



Verification Report

Applicant : SRNE Solar Co., Ltd
Address : 4-5F, Building13A, Taihua Wutong Industrial Park, Gushu Development Zone, Hangcheng Street, Baoan, Shenzhen, China PR

Report on the submitted samples said to be:

Sample Name(s) : DC & Solar Charge Controller

Trade Mark : 

Part No. : MD1250N05, MD1230N05

Sample Received Date : May 20, 2022

Testing Period : May 20, 2022 ~ May 28, 2022

Date of Report : May 28, 2022

Results : Please refer to next page(s).

TEST REQUEST	CONCLUSION
As specified by client, based on the performed tests on submitted sample, the result of Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, Dibutyl Phthalate(DBP), Butylbenzyl Phthalate(BBP), Di-2-ethylhexyl Phthalate(DEHP) and Diisobutyl phthalate(DIBP) content comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.	PASS

Signed for and on behalf of LCS



Young/Laboratory Manager



**Results:****A. EU RoHS Directive 2011/65/EU and its amendment directives**

Test method: With reference to IEC 62321-1:2013&IEC 62321-2:2021&IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF)

Sample No.	Sample Description	Results						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr ^v	Br ^v		
						PBBs	PBDEs	
1	White plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
2	Transparent plastic glass	BL	BL	BL	BL	BL	BL	2022-05-20
3	Red plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
4	Black plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
5	PCB board	BL	BL	BL	BL	BL	BL	2022-05-20
6	Black IC	BL	BL	BL	BL	BL	BL	2022-05-20
7	Yellow resistance	BL	BL	BL	BL	BL	BL	2022-05-20
8	Black plastic block	BL	BL	BL	BL	BL	BL	2022-05-20
9	Tin solder	BL	BL	BL	BL	/	/	2022-05-20
10	Black resistance	BL	BL	BL	BL	BL	BL	2022-05-20
11	Black IC	BL	BL	BL	BL	BL	BL	2022-05-20
12	Gray metal block	BL	BL	BL	BL	/	/	2022-05-20
13	Yellow plastic leather	BL	BL	BL	BL	BL	BL	2022-05-20
14	Silver metal shell	BL	BL	BL	BL	/	/	2022-05-20
15	Black plastic pad	BL	BL	BL	BL	BL	BL	2022-05-20
16	Grey plastic paper	BL	BL	BL	BL	BL	BL	2022-05-20
17	Yellow plastic paper	BL	BL	BL	BL	BL	BL	2022-05-20
18	Silver metal pin	BL	BL	BL	BL	/	/	2022-05-20
19	Ferrous metal shell	BL	BL	BL	BL	/	/	2022-05-20
20	Yellow plastic sheet	BL	BL	BL	BL	BL	BL	2022-05-20
21	Copper wire	BL	BL	BL	BL	/	/	2022-05-20
22	Silver metal block	BL	BL	BL	BL	/	/	2022-05-20
23	Black plastic block	BL	BL	BL	BL	BL	BL	2022-05-20
24	Black plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
25	Silver metal screw	BL	BL	BL	BL	/	/	2022-05-20
26	Black plastic leather	BL	BL	BL	BL	BL	BL	2022-05-20
27	Silver metal shell	BL	BL	BL	BL	/	/	2022-05-20
28	Black plastic pad	BL	BL	BL	BL	BL	BL	2022-05-20
29	Grey plastic paper	BL	BL	BL	BL	BL	BL	2022-05-20
30	Yellow plastic paper	BL	BL	BL	BL	BL	BL	2022-05-20





