

Verification Report No.: SHAEC22004792501 Date: Jan 30, 2023 Page 1 of 10

Client Name: Jiangsu Dingzhi Intelligent Control Technology Co., Ltd

Client Address: 355 Longjin Road, Lucheng street, Changzhou Economic Development Zone

Sample Name: Hybrid screw stepping motor Tested Basic Model No.: 17E2115L4-55SNNN-100

Client Ref. Information: E/N/C/K

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

SGS Job No.: SP22-029370 Sample Receiving Date: Dec 13, 2022

Verification Period: Dec 13, 2022 - Jan 12, 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)	Pass
phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and	
Diisobutyl phthalate (DIBP)	

Signed for and on behalf of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Jessica Chen Approved Signatory





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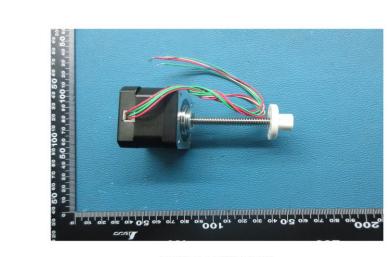
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17E2115L4-55SNNN-100

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.



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**Verification Part Description:** 

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA22-0047925-0001.C001	Black/White adhesive plastic (label)
SN2	A2	SHA22-0047925-0001.C002	Silvery/Black adhesive plastic (label)
SN3	A3	SHA22-0047925-0001.C003	Black metal (cover plate)
SN4	A4	SHA22-0047925-0001.C004	Silvery metal (cover plate)
SN5	A5	SHA22-0047925-0001.C005	Silvery metal (washer)
SN6	A6	SHA22-0047925-0001.C006	White plastic (washer)
SN7	A7	SHA22-0047925-0001.C007	Silvery metal (screw)
SN8	A8	SHA22-0047925-0001.C008	White plastic (fixed block)
SN9	A9	SHA22-0047925-0001.C009	White plastic (fixed block)
SN10	A10	SHA22-0047925-0001.C010	Golden metal (boot)
SN11	A11	SHA22-0047925-0001.C011	Silvery metal (connecting rod)
SN12	A12	SHA22-0047925-0001.C012	Silvery metal (washer)
SN13	A13	SHA22-0047925-0001.C013	Silvery metal (fixed block)
SN14	A14	SHA22-0047925-0001.C014	Silvery magnet
SN15	A15	SHA22-0047925-0001.C015	Golden metal (boot)
SN16	A16	SHA22-0047925-0001.C016	Silvery metal (bearing)
SN17	A17	SHA22-0047925-0001.C017	Silvery metal (bearing)
SN18	A18	SHA22-0047925-0001.C018	Silvery metal (bearing)
SN19	A19	SHA22-0047925-0001.C019	Silvery metal (bearing)
SN20	A20	SHA22-0047925-0001.C020	Silvery metal (bearing)
SN21	A21	SHA22-0047925-0001.C021	Red plastic (wire sheath) (wire harness)
SN22	A22	SHA22-0047925-0001.C022	Red/White plastic (wire sheath) (wire harness)
SN23	A23	SHA22-0047925-0001.C023	Green plastic (wire sheath) (wire harness)
SN24	A24	SHA22-0047925-0001.C024	Green/White plastic (wire sheath) (wire harness)
SN25	A25	SHA22-0047925-0001.C025	Silvery metal (wire core) (wire harness)
SN26	A26	SHA22-0047925-0001.C026	Beige plastic (fixed block)
SN27	A27	SHA22-0047925-0001.C027	Silvery metal (soldering tin)
SN28	A28	SHA22-0047925-0001.C028	Green PCB (body)
SN29	A29	SHA22-0047925-0001.C029	Black metal (silicon plate)
SN30	A30	SHA22-0047925-0001.C030	Beige plastic (fixed block)
SN31	A31	SHA22-0047925-0001.C031	Copper-colored metal (enamelled wire)



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## Verification Result(s):

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).

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

Test Item(s)	A9	A10	A11	A12	A13	A14	A15	A16
Cd	BL	32	BL	BL	BL	BL	40	BL
Pb	BL	17712▲	BL	BL	BL	BL	15227 ▲	BL
Hg	BL	ND	BL	BL	BL	BL	ND	BL
Cr(VI)▼	BL	BL	ND	ND	ND	BL	BL	ND
PBBs	BL					BL		
PBDEs	BL					BL		
DBP	BL							
BBP	BL							
DEHP	BL							
DIBP	BL							
Conclusion	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Test Item(s)	A17	A18	A19	A20	A21	A22	A23	A24
Cd	BL							
Pb	ND	BL						
Hg	BL							
Cr(VI)▼	ND	ND	BL	ND	BL	BL	BL	BL
PBBs					BL	BL	BL	BL
PBDEs					BL	BL	BL	BL
DBP					BL	BL	BL	BL
BBP					BL	BL	BL	BL
DEHP					BL	BL	BL	BL
DIBP					BL	BL	BL	BL
Conclusion	PASS							

