

MATERIAL SAFETY DATA SHEETS (MSDS)

化学品安全技术说明书 (MSDS)

Bambu PLA Tough

3D 打印线材

No.: EGZ2303300052C00501R

Date: Apr. 07, 2023

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Prepared for : Shenzhen Tuozhu Technology Co., Ltd
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Signed for and on behalf of
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Apr. 07, 2023

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According to Regulation (EC) No 1907/2006. Annex II

根据法规(EC) No 1907/2006 附件 II

Amended by COMMISSION REGULATION (EU) 2020/878,

根据欧盟委员会法规(EU) 2020/878 编写

According to REGULATION (EC) No 1272/2008

根据 REGULATION (EC) No 1272/2008 分类

1 - Identification of the substance /preparation and of the company/undertaking

第一章 化学品及企业标识

Product identifier

产品标识

Unique Formula Identifier(UFI) : N/A

唯一配方标识符

Product name : Bambu PLA Tough

产品名称

3D打印线材

Model : A09-xx(xx代表任意后缀)

型号

A09-xx(xx stands for any suffix)

Country of Origin : China

原产国

中国

Export to : /

出口国

CAS No. : Refer to section 3

见第三章

EC No. : Refer to section 3

见第三章

Relevant identified uses of the substance or mixture and uses advised against

有关的确定的物质或混合物的用途和建议不适合的用途

Relevant identified uses : 3D printing wire rod

有关已确定用途

3D打印线材

Uses advised against : /

使用建议



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Details of the supplier of the safety data sheet

安全技术说明书提供者的详情

Manufacturer : Shenzhen Tuozhu Technology Co., Ltd
制造商 深圳拓竹科技有限公司

Address : Room 201, Building A, No. 1 First Qianwan Road, Qianhai Shengang Cooperation
地址 深圳市前海深港合作区前湾一路1号A栋201室

Post Code : /
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Telephone/电话 : 13603003545

E-mail address : lvhong.yu@bambulab.com
电子邮件地址

Emergency phone : /
紧急通信电话

2 - Hazards Identification
第二章 危险性概述**Hazards Classification**

危险性类别

In accordance with regulation (EC) No. 1272/2008(CLP), The substance or mixture is not classified as hazardous.

根据(EC) No. 1272/2008(CLP)标准, 该物质或混合物不属于危险物质。

Physical hazard : Not classified as a physical hazard class.
物理危害 未被划分为物理危害等级

Health hazard : Not classified as a health hazard class.
健康危害 未被划分为健康危害等级

Environment hazard : Not classified as a environment hazard class.
环境危害 未被划分为环境危害等级

For the full text of the health note (H-) mentioned in this section, see section 16.

本部分提及的健康说明 (H-)全文请见第16部分。



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Label elements**标签要素**

Hazard pictograms	: Not applicable.
象形图	不适用。
Warning words	: Not applicable.
警示词	不适用。
Danger statement	: Not applicable.
危险申明	不适用。
Preventive measure	: Not applicable.
预防措施	不适用。
Response	: Not applicable.
事故响应	不适用。
Storage	: Not applicable.
安全储存	不适用。
Disposal	: None
废弃处置	无
health hazard	: Thermal decomposition may melt and cause burns.
健康危害	热分解时可能融化造成烫伤。
Environment hazard	: None
环境危害	无
Physical and chemical hazards	: None
物理和化学危害	无
Other hazards	: The mixture does not contain PBT/vPvB substance The mixture does not contain endocrine disruptor
其他危害	该混合物不含PBT/vPvB物质。 该混合物不含内分泌干扰物。

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3 - Composition / Information on Ingredients

第三章 成分/组成信息

Substance or Preparation: Preparation物质 混合物

Serial Number 序号	Component/Substance 成分/物质	% by wt	CAS Number CAS 号	EINECS Number EC 号	CLP Classification	Specific Concentration limits, M-Factors, Acute Toxicity Estimates (ATE) 特定浓度极限值, M 因子 急性毒性估计 (ATE)
1	Polylactic acid 聚乳酸	99	26023-30-3	N/A	/	/
2	Additive 添加剂	0-1	N/A	N/A	/	/

Note: CAS Number is Chemical Abstract Service Registry Number.