Sample No.	Sample Description	Results						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr [▼]	Br [▼]		
						PBBs	PBDEs	
31	Silver metal pin	BL	BL	BL	BL	/	/	2022-05-20
32	Red resistance	BL	BL	BL	BL	BL	BL	2022-05-20
33	Silver metal shell	BL	BL	BL	BL	/	/	2022-05-20
34	Black plastic pad	BL	BL	BL	BL	BL	BL	2022-05-20
35	Black plastic pad	BL	BL	BL	BL	BL	BL	2022-05-20
36	Yellow plastic paper	BL	BL	BL	BL	BL	BL	2022-05-20
37	Grey plastic paper	BL	BL	BL	BL	BL	BL	2022-05-20
38	Silver metal pin	BL	BL	BL	BL	/	/	2022-05-20
39	Green plastic block	BL	BL	BL	BL	BL	BL	2022-05-20
40	White plastic block	BL	BL	BL	BL	BL	BL	2022-05-20
41	Black plastic block	BL	BL	BL	BL	BL	BL	2022-05-20
42	Silver sheet metal	BL	BL	BL	BL	/	/	2022-05-20
43	Silver metal gasket	BL	BL	BL	BL	/	/	2022-05-20
44	Black plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
45	White plastic paper	BL	BL	BL	BL	BL	BL	2022-05-20
46	Transparent plastic glass	BL	BL	BL	BL	BL	BL	2022-05-20
47	Red diode	BL	BL	BL	BL	BL	BL	2022-05-20
48	White plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
49	Green plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
50	Black IC	BL	BL	BL	BL	BL	BL	2022-05-20
51	Black IC	BL	BL	BL	BL	BL	BL	2022-05-20
52	White colloid	BL	BL	BL	BL	BL	BL	2022-05-20
53	White plastic block	BL	BL	BL	BL	BL	BL	2022-05-20
54	Gray plastic block	BL	BL	BL	BL	BL	BL	2022-05-20
55	Metal nut	BL	BL	BL	BL	/	/	2022-05-20
56	Ferrous metal block	BL	BL	BL	BL	/	/	2022-05-20
57	Silver wire	BL	BL	BL	BL	/	/	2022-05-20
58	White plastic wire skin	BL	BL	BL	BL	BL	BL	2022-05-20
59	Green plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
60	Red plastic thread cover	BL	BL	BL	BL	BL	BL	2022-05-20
61	Silver wire	BL	BL	BL	BL	/	/	2022-05-20
62	Red plastic shell	BL	BL	BL	BL	BL	BL	2022-05-20
63	Black plastic wire cover	BL	BL	BL	BL	BL	BL	2022-05-20



Shenzhen LCS Compliance Testing Laboratory Ltd.

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Scan code to check authenticity



Note:

1. Results were obtained by XRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-Vis(for Cr(VI)) and GC-MS(for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013(Unit: mg/kg).

Element	Polymers	Metals	Composite material
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	N/A	$BL \leq (250-3\sigma) < X$

Remark:

- BL= Below Limit
 - OL= Over Limit
 - X= The range of needing to do further testing
 - 3σ= The reproducibility of analytical instruments
 - N/A= Not applicable
 - LOD= Detection limit
2. The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
 3. The maximum permissible limit is quoted from the document RoHS Directive 2011/65/EU with amendment (EU) 2015/863.
 4. ▼=For restricted substances PBBs and PBDEs, the results show the total Br content, the restricted substance was Cr(VI), and the results showed the total Cr content.





RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium(Cd)	100
Lead(Pb)	1000
Mercury(Hg)	1000
Hexavalent Chromium(Cr(VI))	1000
Polybrominated biphenyls(PBBs)	1000
Polybrominated diphenylethers(PBDEs)	1000
Dibutyl Phthalate(DBP)	1000
Butylbenzyl Phthalate(BBP)	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	1000
Diisobutyl phthalate(DIBP)	1000

Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes. The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.



**B. EU RoHS Directive 2011/65/EU with amendment (EU) 2015/863 on Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, DBP, BBP, DEHP & DIBP content**Test method:

Lead(Pb) & Cadmium(Cd) Content:

With reference to IEC 62321-5:2013, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES) or Atomic absorption spectrometer (AAS).

Mercury(Hg) Content:

With reference to IEC 62321-4:2013+AMD1:2017 CSV, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES).

Hexavalent Chromium(Cr(VI)) Content:

With reference to IEC 62321-7-1:2015 or IEC 62321-7-2:2017, analysis was performed by UV-visible spectrophotometer (UV-Vis).

PBBs & PBDEs Content:

With reference to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

Phthalates(DBP, BBP, DEHP & DIBP) Content:

With reference to IEC 62321-8:2017, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

1) The test results of Phthalates(DBP, BBP, DEHP & DIBP)

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		1+2+3+4+5+6	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		7+8+10+11+13+15	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000





Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		16+17+20+23+24+26	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		28+29+30+32+34+35	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		36+37+39+40+41+44	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		45+46+47+48+49+50	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000





Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		51+52+53+54+58+59	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		60+62+63	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Note:

