

Test Report

No. CANEC1809824907

Date: 30 May 2018

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WINDAY ELECTRONIC (DONG GUAN) CO.,LTD

LONG QUAN INDUSTRY XIN-JIU-WEI TERRITORY LIAO BU VILLAGE DONGGUAN CITY GUANGDONG
523000, CHINA

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

SGS Job No. : CP18-025307 - SZ

Model No. : MPP

Client Ref. Info. : MEF, MEM, MPM, MPH, MEH, PPN, MPPS, MTF, MTP, PSM, MMS,
MPJ, EMPP, EMPE, TMPE, FMPE, DMPE, DMPP, PEM, PEI, PPI,
TMPE, TMPP, EPEM, MPEM

Date of Sample Received : 21 May 2018

Testing Period : 21 May 2018 - 28 May 2018

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



Almay Gao
Approved Signatory



Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN18-098249.008	Red material
SN2	CAN18-098249.009	Transparent film w/ grey surface
SN3	CAN18-098249.010	Silvery metal
SN4	CAN18-098249.011	Silvery metal
SN5	CAN18-098249.012	"METALLIZEDFILM CAPACITOR"(mixed)

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 : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017 , IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES , UV-Vis and GC-MS .

Test Item(s)	Limit	Unit	MDL	008	009
Cadmium (Cd)	100	mg/kg	2	ND	ND
Lead (Pb)	1,000	mg/kg	2	ND	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	8	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND



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Test Item(s)	Limit	Unit	MDL	008	009
Monobromodiphenyl ether	-	mg/kg	5	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	ND

Notes :

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

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

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit	MDL	010	011
Cadmium (Cd)	100	mg/kg	2	ND	ND
Lead (Pb)	1,000	mg/kg	2	25	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND	ND

Notes :

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



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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 - 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.

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>012</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	104
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Remark: The sample(s) of 012 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.



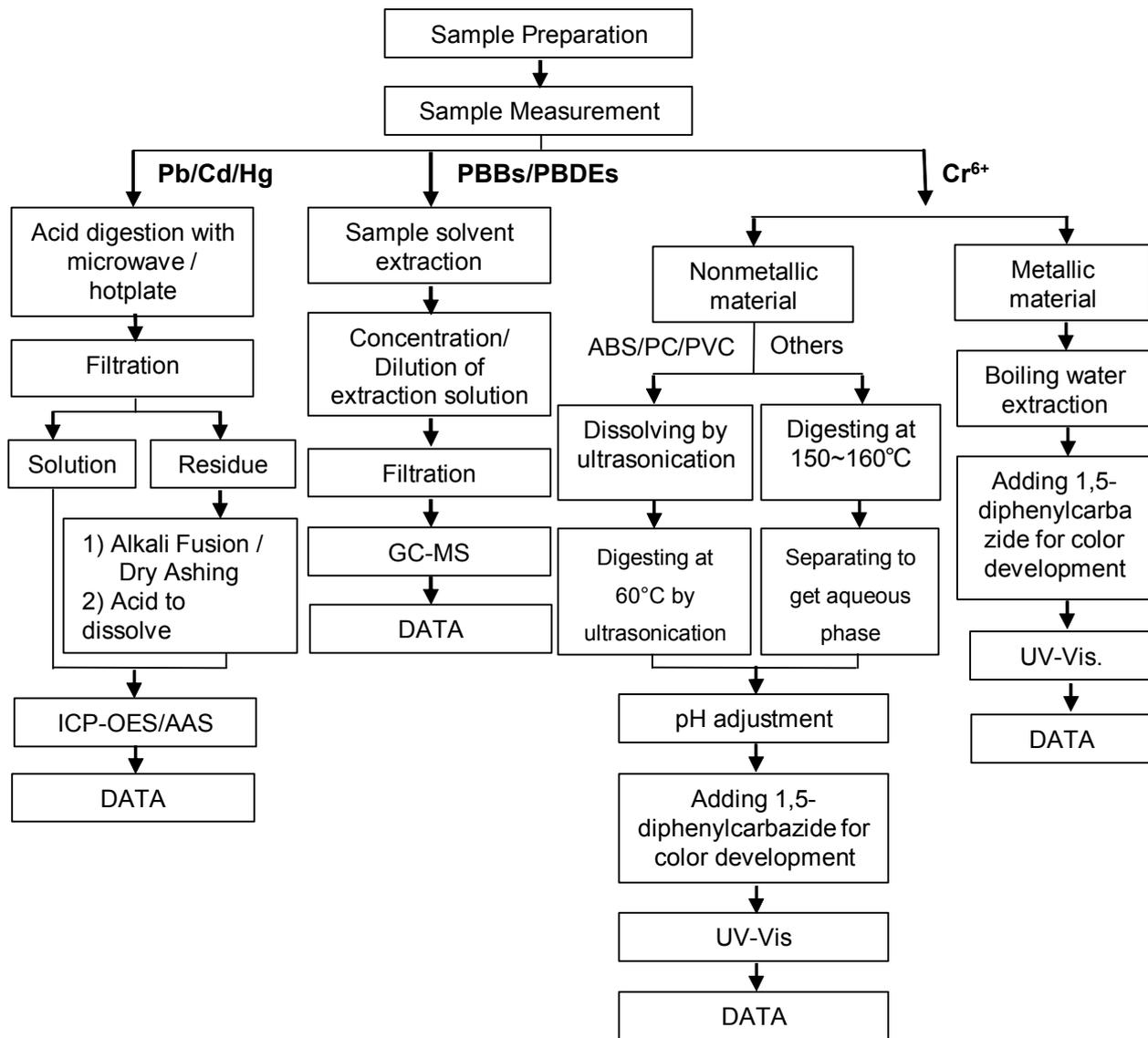
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

