Laboratory

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Test Item(s)	Limit	Unit	MDL	001
Sum of PBDEs	1,000	mg/kg	-	ND
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
Dibutyl phthalate (DBP)	1,000	mg/kg	30	ND
Butyl benzyl phthalate (BBP)	1,000	mg/kg	30	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1,000	mg/kg	30	ND
Diisobutyl Phthalates (DIBP)	1,000	mg/kg	30	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

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 62321-7-1:2015 , determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
 (2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI
 b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
 c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive -



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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.
IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

US California Proposition 65 - Flame retardant(s)

Test Method : With reference to US EPA 3550C:2007&US EPA 8270D: 2007, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Tris(1,3-dichloro-2-propyl) Phosphate(TDCPP)	13674-87-8	25	mg/kg	5	ND
Tris(2-chloroethyl) Phosphate(TCEP)	115-96-8	25	mg/kg	5	ND
Tris(1-chloro-2-propyl) Phosphate (TCPP)	13674-84-5	25	mg/kg	5	ND
2-Ethylhexyl tetrabromobenzoate(TBB)	183658-27-7	25	mg/kg	5	ND
Bis(2-ethylhexyl)-2,3,4,5-tetrabromophthalate(TBPH)	26040-51-7	25	mg/kg	5	ND
Triphenyl Phosphate(TPP)	115-86-6	25	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
2,2-bis(chloromethyl)trimethylen ebis(bis(2-chloroethyl) phosphate) (V6)	38051-10-4	25	mg/kg	5	ND
4-(tert-Butyl)phenyl diphenyl phosphate (MDPP)	56803-37-3	25	mg/kg	5	ND
Bis(tert-Butylphenyl) phenyl phosphate (DBPP)	65652-41-7	25	mg/kg	5	ND
tris-(4-tert-Butylphenyl) phosphate (TBPP)	78-33-1/ 28777-70-0	25	mg/kg	5	ND
Pentabromodiphenyl ethers (Penta-BDEs)	32534-81-9	25	mg/kg	5	ND
Octabromodiphenyl ethers (Octa-BDEs)	32536-52-0	25	mg/kg	5	ND
Decabromodiphenyl ether (Deca-BDE)	1163-19-5	25	mg/kg	5	ND
Tris-(2,3-dibromopropyl) Phosphate (Tris/TDBPP)	126-72-7	25	mg/kg	5	ND

Notes :

The limit is referenced to the requirement as stated in the Superior Court of the State of California Case No. RG-13667688.

Remark 1▲: According to the declaration from the client, Lead (Pb) in specimen 001 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 7(c)-I]: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

Remark 2: Results & photo(s) of this report refer to test report CANEC1603418901.



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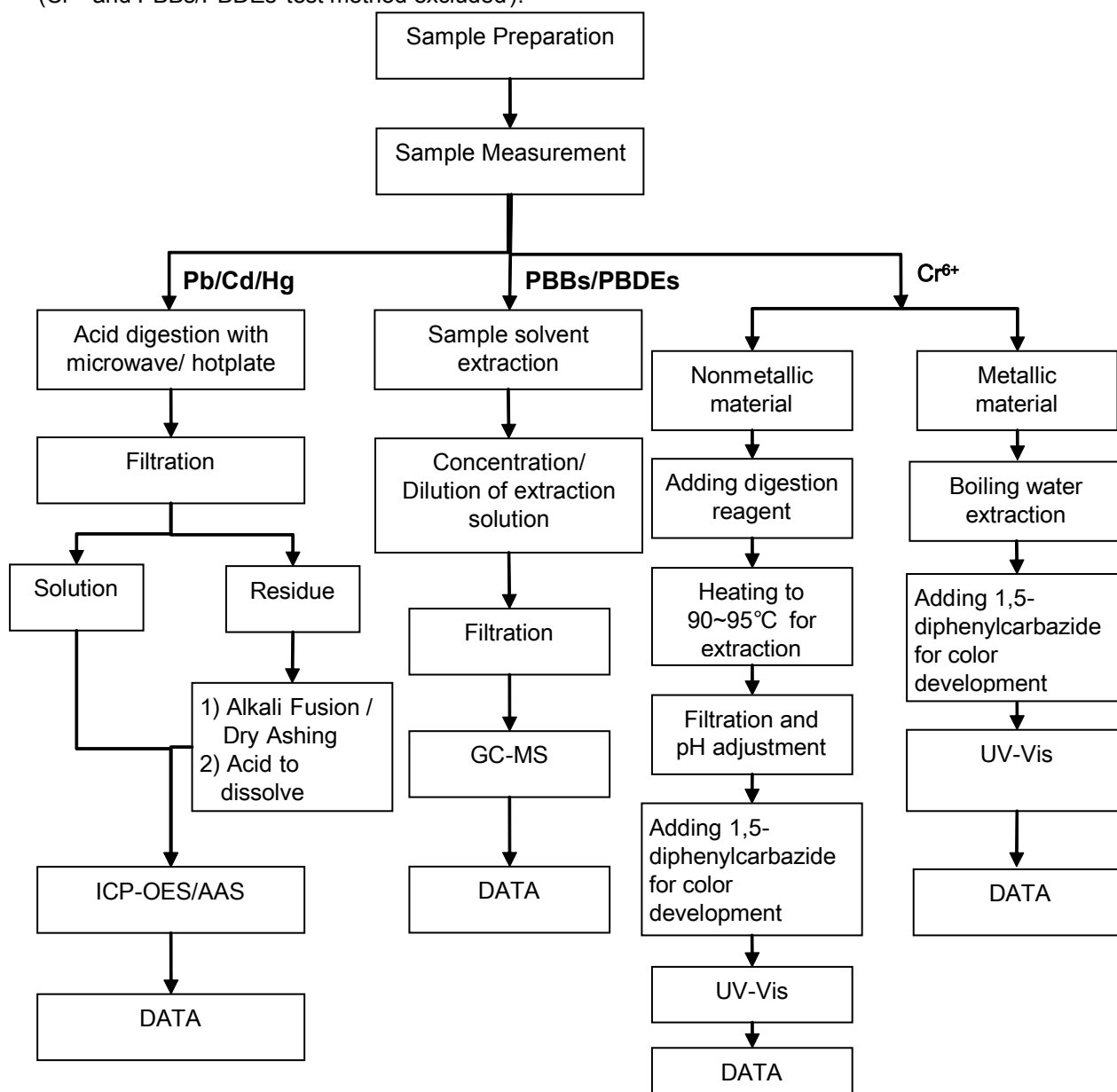
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