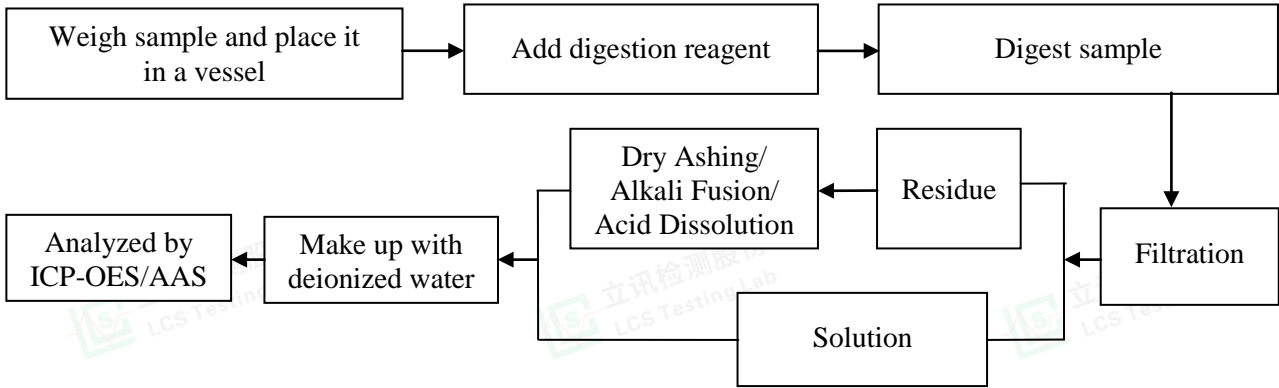
- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = milligrams per kilogram
- According to customer's requirement, only the appointed materials have been tested.



