

验证报告 编号: SHAEC24000070302 日期: 2024年01月12日 第1页,共11页

客户名称: 江苏鼎智智能控制科技股份有限公司

客户地址: 江苏省常州经济开发区潞城街道龙锦路 355 号

样品名称: 混合式旋转步进电机 测试基本型号: 17H2049-120-4AL-S

H/P/W 客户参考信息:

以上样品及信息由客户提供。

SGS 工作编号: SHP24-000057

样品接收时间: 2024年01月02日

2024年01月02日~2024年01月11日 验证周期:

验证要求: 参考欧盟 RoHS 指令 2011/65/EU 的修正指令(EU) 2015/863。

验证方法: 见后续页。 验证程序和结果: 见后续页。

检测结果总结:

检测项目	结论
欧盟 RoHS 指令 2011/65/EU 附录 II 修正指令(EU) 2015/863- 铅, 汞, 镉, 六价铬,	
多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸二丁酯 (DBP), 邻苯二甲酸丁	符合
苄酯(BBP), 邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP)	

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陈告欢

Jessica Chen 陈皆欢 批准签署人





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验证方法:

- 1. 参考 IEC 62321-2:2021, 拆分申请者提供的成品。
- 2. 参考 IEC 62321-1:2013, 仅对本报告照片中标识的样品进行了下列测试分析。
- (1) 参考 IEC 62321-3-1: 2013, 用能量色散型 X 射线荧光分析仪器进行筛选。
- (2) 湿法化学检测方法:参考 IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-7-2:2017, ISO 17075-1:2017, IEC 62321-12:2023, IEC 62321-6:2015 和 IEC 62321-8:2017, 采用 ICP-OES,UV-Vis 和 GC- MS 进行分析。



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验证部件外观描述:

样品序号	样品编号	SGS 样品 ID	样品描述
SN1	A1	SHA24-0000703-0001.C001	黑色粘性塑料标签
SN2	A2	SHA24-0000703-0001.C002	银蓝色金属螺丝
SN3	А3	SHA24-0000703-0001.C003	黑色金属外壳
SN4	A4	SHA24-0000703-0001.C004	黑色金属垫片
SN5	A5	SHA24-0000703-0001.C005	白色塑料垫片
SN6	A6	SHA24-0000703-0001.C006	黑色金属外壳
SN7	A7	SHA24-0000703-0001.C007	轴承上银色金属
SN8	A8	SHA24-0000703-0001.C008	轴承上银色金属
SN9	A9	SHA24-0000703-0001.C009	轴承上银色金属
SN10	A10	SHA24-0000703-0001.C010	轴承上银色金属
SN11	A11	SHA24-0000703-0001.C011	轴承上银色金属
SN12	A12	SHA24-0000703-0001.C012	黑色金属卡簧
SN13	A13	SHA24-0000703-0001.C013	银色金属衬套
SN14	A14	SHA24-0000703-0001.C014	银色金属轴
SN15	A15	SHA24-0000703-0001.C015	轴上灰色胶
SN16	A16	SHA24-0000703-0001.C016	银色金属轴
SN17	A17	SHA24-0000703-0001.C017	银蓝色磁铁
SN18	A18	SHA24-0000703-0001.C018	白色塑料
SN19	A19	SHA24-0000703-0001.C019	PCB 上绿色 PCB 本体
SN20	A20	SHA24-0000703-0001.C020	银色金属焊锡
SN21	A21	SHA24-0000703-0001.C021	红/白色塑料外被
SN22	A22	SHA24-0000703-0001.C022	银色金属线芯
SN23	A23	SHA24-0000703-0001.C023	绿/白色塑料外被
SN24	A24	SHA24-0000703-0001.C024	绿色塑料外被
SN25	A25	SHA24-0000703-0001.C025	红色塑料外被
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样品序号	样品编号	SGS 样品 ID	样品描述
SN26	A26	SHA24-0000703-0001.C026	黑色金属硅钢片
SN27	A27	SHA24-0000703-0001.C027	透明塑料支架
SN28	A28	SHA24-0000703-0001.C028	铜色金属线圈



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验证结果:

根据物料风险评估的结果,验证送测样品中的以下材料。(除特别标注,单位均为: mg/kg)

检测项目	A1	A2	A3	A4	A5	A6	A7	A8
Cd	BL							
Pb	BL							
Hg	BL							
Cr(VI)▼	BL	ND	ND	ND	BL	ND	ND	ND
PBBs	BL				BL			
PBDEs	BL				BL			
DBP	BL				BL			
BBP	BL				BL			
DEHP	BL				BL			
DIBP	BL				BL			
结论	符合							