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



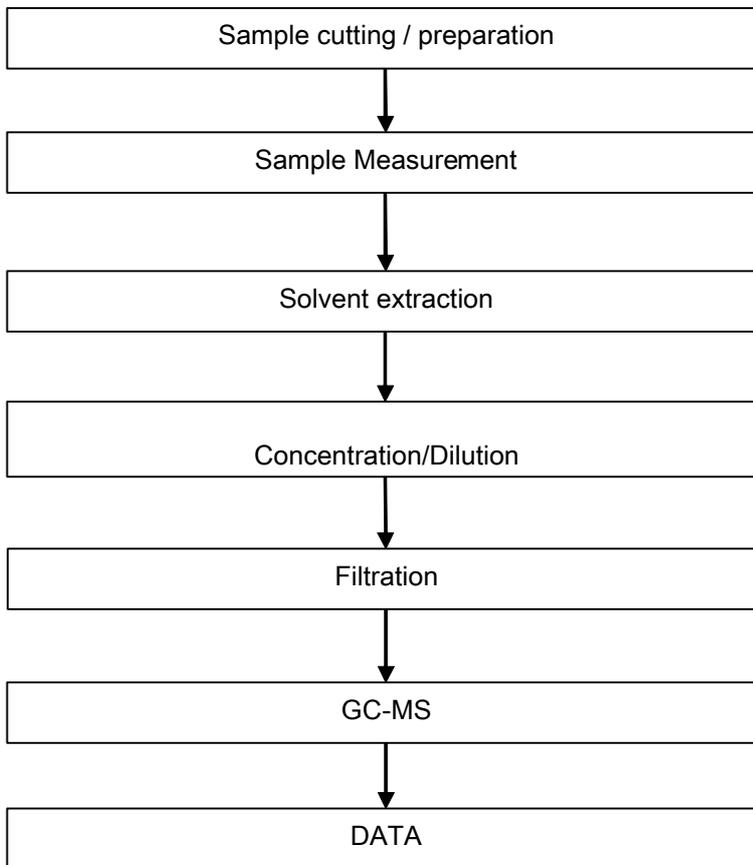
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Phthalates Testing Flow Chart

