

Test Report

No. CANEC1617327001

Date: 09 Sep 2016

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JILIN SMART PACK ELECTRIC CO.,LTD

NO.100.CHANGJIANG ROAD HIGH TECH ZONE JILIN CITY,JILIN PROVINCE CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : DIP23 PACKAGE

SGS Job No. : CP16-056203 - SZ

Model No. : DIP23 PACKAGE

Date of Sample Received : 01 Sep 2016

Testing Period : 01 Sep 2016 - 08 Sep 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 selected part of 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

Violet

Violet, Shi
Approved Signatory



Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-173270.001	Black plastic(finished product)
SN2	CAN16-173270.002	Silvery metal(finished product)
SN3	CAN16-173270.003	Copper-colored metal(semi-product)

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 IEC 62321-8:2013 (111/321/CD) , 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	ND
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



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Decabromobiphenyl	-	mg/kg	5	ND
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)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	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.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND
Lead (Pb)	1,000	mg/kg	2	8	4
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.
 (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.
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](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

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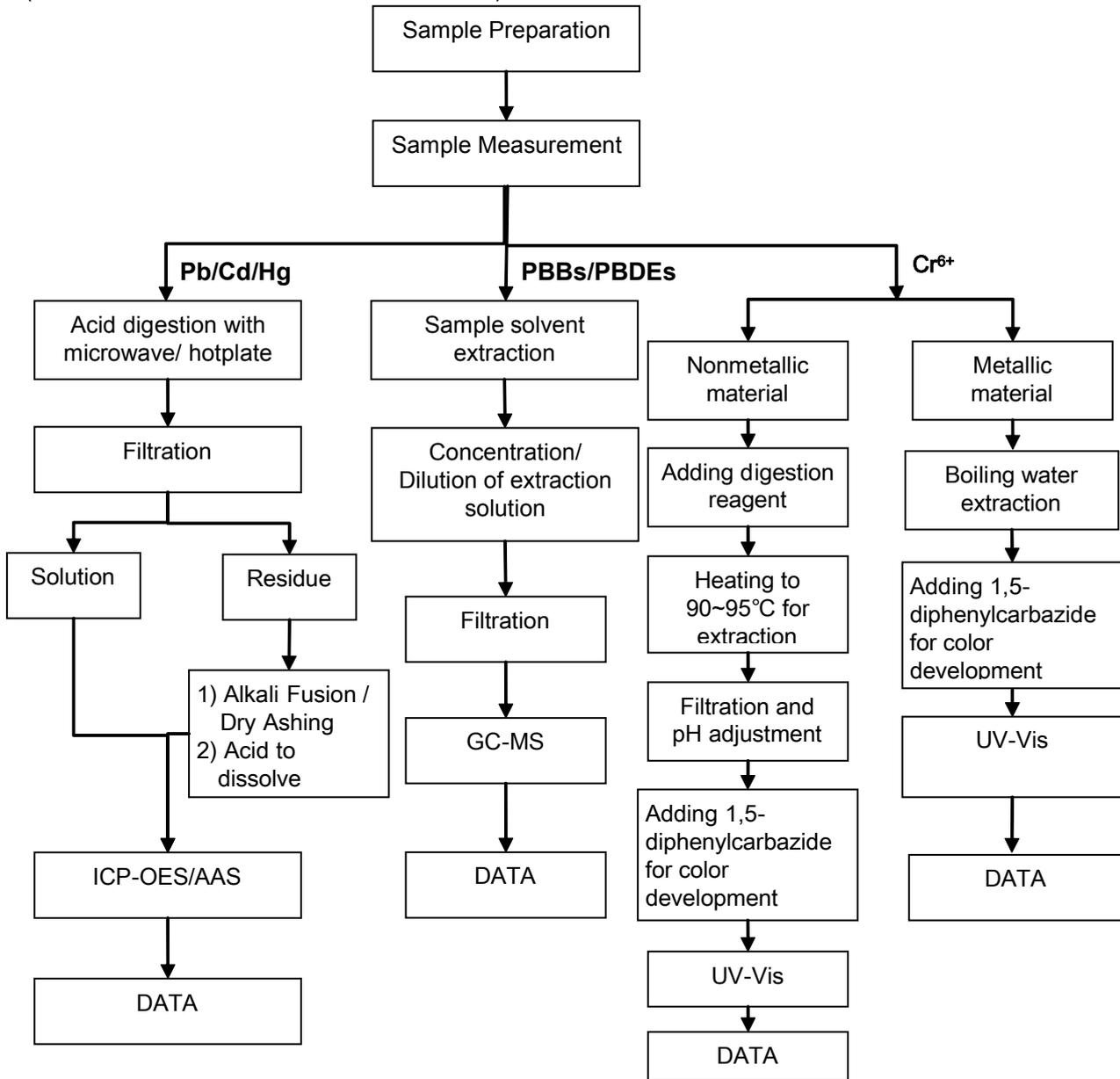
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Pb/Cd/Hg/Cr⁶⁺/PBBs/PBDEs Testing Flow Chart

