

验证报告

编号: TAOEC2400351902

日期: 2024年02月27日 第1页,共9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: 音圈电机
客户参考信息: VC/VCHF
供应商: DINGS'
制造商: 江苏鼎智智能控制科技股份有限公司
检测基本型号: VC-38.7.7-5.5
原产地: 中国
以上样品及信息由客户提供。

SGS工作编号: SHP24-003539 - QD
样品接收日期: 2024年02月01日
验证周期: 2024年02月01日 - 2024年02月23日
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: 请参见后续页。
验证结果: 请参见后续页。

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)	符合

通标标准技术服务(青岛)有限公司
授权签名

Zhang Bo, Justin 张波
批准签署人

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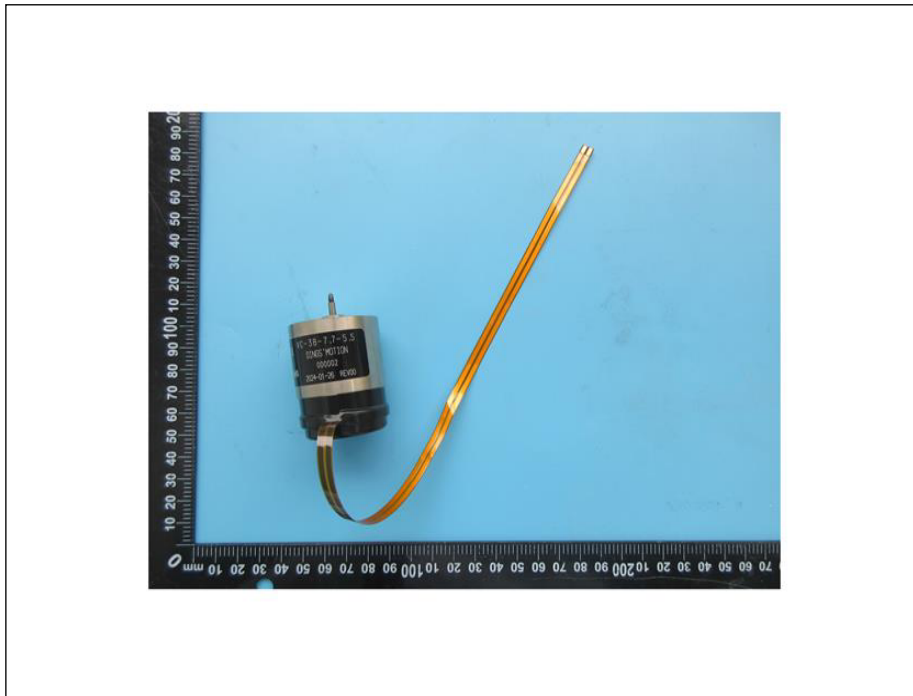
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样品照片



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+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-7-2:2017, ISO 17075-1:2017, IEC 62321-6:2015和IEC 62321-8:2017, 采用ICP-OES, AAS, UV-Vis和GC-MS进行分析。

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	TAO24-003519.001	黑色塑料标签
SN2	A2	TAO24-003519.002	棕色塑料
SN3	A3	TAO24-003519.003	铜色漆包线
SN4	A4	TAO24-003519.004	银色金属
SN5	A5	TAO24-003519.005	白色塑料
SN6	A6	TAO24-003519.006	铜色金属
SN7	A7	TAO24-003519.007	白色塑料



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样品序号	样品编号	SGS 样品ID	样品描述
SN8	A8	TAO24-003519.008	银色金属焊锡
SN9	A9	TAO24-003519.009	透明胶
SN10	A10	TAO24-003519.010	棕色FPC
SN11	A11	TAO24-003519.011	银色磁铁
SN12	A12	TAO24-003519.012	铜色金属
SN13	A13	TAO24-003519.013	银色金属
SN14	A14	TAO24-003519.014	银色金属
SN15	A15	TAO24-003519.015	银色金属
SN16	A16	TAO24-003519.016	黑色涂层
SN17	A17	TAO24-003519.017	银色金属基材
SN18	A18	TAO24-003519.018	银色金属钢珠