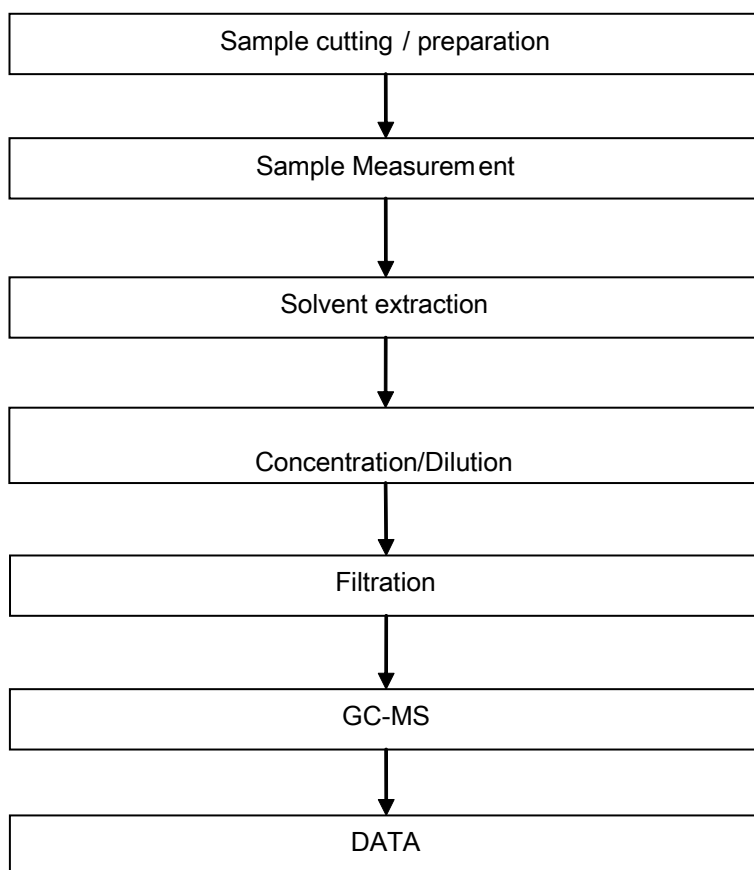
- 1) Name of the person who made testing: Bruce Xiao / Sunny Hu
- 2) Name of the person in charge of testing: Bella Wang / Cutey Yu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr⁶⁺ and PBBs/PBDEs test method excluded).



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Phthalates Testing Flow Chart