Test Item(s)	A25	A26	A27	A28	A29	A30	A31
Cd	BL						
Pb	BL						
Hg	BL						
Cr(VI)▼	BL	BL	BL	BL	ND	BL	BL



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Test Item(s)	A25	A26	A27	A28	A29	A30	A31
PBBs		BL		ND		BL	BL
PBDEs		BL		ND		BL	BL
DBP		BL		BL		BL	BL
BBP		BL		BL		BL	BL
DEHP		BL		BL		BL	BL
DIBP		BL		BL		BL	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 ≤(70-3σ)< X	BL ≤(70-3σ)< X	LOD < X
	<(130+3σ)≤OL	<(130+3σ)≤OL	<(150+3σ)≤ OL
Pb	BL ≤(700-3σ)<	BL ≤(700-3σ)< X	BL ≤(500-3σ)<
	X<(1300+3σ)≤ OL	<(1300+3σ)≤ OL	X<(1500+3σ)≤ OL
Hg	BL ≤(700-3σ)< X	BL ≤(700-3σ)< X	BL ≤(500-3σ)< X
	<(1300+3σ)≤ OL	<(1300+3σ)≤ OL	<(1500+3σ)≤ OL
Br	BL ≤ (300-3σ)< X	Not Applicable	BL ≤ (250-3σ)< X
Cr	BL ≤ (700-3σ)< X	BL ≤ (700-3σ)< X	BL ≤ (500-3σ)< 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 ≤ 600< X
Benzylbutyl Phthalate (BBP)	85-68-7	BL ≤ 600< X
Bis(2-ethylhexyl) Phthalate (DEHP)	117-81-7	BL ≤ 600< X
Diisobutyl Phthalate (DIBP)	84-69-5	BL ≤ 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						
MDL	10	10	10	100	100	100	100

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



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> MDL of Cr(VI) for polymer, composite and leather sample is 10 mg/kg. MDL of Cr(VI) for metal sample is 0.10 µg/cm<sup>2</sup>.

- (c) ▼ =Metal sample
  - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/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 0.10 µg/cm²). The coating is considered a non-Cr(VI) based coating
  - c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusiveunavoidable 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.A10, A15 is exempted by EU RoHS directive 2011/65/EU based on |ANNEX III 6(c)|: Copper alloy containing up to 4 % lead by weight.
- (7) According to the declaration from applicant, the materials of Model "17E2115L4-55SNNN-100" are the same as those in Model "E/N/C/K" and its results for support the results of Model "E/N/C/K". The applicant will take the responsibility of all discrepancy and risk.

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.



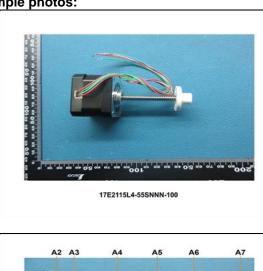
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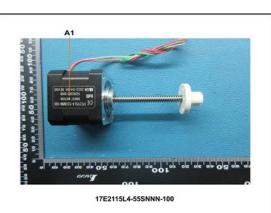
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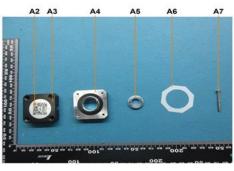


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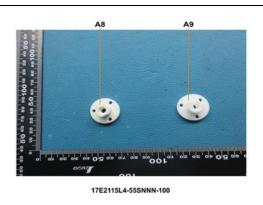
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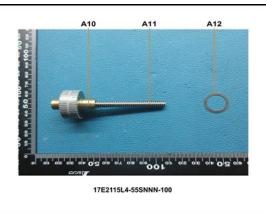












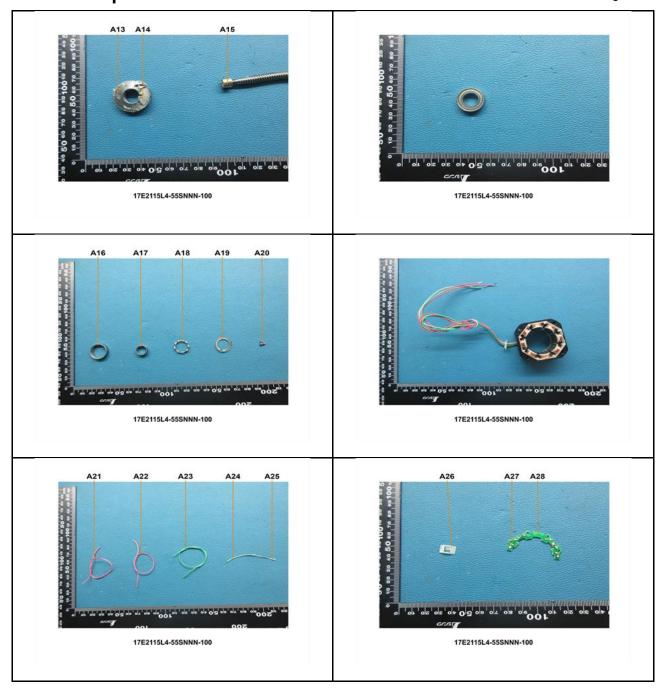


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