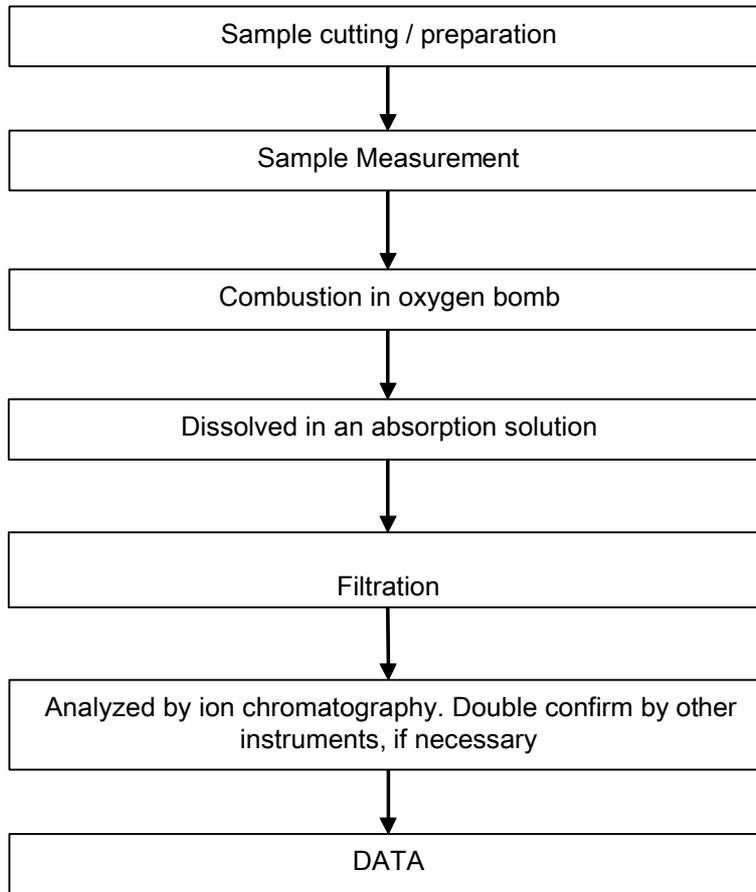
- 1) Name of the person who made testing: Sunny Hu
- 2) Name of the person in charge of testing: Qiong Liu



