

Verification Report

No. TAOEC2400351901

Date: 27 Feb 2024

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Client Name : Jiangsu DINGS' Intelligent Control Technology Co., Ltd.

Client Address : 355 Longjin Road, Changzhou Economic Development Zone, Jiangsu, China

Sample Name : Voice Coil Motor
Client Ref. Information : VC/VCHF
Supplier : DINGS'
Manufacturer : Jiangsu DINGS' Intelligent Control Technology Co., Ltd.
Tested Basic Model No. : VC-38.7.7-5.5
Origin of the Product(s) : CHINA

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

SGS Job No. : SHP24-003539 - QD
Date of Sample Received : 01 Feb 2024
Verification Period : 01 Feb 2024 - 23 Feb 2024
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 (Qingdao) Co., Ltd.

Justin

Zhang Bo, Justin
Approved Signatory

scan to see the report



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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+AMD1:2017, 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, AAS,UV-Vis and GC-MS.

Verification Part Description :

SN ID	Sample No	SGS Sample ID	Description
SN1	A1	TAO24-003519.001	Black/white plastic(label)
SN2	A2	TAO24-003519.002	Brown plastic
SN3	A3	TAO24-003519.003	Copper enamelled wire
SN4	A4	TAO24-003519.004	Silvery metal
SN5	A5	TAO24-003519.005	White plastic
SN6	A6	TAO24-003519.006	Copper-colored metal
SN7	A7	TAO24-003519.007	White plastic



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SN ID	Sample No	SGS Sample ID	Description
SN8	A8	TAO24-003519.008	Silvery metal(soldering tin)
SN9	A9	TAO24-003519.009	Transparent adhesive
SN10	A10	TAO24-003519.010	Brown FPC
SN11	A11	TAO24-003519.011	Silvery magnet
SN12	A12	TAO24-003519.012	Copper-colored metal
SN13	A13	TAO24-003519.013	Silvery metal
SN14	A14	TAO24-003519.014	Silvery metal
SN15	A15	TAO24-003519.015	Silvery metal
SN16	A16	TAO24-003519.016	Black coating
SN17	A17	TAO24-003519.017	Silvery metal(matrix)
SN18	A18	TAO24-003519.018	Silvery metal(steel ball)



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Verification Results :

(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	19971▲	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	ND	BL	BL	BL	BL
PBBs	BL	BL	BL	---	ND	---	BL	---
PBDEs	BL	BL	BL	---	ND	---	BL	---
DBP	BL	BL	BL	---	BL	---	BL	---
BBP	BL	BL	BL	---	BL	---	BL	---
DEHP	BL	BL	BL	---	BL	---	BL	---
DIBP	BL	BL	BL	---	BL	---	BL	---
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Test Item(s)	A9	A10	A11	A12	A13	A14	A15	A16
Pb	BL	BL	BL	32599▲	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	ND	ND	BL
PBBs	ND	BL	---	---	---	---	---	BL
PBDEs	ND	BL	---	---	---	---	---	BL
DBP	BL	BL	---	---	---	---	---	ND
BBP	BL	BL	---	---	---	---	---	ND
DEHP	BL	BL	---	---	---	---	---	ND
DIBP	BL	BL	---	---	---	---	---	ND
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Test Item(s)	A17	A18
Pb	BL	BL
Cd	BL	BL
Hg	BL	BL
Cr(VI)▼	BL	BL
PBBs	---	---



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Test Item(s)	A17	A18
PBDEs	---	---
DBP	---	---
BBP	---	---
DEHP	---	---
DIBP	---	---
Conclusion	PASS	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
- (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.



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(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) ▲According to the declaration from the client, Lead (Pb) in No.A6,A12 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 6(c)]: Copper alloy containing up to 4 % lead by weight.