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验证结果:

(除特别标注, 单位均为: mg/kg)

检测项目	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	---
结论	符合	符合	符合	符合	符合	符合	符合	符合

检测项目	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
结论	符合	符合	符合	符合	符合	符合	符合	符合

检测项目	A17	A18
Pb	BL	BL
Cd	BL	BL
Hg	BL	BL
Cr(VI)▼	BL	BL
PBBs	---	---



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检测项目	A17	A18
PBDEs	---	---
DBP	---	---
BBP	---	---
DEHP	---	---
DIBP	---	---
结论	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:

元素	聚合物	金属	复合材料
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	$BL \leq (300-3\sigma) < X$	不适用	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(b) 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 筛选测试 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, 如果测试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测试样品, 用 GC-MS 测试 DBP、BBP、DEHP 和 DIBP (单位: mg/kg)。

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

(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

测试项目	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
单位	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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 100mg/kg:

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

金属样品中 Cr(VI)的方法检测限是 0.10μg/cm²。



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(c) ▼ = 金属样品中

- a. 当六价铬的浓度高于 $0.13\mu\text{g}/\text{cm}^2$ 时, 样品为阳性, 即含有六价铬;
- b. 当六价铬的浓度为 ND (低于 $0.10\mu\text{g}/\text{cm}^2$) 时, 样品为阴性, 即未检测到六价铬;
- c. 当六价铬的浓度介于 $0.10\mu\text{g}/\text{cm}^2$ 与 $0.13\mu\text{g}/\text{cm}^2$ 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, 样品的六价铬测试结果仅能代表测试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。