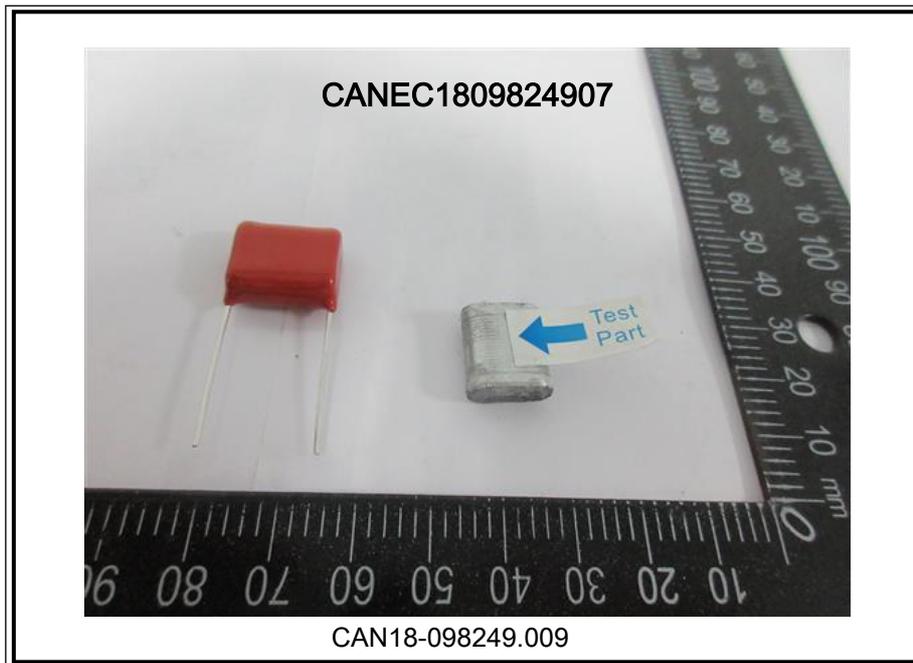
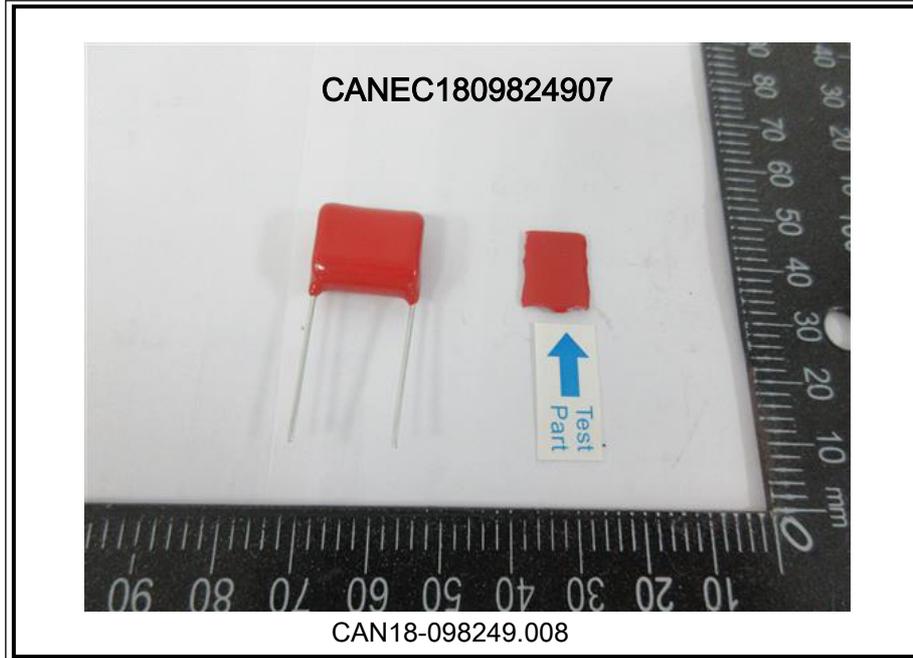
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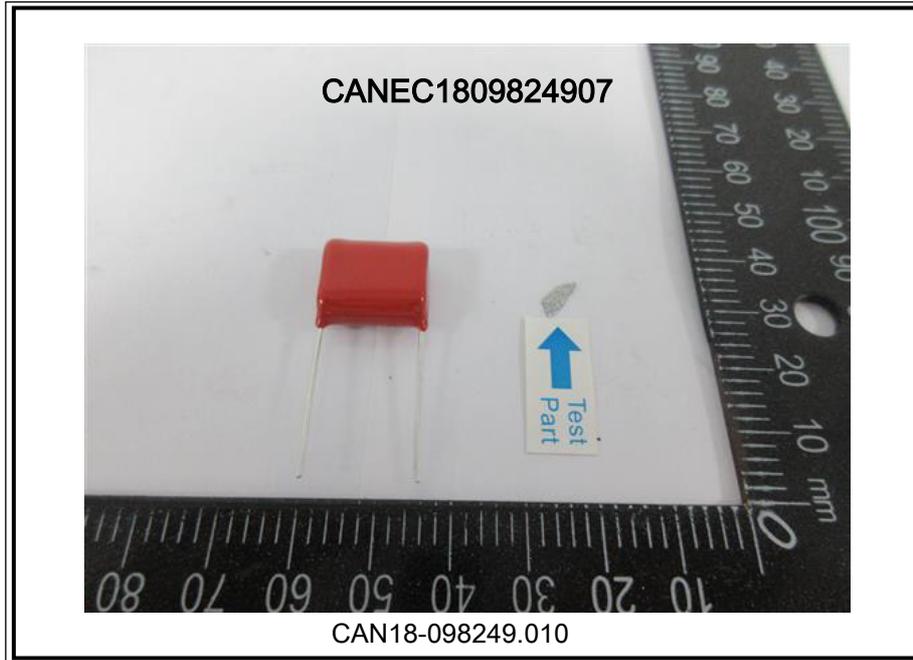
Halogen Testing Flow Chart

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



Sample photo:





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