

Verification Report

No. CANEC2306626406

Date: 19 May 2023

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Client Name : SUNTAN TECHNOLOGY COMPANY LIMITED

Client Address : UNIT H, 4/F., DORMIND INDUSTRIAL BUILDING, 13 YIP FUNG STREET, FANLING, N.T. , HONG KONG

Sample Name : ALUMINUM ELECTROLYTIC CAPACITORS

The above sample(s) and information were provided by the client.

SGS Job No. : CP23-020787 - GZ

Date of Sample Received : 06 May 2023

Verification Period : 06 May 2023 - 17 May 2023

Verification Requested : With reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

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

Verification Result(s) : Please refer to next page(s).

Test Result Summary

Test Items	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	PASS

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

Violet Shi

Violet, Shi
Approved Signatory

scan to see the report



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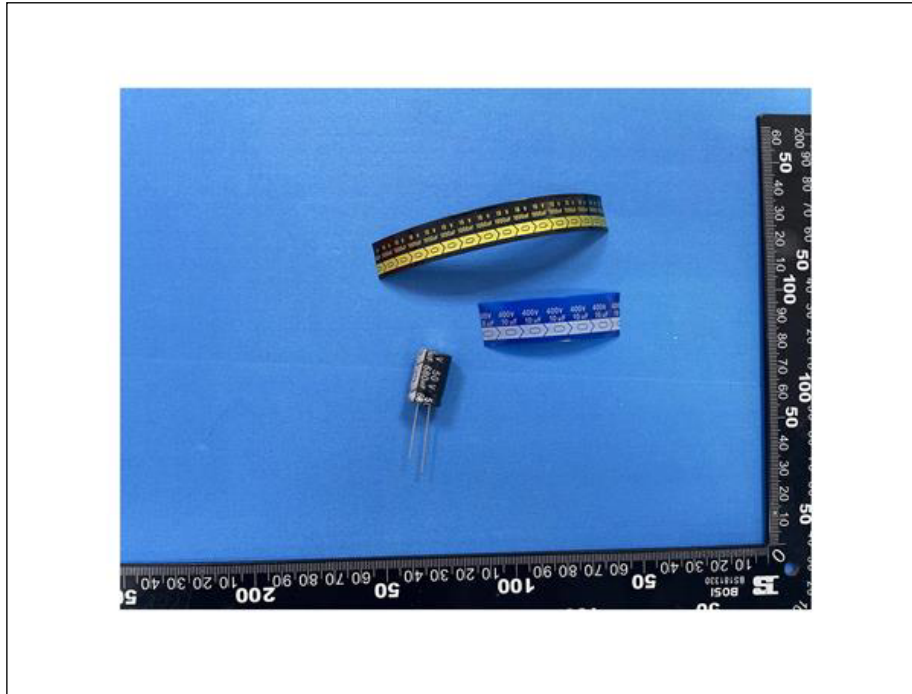
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Photo of Submitted Sample



Verification Method(s) :

1. With reference to IEC 62321-2:2021, disassembly and disjointment were performed for the submitted samples.
2. With reference to IEC 62321-1:2013, tests were performed for the samples indicated by the photos in this report
 - (1) With reference to IEC 62321-3-1:2013, screening by EDXRF spectroscopy.
 - (2) Wet chemical test method: With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC 62321-7-1:2015, IEC 62321-7-2:2017, ISO 17075-1:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Verification Part Description :

SN ID	Sample No	SGS Sample ID	Description
SN1	A1	CAN23-066264.001	Black plastic shell with white printing
SN2	A2	CAN23-066264.002	Silvery metal shell
SN3	A3	CAN23-066264.003	Black rubber cover
SN4	A4	CAN23-066264.004	Brown paper sheet with liquid
SN5	A5	CAN23-066264.005	Silvery metal sheet
SN6	A6	CAN23-066264.006	Silver-gray metal sheet
SN7	A7	CAN23-066264.007	Silvery metal pin



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Guangzhou Branch

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SN ID	Sample No	SGS Sample ID	Description
SN8	A8	CAN23-066264.008	Black plastic sheet with golden printing
SN9	A9	CAN23-066264.009	Blue plastic sheet with white printing



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SGS-CSI Standards Technical Service Co., Ltd.
Guangzhou Branch (China) Chemical Laboratory

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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Verification Results :

In accordance with the result of material risk assessment, the following disjointed parts in the submitted sample have been verified. (Unless otherwise specified, the unit is mg/kg).