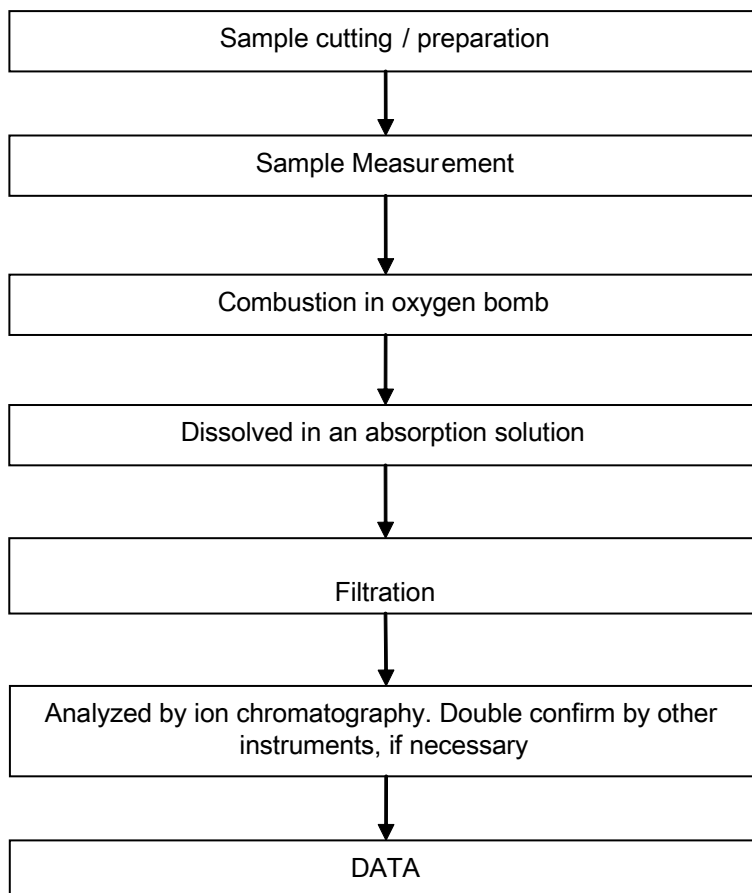
- 1) Name of the person who made testing: Sunny Hu
- 2) Name of the person in charge of testing: Cutey Yu



ATTACHMENTS

Halogen Testing Flow Chart

- 1) Name of the person who made testing: Hanming Xiao
- 2) Name of the person in charge of testing: Bella Wang



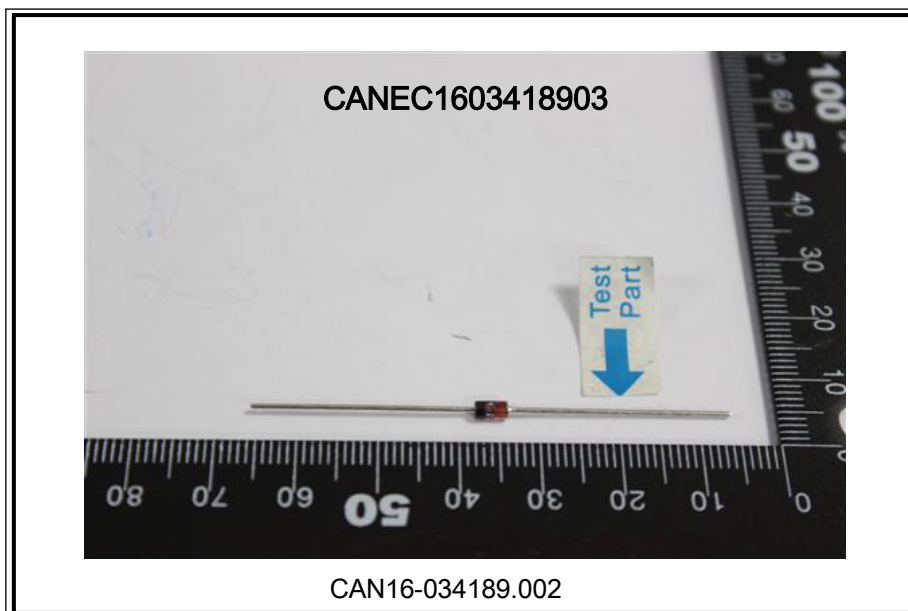
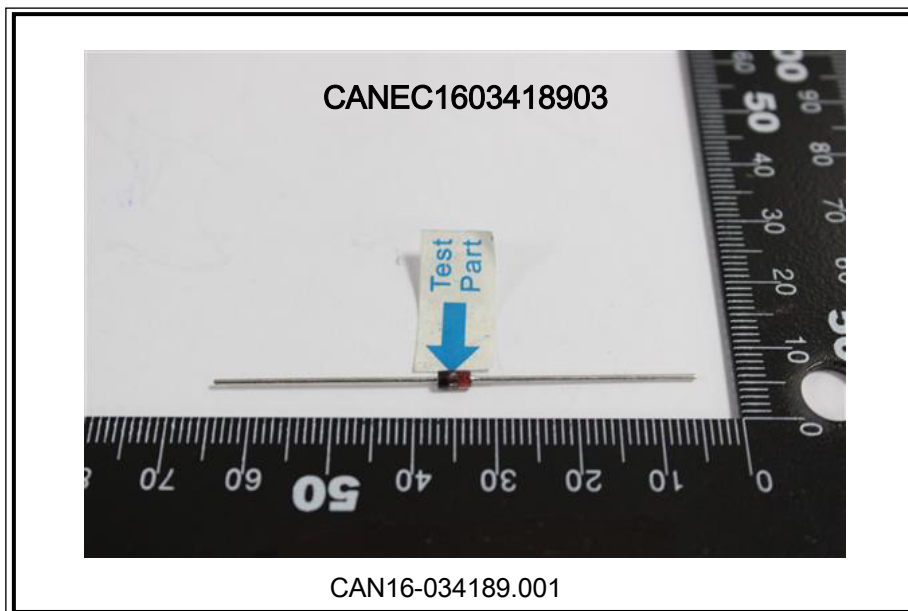
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Sample photo:



SGS authenticate the photo on original report only

*** End of Report ***