(5) IEC 62321 系列等同于 EN 62321 系列。

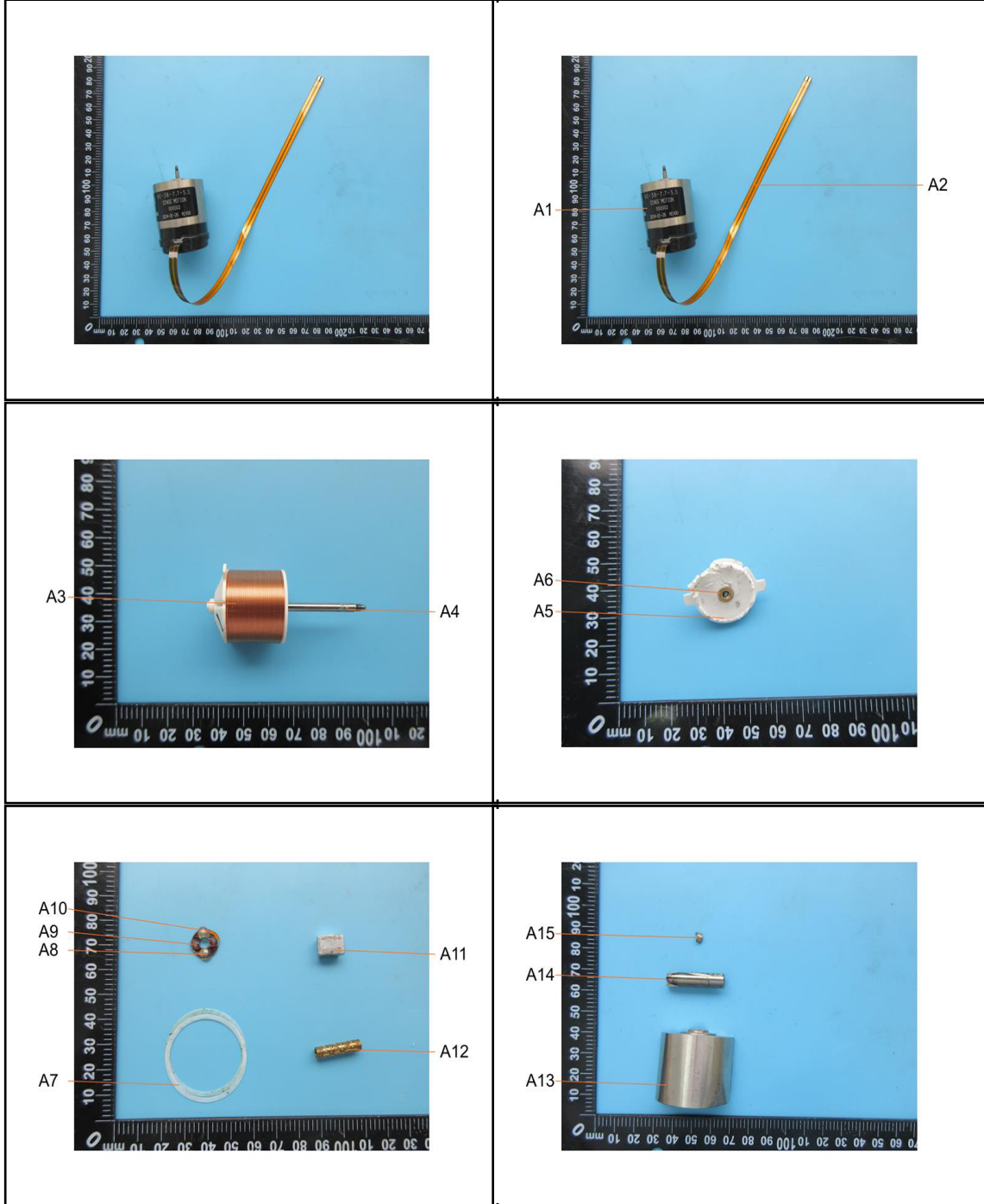
(6) ▲根据客户提供的声明, 编号A6,A12中的铅(Pb)被欧盟RoHS指令2011/65/EU豁免, 相应豁免条文(请以英文原文为准) [ANNEX III 6(c)]: 铜合金中的铅含量不得超过4%。

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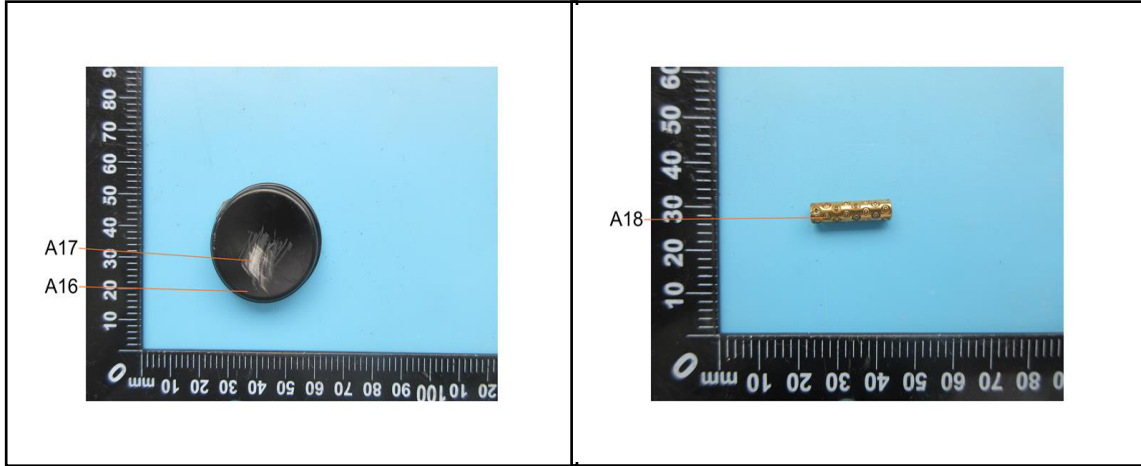


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