Test Item(s)	A1	A2	A3	A4	A5	A6	A7	A8
Pb	BL	BL	BL	BL	BL	BL	BL	BL
Cd	BL	BL	BL	BL	BL	BL	BL	BL
Hg	BL	BL	BL	BL	BL	BL	BL	BL
Cr(VI)▼	BL	BL	BL	BL	BL	BL	BL	BL
PBBs	BL	---	BL	BL	---	---	---	BL
PBDEs	BL	---	BL	BL	---	---	---	BL
DBP	BL	---	ND	BL	---	---	---	BL
BBP	BL	---	ND	BL	---	---	---	BL
DEHP	BL	---	ND	BL	---	---	---	BL
DIBP	BL	---	ND	BL	---	---	---	BL
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Test Item(s)	A9
Pb	BL
Cd	BL
Hg	BL
Cr(VI)▼	BL
PBBs	BL
PBDEs	BL
DBP	BL
BBP	BL
DEHP	BL
DIBP	BL
Conclusion	PASS



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Notes:

(1) Interpretation of screening results by X-ray fluorescence spectrometry (XRF):

(a) Screening limits in mg/kg for regulated elements in various matrices according to IEC 62321-1:2013 Annex A as below table.

Element	Polymer	Metal	Composite Materials
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	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	Not applicable	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(b) If the maximum allowed level restricts PBB/PBDE and Cr(VI) rather than Br and Cr, the exceptions are the XRF determinations of Br and Cr. If the quantitative results for the elements Br and/or are higher than the limit (for Br calculated based on the stoichiometry of Br in the most common congeners of PBB/PBDE), the sample is "inconclusive".

(c) Results are obtained by EDXRF for primary screening, LOD = Limit of Detection, BL = Below Limit, OL = Over Limit, IN (The symbol X marks the region)= Inconclusive, where further investigation is necessary, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs/PBDEs) are recommended to be performed.

(d) The EDXRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

(2) Screening results of Phthalates (PHTH) are for primary screening, and further chemical testing by GC-MS (for DBP, BBP, DEHP and DIBP) are recommended to be performed if the concentration exceeds the below warning value (unit: mg/kg).

Test Items	CAS No.	Polymer/ Composite Materials
Dibutyl Phthalate (DBP)	84-74-2	$BL \leq 600 < X$
Benzylbutyl Phthalate (BBP)	85-68-7	$BL \leq 600 < X$
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	$BL \leq 600 < X$
Diisobutyl Phthalate (DIBP)	84-69-5	$BL \leq 600 < X$

(3) Interpretation of results by chemical tests:

(a) mg/kg = 0.0001%, MDL=Method detection Limit, ND = Not Detected (<MDL), --- = Not Applicable.



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(b) Unit and MDL in wet chemical test

Test Items	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	10	10	10	100	100	100	100

The MDL for single compound of PBBs and PBDEs is 100 mg/kg.

MDL of Cr(VI) for polymer, composite and leather sample is 10 mg/kg.

MDL of Cr(VI) for metal sample is 0.10µg/cm².

(c) ▽ =Metal sample

a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13µg/cm².

The sample coating is considered to contain Cr(VI)

b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10µg/cm²).

The coating is considered a non-Cr(VI) based coating

c. The result between 0.10µg/cm² and 0.13µg/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.