注: CAS 编号表示化学文摘服务登记编号。

EINECS Number is EUROPEAN Inventory of Existing Commercial Chemical Substance.

EC 编号表示欧洲现有商业化学品目录编号。

N/A denote not applicable. N/A表示不适用。



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4 - First Aid Measures

第四章 急救措施

Description of first aid measures

急救措施的说明

If inhaled

吸入

- : If you feel respiratory irritation, remove to fresh air immediately. Keep the respiratory tract smooth. Use oxygen if available. Get medical aid.

如果感到呼吸道刺激，迅速脱离现场至空气新鲜处。保持呼吸道通畅。如有必要，给予输氧。就医。

In case of skin contact

皮肤接触

- : Burns caused by molten materials need hospital treatment. In case of contact with skin, please rinse with plenty of water and seek medical attention immediately. Please clean the contaminated clothes before using them again.

熔化材料造成的烧伤需要医院治疗，万一接触到皮肤，请用大量水冲洗并立即就医。再次使用之前，请清洗受污染的衣物。

In case of eye contact

眼睛接触

- : If you feel eye irritation, flush the eyes with plenty of water or saline water at least 15 minutes. Get medical aid at once.

如果感觉到眼睛刺激，用大量清水或生理盐水冲洗 15 分钟以上。立刻就医。

If swallowed

食入

- : Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical aid at once.

切勿给失去知觉者喂食任何东西。用水漱口。立刻就医。

Most important symptoms and effects, both acute and delayed

主要症状和影响，急性和迟发效应

- : No available data

无可用数据。

Indication of any immediate medical attention and special treatment needed

及时的医疗处理和所需的特殊处理的说明和指示

- : Transfer patients to a safe place. Consult a doctor. Present this chemical safety data sheet to the doctor on site.

将患者转移到安全的场所。咨询医生。出示此化学品安全技术说明书给到现场的医生看。



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5 - Fire-Fighting Measures
第五章 消防措施

Extinguishing media

灭火介质

Suitable extinguishing media

灭火方法及灭火剂

: Dry powder, carbon dioxide, sand, anti-soluble foam
干粉, 二氧化碳, 砂土, 抗溶性泡沫Special hazards arising from the
substance or mixture

源于此物质或混合物的特别的危害

: No available data.
无可用数据

Combustion products

燃烧产物

: No available data.
无可用数据

Advice for firefighters

给消防员的建议

: As soon as possible, remove the goods from fire to open place.
For small fires, use dry chemical, carbon dioxide, water spray or
alcohol-resistant foam. For large fires, Standing on the
windward, use water spray, fog, or alcohol-resistant foam. Use
water spray to cool fire-exposed containers. Do NOT use
straight streams of water.尽快将货物从火中移开。对于小火, 使用干粉, 二氧化碳, 水喷
雾或耐酒精泡沫。对于大型火灾, 站在迎风, 使用水喷雾, 雾,
或耐酒精泡沫。用水喷雾冷却暴露在火中的容器。不要使用直接
的水流。

Further information

进一步信息

: Wear suitable protective clothing, gloves, eye/face protection
and self-contained breathing apparatus in pressure-demand,
MSHA/NIOSH (approved or equivalent), and full protective gear.
在压力要求下穿戴合适的防护服、手套、眼/面保护和自备呼吸
器, MSHA/NIOSH (认可或等效) 和全防护装置。

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6 - Accidental Release Measures