- 1) Name of the person who made testing: 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).



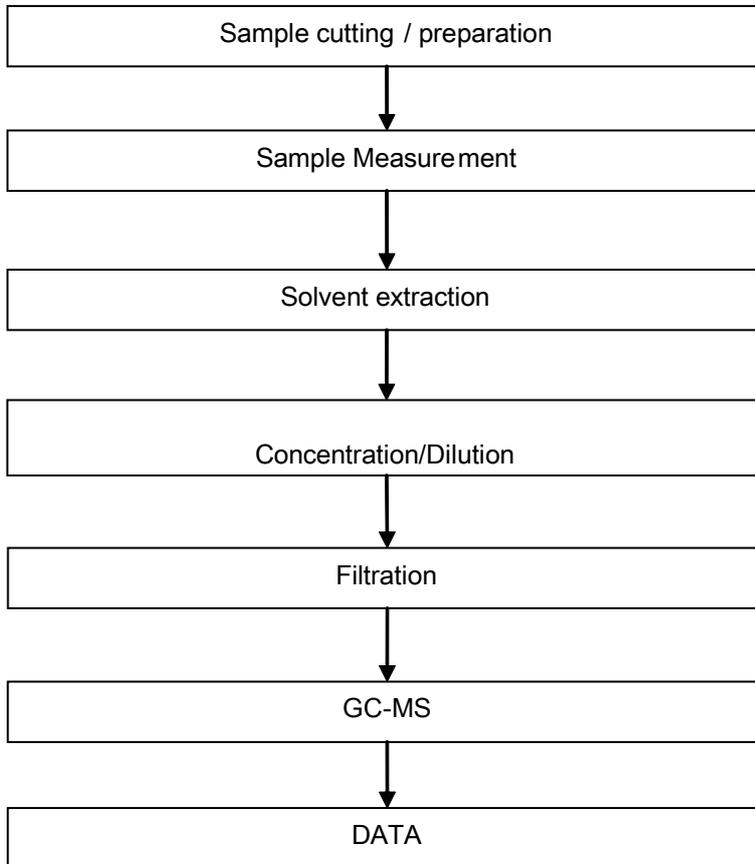
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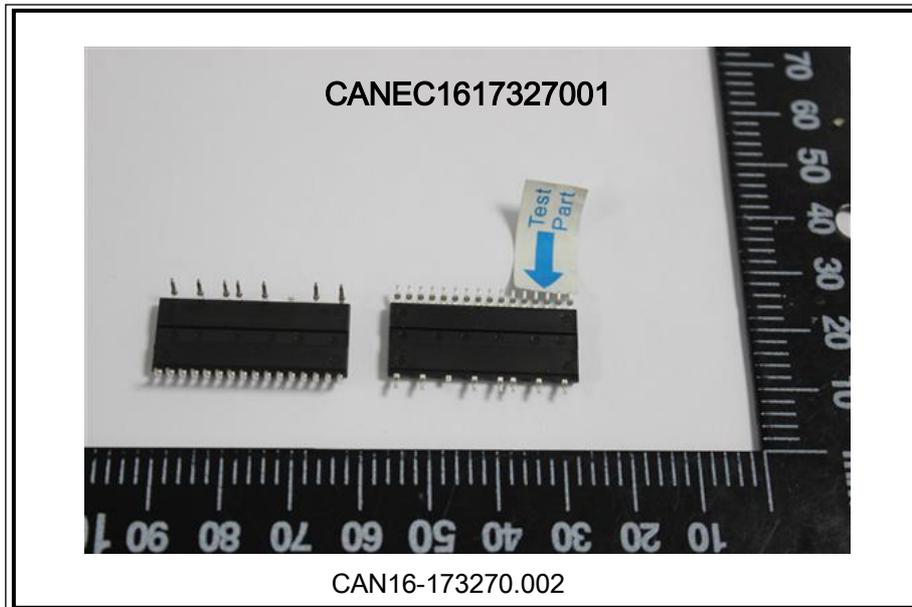
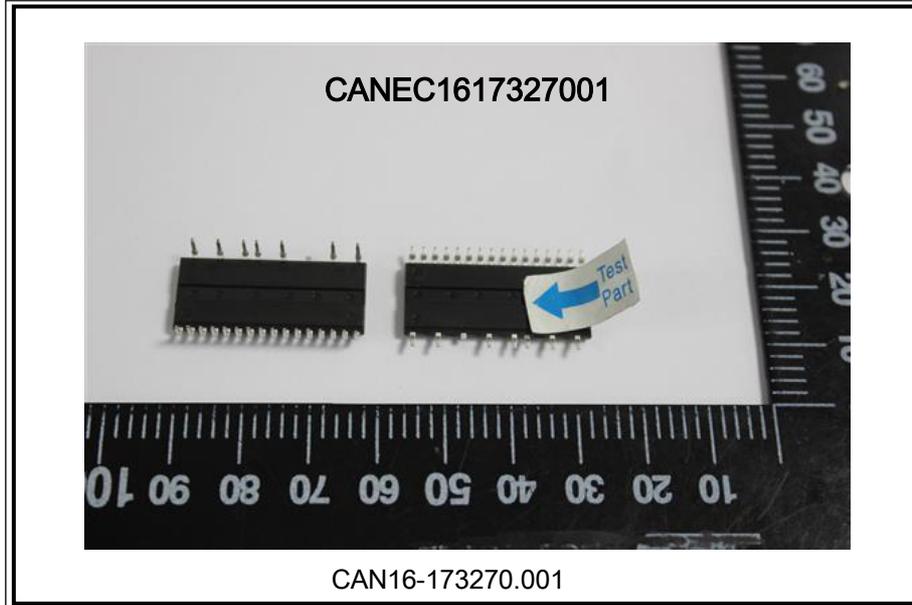