(4) Restricted substances and maximum concentration values tolerated by weight in homogeneous materials under RoHS Directive: Cd: 0.01%, Pb/Hg/Cr(VI)/PBBs/PBDEs/DEHP/DBP/BBP/DIBP: 0.1%.
The limit is quoted from RoHS Directive (EU) 2015/863.

(5) IEC 62321 series is equivalent to EN 62321 series.

(6) Results & Photos of this report refer to verification report CANEC2306626401.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



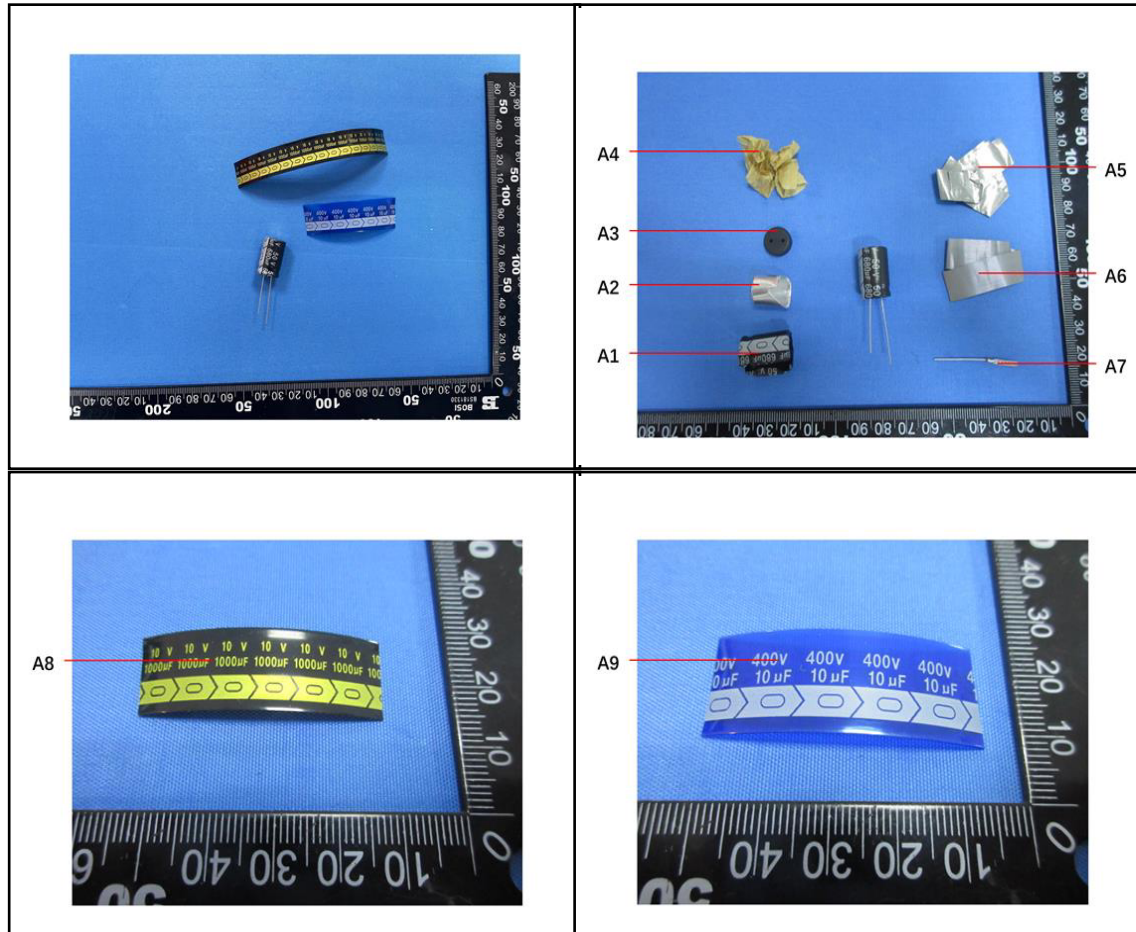
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Sample photo:



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*** End of Report ***



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