第六章 泄露应急处理

- Personal precautions, protective equipment and emergency procedures** : Avoid inhaling aerosol or gas. Ensure adequate ventilation. Evacuate people to a safe area.
作业人员防护措施、防护装备和应急处置程序 避免吸入气雾或气体，保证充分的通风，将人员疏散到安全区域。
- Environmental precautions** : No special environmental prevention requirements.
环境保护措施 无特别的环境预防要求。
- Methods and materials for containment and cleaning up** : Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
泄漏化学品的收容、清除方法及所使用的处置材料 捡起并安排处置，不要产生灰尘。清扫并铲起。放在合适的密闭容器中进行处置。
- Reference to other sections** : For disposal see section 13.
参考其他部分 丢弃处理请参阅第13章。

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7 - Handling and Storage

第七章 操作处置与储存

Precautions for safe handling

安全操作的注意事项

Conditions for safe storage, including any incompatibilities

安全储存的条件,包括任何不兼容性

: No special operation opinions are required.
无需特殊的操作意见。

: Store in a closed container when possible to prevent accidental aerosols generation and to prevent possible product contamination. Protect containers from physical damage. Keep dry and isolated from acids, caustics, halogenated compounds and oxidizers. Do not store near combustible materials. Guard against dust accumulation and dust becoming airborne. Keep container tightly closed in a cool, well-ventilated place. Keep the sample as a easy identification. Equip with relevant type and quantities of the extinguishment instruments.

尽可能存放在密闭的容器中,以防止意外的气雾产生并防止可能的产品污染。保护容器免受物理损坏。保持干燥,与酸,苛性碱,卤化物和氧化剂分离。不要存放在易燃材料附近。防止灰尘积聚和粉尘的空气传播。储存于阴凉,干燥,通风的库房。保持样品容易识别。配备相应品种和数量的消防器材。



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8 - Exposure Controls / Personal Protection
第八章 接触控制/个人防护

Allowable concentration 容许浓度	:	No available data. 无可用数据
Monitoring method 检测方法	:	No available data. 无可用数据
Components with workplace control parameters 暴露控制	:	In accordance with good industrial and safety regulations. Wash hands before rest and at the end of work. 按照良好工业和安全规范操作。休息前和工作结束时洗手。
Personal protective equipment 个人防护装备	:	
Eye Protection 眼睛防护	:	It is not necessary to use protective equipment under normal conditions. 正常条件下没有必要使用防护装备。
Skin protection 皮肤保护	:	It is not necessary to use protective equipment under normal conditions. 正常条件下没有必要使用防护装备。
Body Protection 身体保护	:	It is not necessary to use protective equipment under normal use conditions. 正常条件下没有必要使用防护装备。
Respiratory protection 呼吸系统防护	:	It is not necessary to use protective equipment under normal use conditions. 正常条件下没有必要使用防护装备。
Other protection 其他防护	:	None 无

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9 - Physical and Chemical Properties

第九章 理化特性

Physical state: 物理形态	: Thread 线	Odor 气味	: No available data. 无可数据
Color 颜色	: Red 红色	pH pH 值	: No available data. 无可数据
Melting Point 熔点	: 160°C	Density 密度	: 1.24 g/cm ³
Boiling point or initial boiling point and boiling range (°C) 沸点或初始沸点 沸腾范围(°C)	: No available data. 无可数据	Flashing Point 闪点	: No available data. 无可数据
Explosion Upper Limits 爆炸上限	: No available data. 无可数据	Explosion Lower Limits 爆炸下限	: No available data. 无可数据
Kinematic viscosity (mm²/s): 运动粘度 (mm ² /s)	: No available data. 无可数据	Particle characteristics: 粒子特性	: No available data. 无可数据
Ignition temperature 着火点	: No available data. 无可数据	Decomposition temperature 分解温度	: No available data. 无可数据
Solubility 溶解度	: No available data. 无可数据		

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10 - Stability and Reactivity

第十章 稳定性和反应活性

Reactivity 反应活性	: No available data. 无可用数据。
Chemical stability 化学稳定性	: Stable under recommended storage conditions. 正常情况下稳定
Conditions to avoid 应避免的条件	: Avoid fire, elevated temperatures. direct sunlight. 避免火灾, 高温, 阳光直射。
Incompatible materials 禁配物	: No available data. 无可用数据。
Hazardous decomposition products 危险的分解产物	: No available data. 无可用数据。