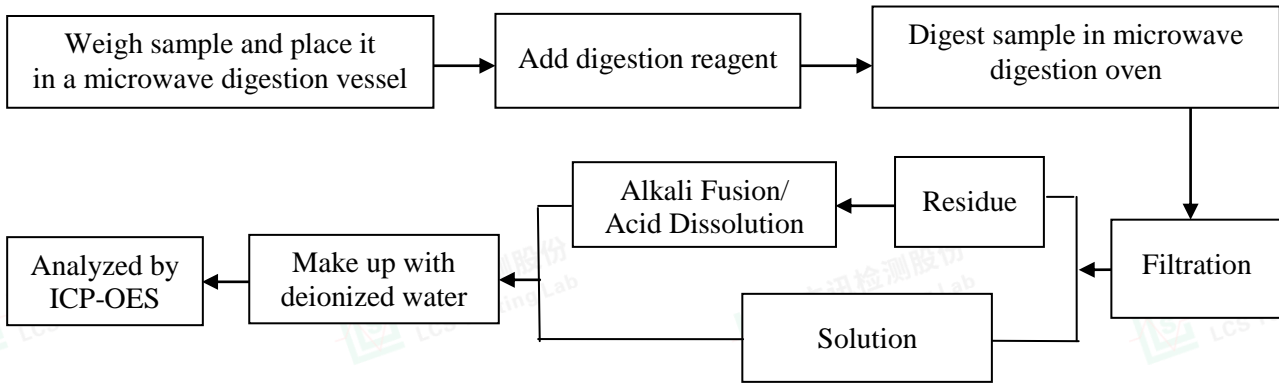


Test Process

1. Lead(Pb) & Cadmium(Cd): IEC 62321-5:2013

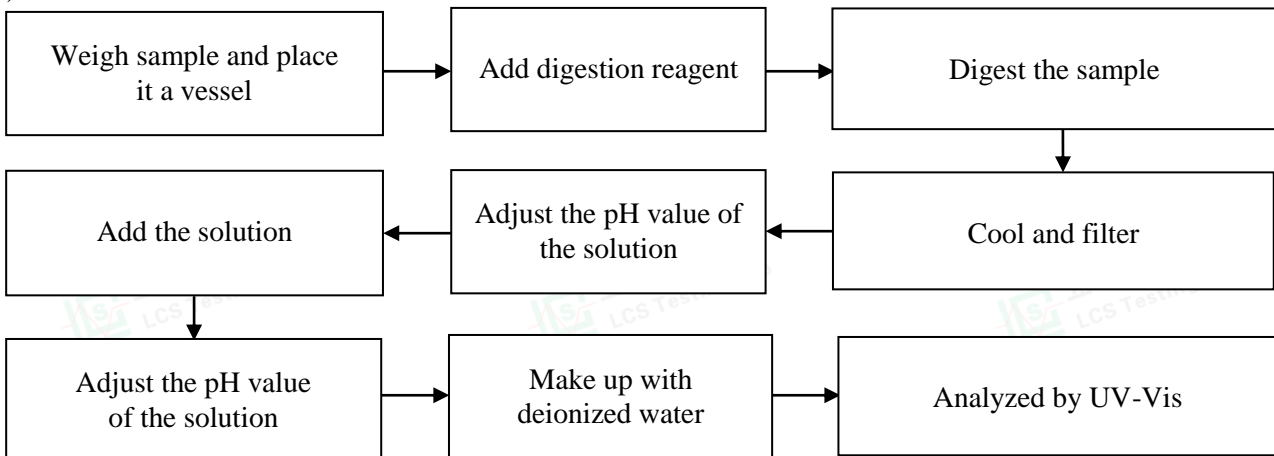


2. Mercury(Hg): IEC 62321-4:2013+AMD1:2017 CSV



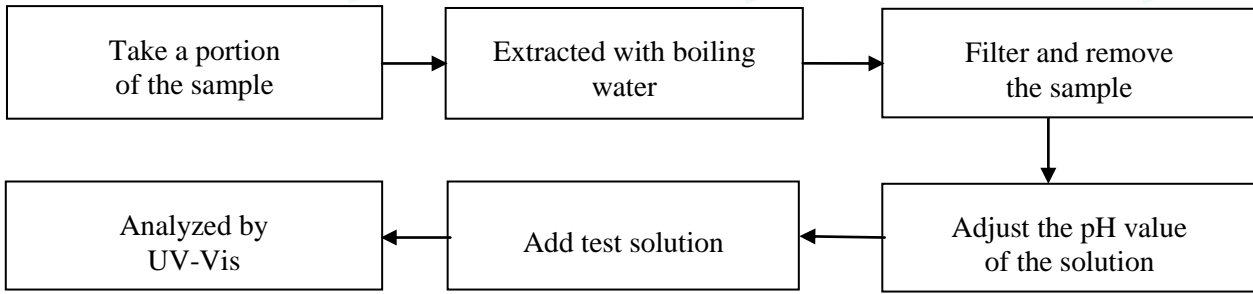
3. Hexavalent Chromium(Cr(VI))