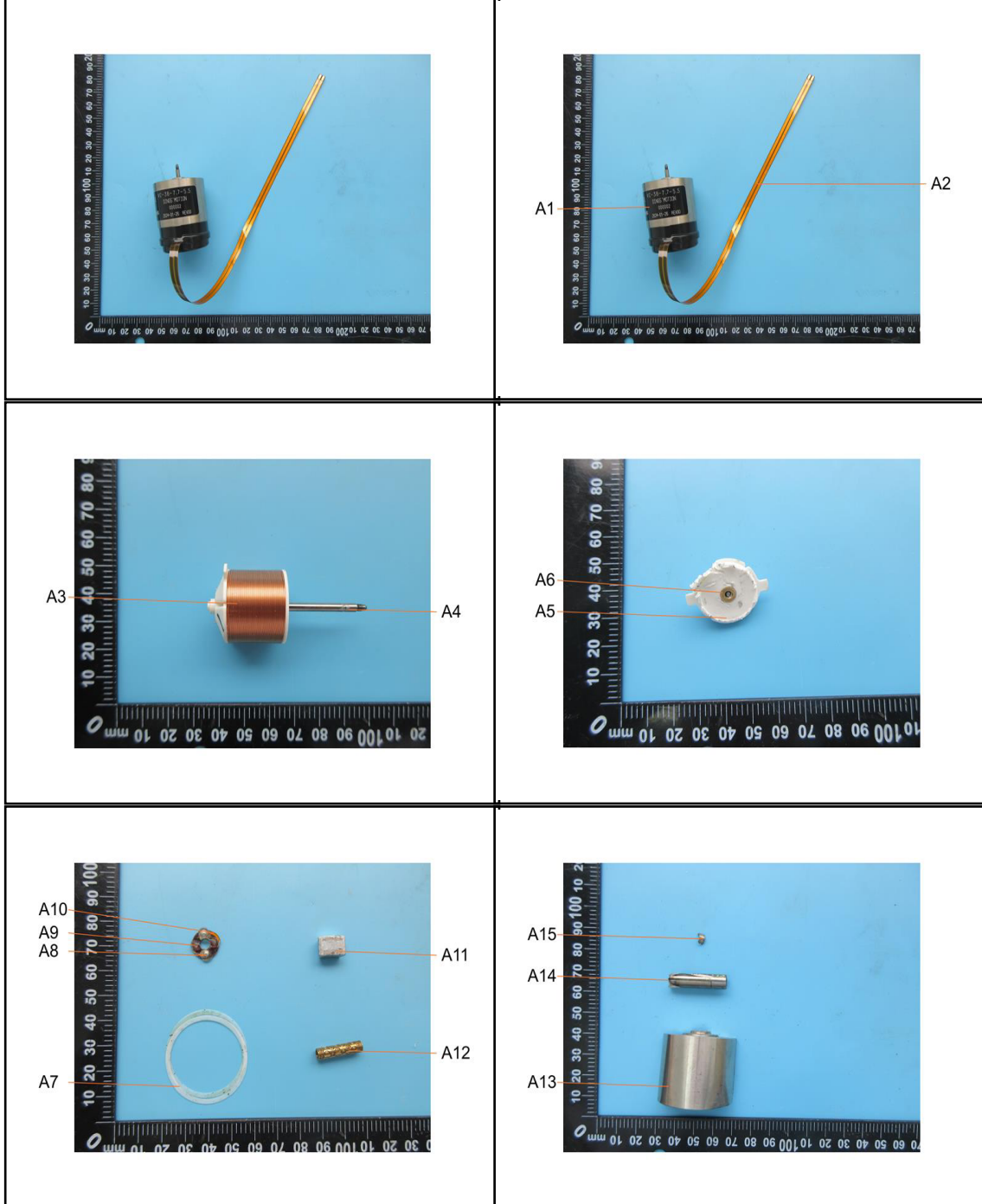
Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



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Sample photo:

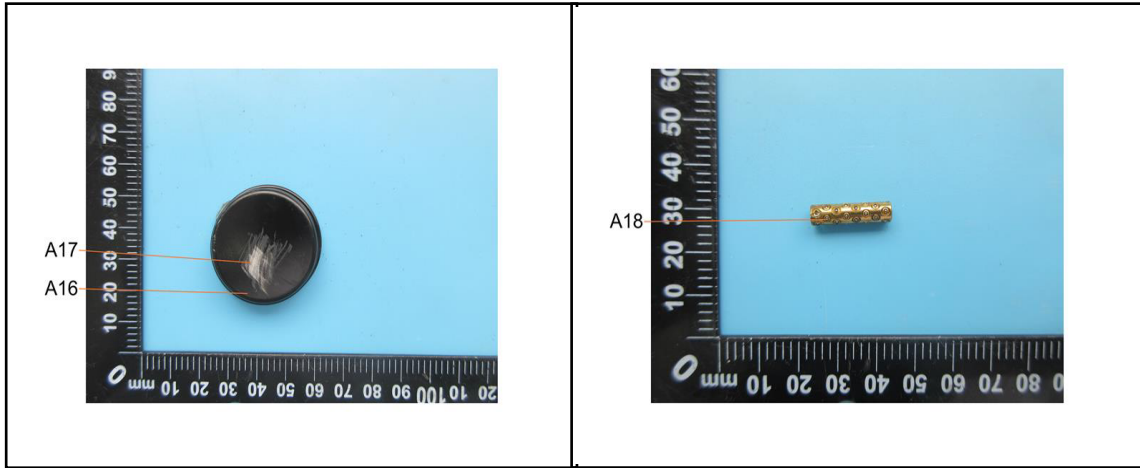


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*** End of Report ***

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