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检测项目	A9	A10	A11	A12	A13	A14	A15	A16
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)▼	ND	BL	ND	ND	BL	ND	BL	ND
PBBs							BL	
PBDEs							BL	
DBP							BL	
BBP							BL	
DEHP							BL	
DIBP							BL	
结论	符合	符合	符合	符合	符合	符合	符合	符合

检测项目	A17	A18	A19	A20	A21	A22	A23	A24
Cd	BL							
Pb	BL							
Hg	BL							
Cr(VI)▼	BL							
PBBs	BL	BL	ND		BL		BL	BL
PBDEs	BL	BL	ND		BL		BL	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
结论	符合							

检测项目	A25	A26	A27	A28
Cd	BL	BL	BL	BL
Pb	BL	BL	BL	BL
Hg	BL	BL	BL	BL



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检测项目	A25	A26	A27	A28
Cr(VI)▼	BL	ND	BL	BL
PBBs	BL		BL	
PBDEs	BL		BL	
DBP	BL		BL	
BBP	BL		BL	
DEHP	BL		BL	
DIBP	BL		BL	
结论	符合	符合	符合	符合



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备注:

(1) X 射线荧光光谱法(XRF)筛选结果说明:

(a)下表为 IEC62321-3-1: 2013 附录 A 不同基体材料中以 mg/kg 表示的筛选元素限值:

		<u> </u>	
元素	聚合物	金属	复合材料
Cd	BL≤(70-3σ) <x<(130+3σ)≤ol< td=""><td>BL≤(70-3σ)<x<(130+3σ)≤ol< td=""><td>LOD<x<(150+3σ)≤ol< td=""></x<(150+3σ)≤ol<></td></x<(130+3σ)≤ol<></td></x<(130+3σ)≤ol<>	BL≤(70-3σ) <x<(130+3σ)≤ol< td=""><td>LOD<x<(150+3σ)≤ol< td=""></x<(150+3σ)≤ol<></td></x<(130+3σ)≤ol<>	LOD <x<(150+3σ)≤ol< td=""></x<(150+3σ)≤ol<>
Pb	BL≤(700-3σ) <x<(1300+3σ)≤ol< td=""><td>BL≤(700-3σ)<x<(1300+3σ)≤ol< td=""><td>BL≤(500-3σ)<x<(1500+3σ)≤ol< td=""></x<(1500+3σ)≤ol<></td></x<(1300+3σ)≤ol<></td></x<(1300+3σ)≤ol<>	BL≤(700-3σ) <x<(1300+3σ)≤ol< td=""><td>BL≤(500-3σ)<x<(1500+3σ)≤ol< td=""></x<(1500+3σ)≤ol<></td></x<(1300+3σ)≤ol<>	BL≤(500-3σ) <x<(1500+3σ)≤ol< td=""></x<(1500+3σ)≤ol<>
Hg	BL≤(700-3σ) <x<(1300+3σ)≤ol< td=""><td>BL≤(700-3σ)<x<(1300+3σ)≤ol< td=""><td>BL≤(500-3σ)<x<(1500+3σ)≤ol< td=""></x<(1500+3σ)≤ol<></td></x<(1300+3σ)≤ol<></td></x<(1300+3σ)≤ol<>	BL≤(700-3σ) <x<(1300+3σ)≤ol< td=""><td>BL≤(500-3σ)<x<(1500+3σ)≤ol< td=""></x<(1500+3σ)≤ol<></td></x<(1300+3σ)≤ol<>	BL≤(500-3σ) <x<(1500+3σ)≤ol< td=""></x<(1500+3σ)≤ol<>
Br	BL ≤ (300-3σ)< X	不适用	BL ≤ (250-3σ)< X
Cr	BL ≤ (700-3σ)< X	BL ≤ (700-3σ)< X	BL ≤ (500-3σ)< X

- (b) 现行法规限制的最大允许值是对 PBB/PBDE 和 Cr(VI) 而不是对 Br 和 Cr 的, 而 XRF 测定的是 Br 和 Cr。如果元素 Br 和或 Cr 的定量结果均高于限值(Br 计算基于在常见物质中 PBB/PBDE 的组成的理论计 算),则样品的筛选结果为"不确定"。
- (c) EDXRF 的结果用于初步筛选,LOD=检出限,BL=低于限值,OL=超出限值,IN (符号"X"标记的区域) =不确定,需要进一步研究,我们建议客户用更精确的化学检测方法测试样品,如用 ICP-OES 测试 Cd/Pb/Hg; 用 UV-Vis 测试 Cr(VI); 用 GC-MS 测试 PBBs/PBDEs。
- (d) 对于复合材料, EDXRF 筛选检测 RoHS 元素所得数据可能与样品中实际含量不同。
- (2) 邻苯二甲酸酯(PHTH)筛分结果只作初步筛选,如果检测结果超出下表所规定的警戒范围,我们采用更精确 的化学检测方法检测样品,用 GC-MS 检测 DBP、BBP、DEHP 和 DIBP (单位: ma/ka)。