1) IEC 62321-7-2:2017

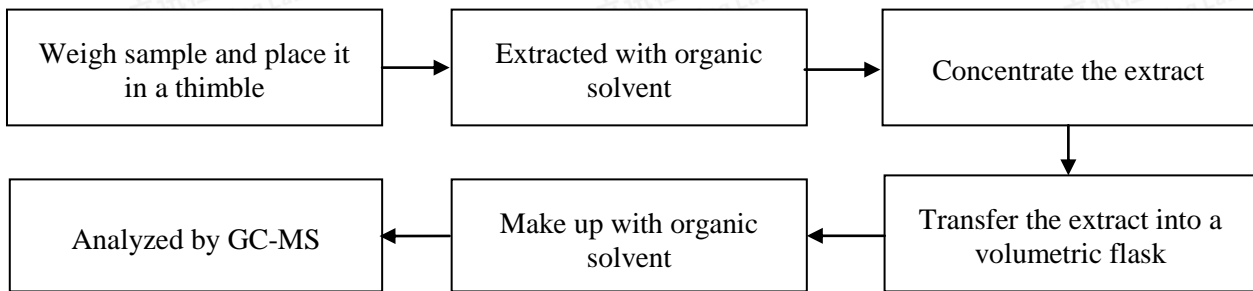




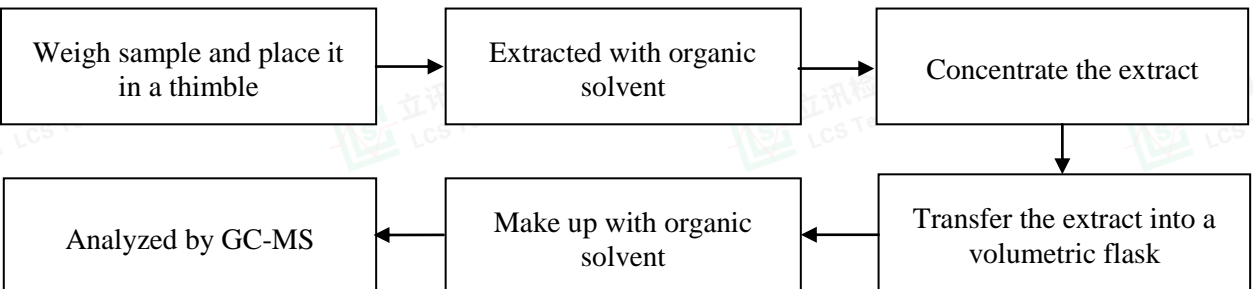
2) IEC 62321-7-1:2015



4. Polybrominated Biphenyls(PBBs) & Polybrominated Diphenyl Ethers(PBDEs) : IEC 62321-6:2015

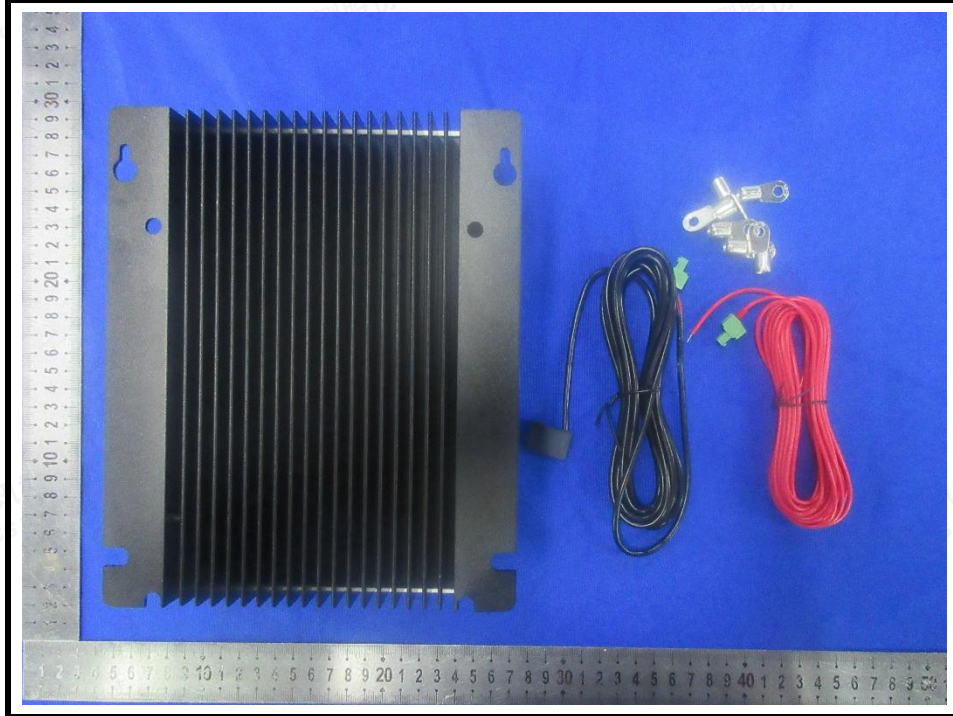


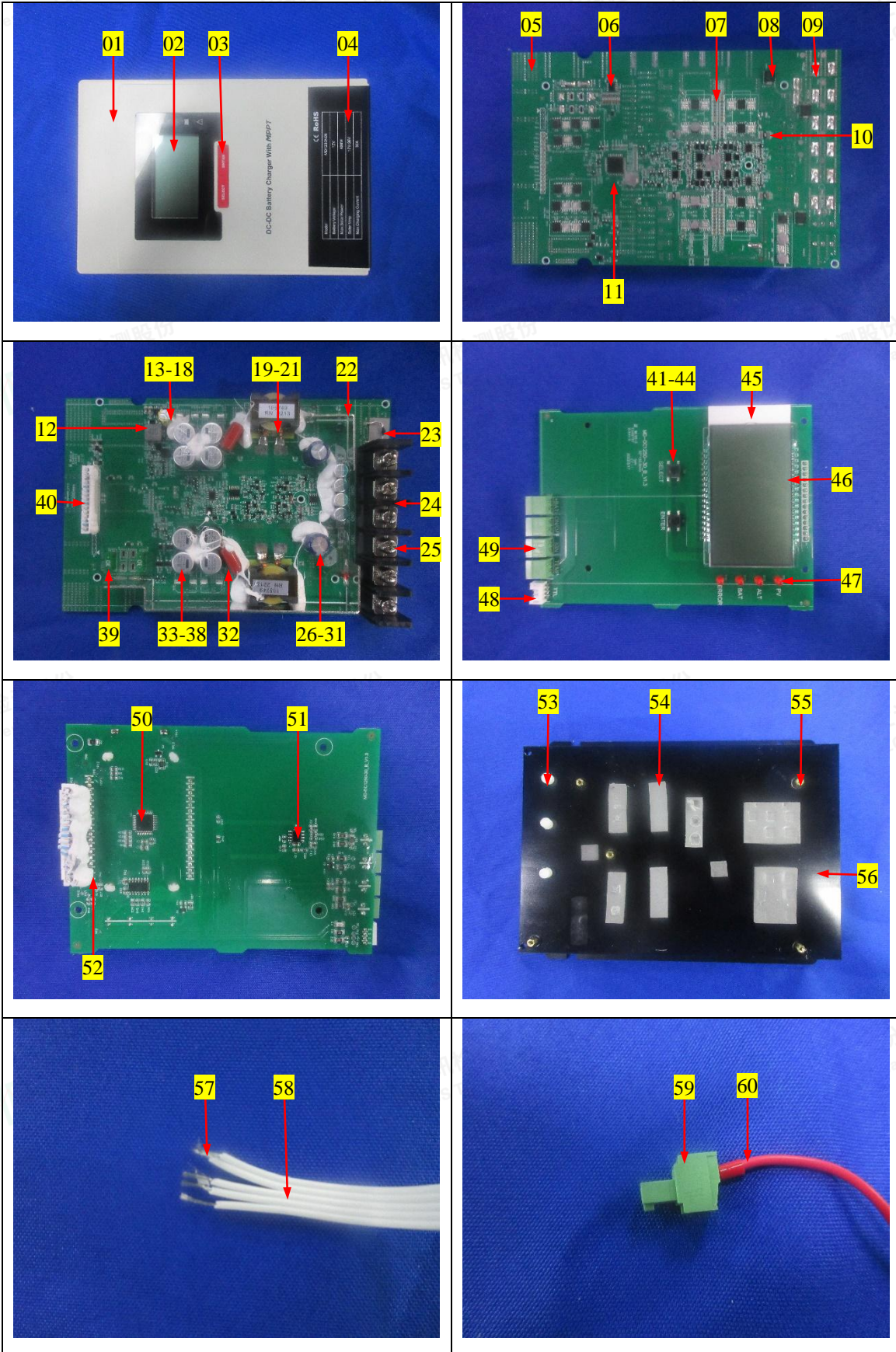
5. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017

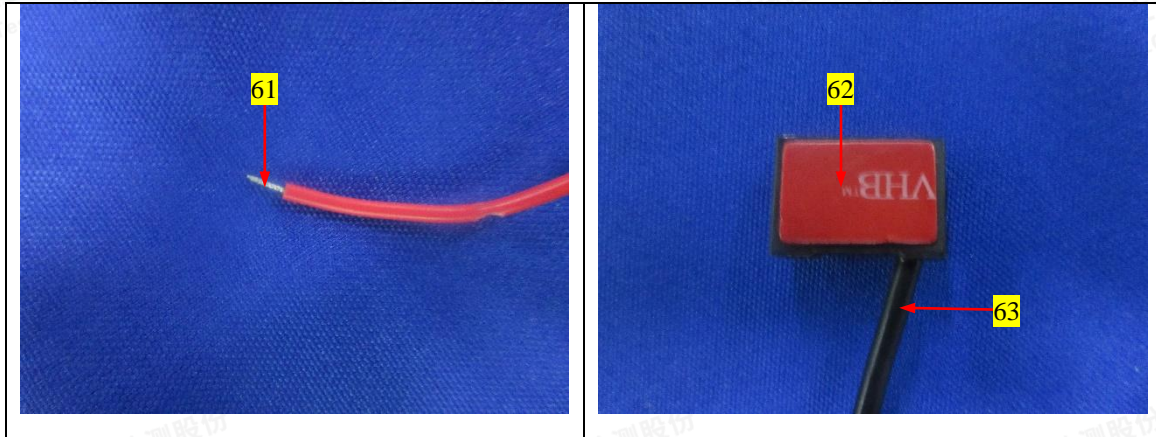




The photo(s) of the sample







Statement:

1. The test report is invalid without the signature of the approver and the special seal for the company's report;
2. The company name, address and sample information shown on the report were provided by the applicant who should be responsible for the authenticity which are not verified by LCS;
3. The test results in this report are only responsible for the tested samples;
4. Without written approval of LCS, this report can't be reproduced except in full;
5. In case of any discrepancy between the corresponding Chinese and English contents in the test report, the English version shall prevail.

*** End of Report ***