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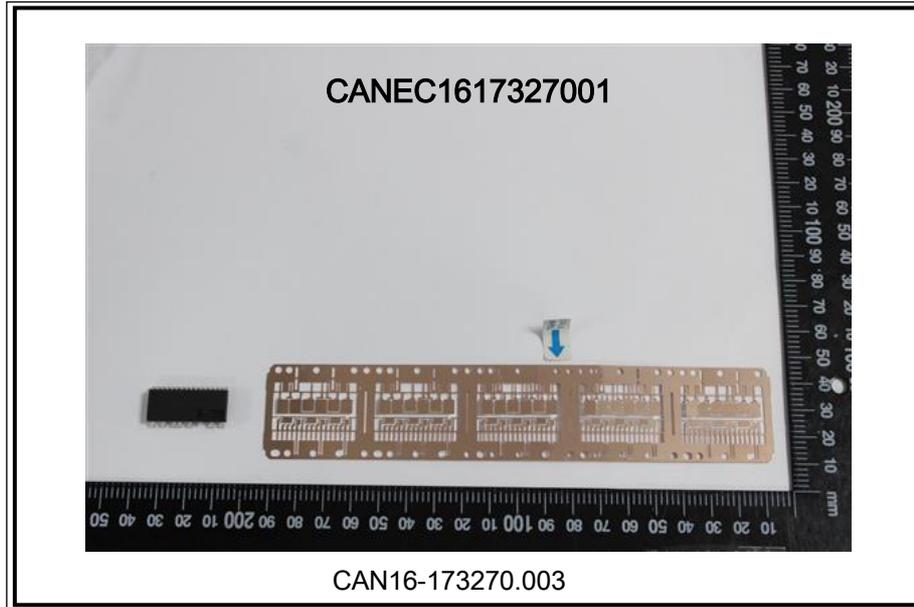
Phthalates Testing Flow Chart

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



Sample photo:





SGS authenticate the photo on original report only

*** End of Report ***