	•	(, , 3. 3,
检测项目	CAS No.	聚合物/复合材料
邻苯二甲酸二丁酯 (DBP)	84-74-2	BL ≤ 600< X
邻苯二甲酸丁苄酯 (BBP)	85-68-7	BL ≤ 600< X
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	117-81-7	BL ≤ 600< X
邻苯二甲酸二异丁酯 (DIBP)	84-69-5	BL ≤ 600< X

- (3) 化学检测方法结果说明:
 - (a) mg/kg = 0.0001%, MDL=方法检测限, ND =未检出(低于 MDL), --- =不适用。
 - (b) 化学检测方法的表达单位和方法检测限

检测项目	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
单位	mg/kg						
方法检测限	10	10	10	100	100	100	100

任何一种 PBBs 和 PBDEs 的方法检测限是 100 mg/kg;

聚合物,复合材料和皮革样品中 Cr(VI)的方法检测限是 10 mg/kg。

金属样品中 Cr(VI)的方法检测限是 0.10 µg/cm²。

- (c) ▼ = 金属样品中
 - a. 当六价铬的浓度高于 0.13 μg/cm²时,样品为阳性,即含有六价铬;
 - b. 当六价铬的浓度为 ND(低于 0.10 µg/cm²)时,样品为阴性,即未检测到六价铬;
 - c. 当六价铬的浓度介于 0.10 μg/cm²与 0.13 μg/cm²之间时,无法直接判定是否检测到六价铬,因不同 个体的样品表面差异可能会影响测定结果;

由于未获知样品的存储条件和生产日期,样品的六价铬检测结果仅能代表检测时样品含六价铬的状态。

(4) RoHS 指令中限制物质及均质材料中最大允许浓度值: Cd: 0.01%, Pb/Hg/Cr(VI)/PBBs/PBDEs/ DEHP /DBP/BBP/DIBP: 0.1%, 限值引用自 RoHS 指令(EU) 2015/863。



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(5) IEC 62321 系列等同于 EN 62321 系列。

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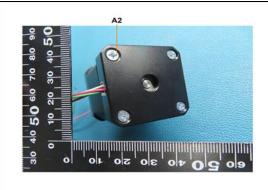
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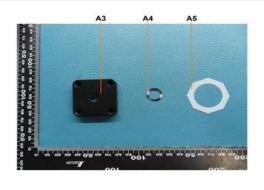
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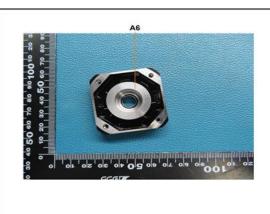
样品照片:















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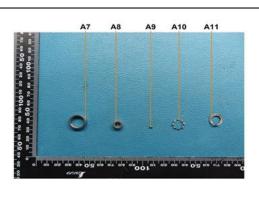


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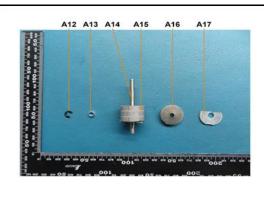
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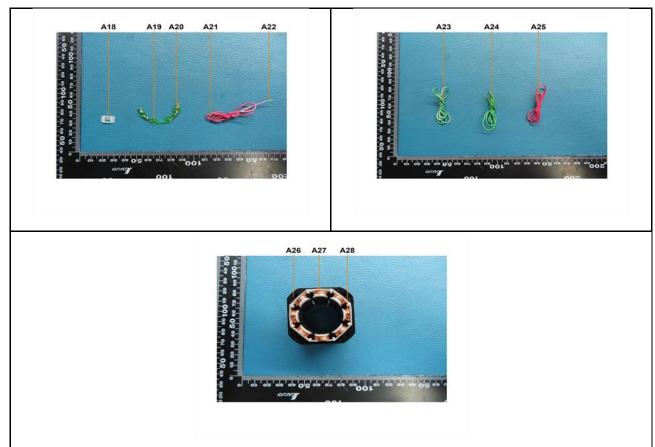
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