11 - Toxicological Information

第十一章 毒理学资料

Information on toxicological effects

Acute Toxicity 急性毒性	: No available data. 无可用数据。
Skin corrosion/irritation 皮肤腐蚀/刺激性	: No available data. 无可用数据。
Serious eye damage/eye irritation 严重眼伤害/眼刺激	: No available data. 无可用数据。
Respiratory or skin Sensitization 呼吸系统或皮肤致敏作用	: No available data. 无可用数据。
Germ cell mutagenicity 生殖细胞致变性	: No available data. 无可用数据。
Carcinogenicity 致癌性	: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. IARC: 该产品中不存在大于或等于0.1%的组分被IARC鉴定为可能的、可能的或证实的人类致癌物。

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Reproductive toxicity 生殖毒性	: No available data. 无可数据
Specific target organ toxicity-single exposure 特定靶器官毒性-单次暴露	: No available data. 无可数据
Specific target organ toxicity-repeated exposure 特定靶器官毒性-长期暴露	: No available data. 无可数据
Aspiration hazard 吸入危害	: No available data. 无可数据
Information on other hazards Endocrine disrupting properties 关于其他危险的资料 内分泌干扰物	: The mixture does not contain endocrine disruptor 这种混合物不含内分泌干扰物。
Other information 其他资料	: No available data. 无可数据

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12 - Ecological Information

第十二章 生态学资料

Toxicity 生态毒性	:	No available data. 无可用数据。
Persistence and degradability 持久性和降解性	:	No available data. 无可用数据。
Bioaccumulative potential 潜在的生物累积性	:	No available data. 无可用数据
Mobility in soil 土壤中的迁移性	:	No available data. 无可用数据
Results of PBT and vPvB assessment PBT 和 vPvB 的结果评价	:	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted 由于化学品安全评估未要求/未开展, 因此 PBT/vPvB 评估不可用
Endocrine disrupting properties 内分泌干扰物	:	The mixture does not contain endocrine disruptor 这种混合物不含内分泌干扰物。
Other adverse effects 其他不良影响	:	No available data. 无可用数据

13 - Disposal Considerations

第十三章 废弃处置

Waste disposal methods

废弃处置方法

Product 产品性质	:	This product is not regarded as hazardous waste, as defined by Regulation (EC) No.1272/2008. 根据法规(EC)第1272/2008号, 该产品不被视为危险废物。
Waste disposal methods 废弃处置方法	:	Refer to relevant national and local regulations before disposal. 回收利用或参阅国家和地方有关法规。
Contaminated packaging 受污染的容器和包装	:	Use and recycle after cleaning. 清洗后使用回收。
Attention abandoned: 废弃注意事项	:	Before disposal, refer to relevant national and local laws and regulations. 废弃处置前应参阅国家和地方有关法规。

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14 - Transport Information
第十四章 运输信息**Transport Attentions:****运输注意事项:**

In the case of land, air and ocean shipping, avoid exposure to fire, water, prevent damp and insolation. The products restrict the use of own steel tanker shipment when railway transport, submit to relevant departments for approval. The transport vehicles should be equipped with the appropriate variety and quantity of fire control equipment and emergency equipment for leakage. In summer, best transport in morning or evening. Transport tank should have grounding chain, the inner of tank should have baffle hole plate to reduce static electricity. Ban mixed operation with antioxidants, acid, alkali metal and amine. Prevent insolate, rain and heat in transit. Keep away from fire, heat and high temperature when stopover. Exhaust pipes of transport vehicle must be equipped with fire retardant equipment. Ban load and unload with mechanical equipments and tools that easy to produce the spark. According to prescribed routes when road transport. Do not stay in residential area and densely populated area. Ban humping when railway transport. Ban bulk transport use wooden boats, concrete boats.

Please refer to section 7-HANDING AND STORAGE also, and requirements of the IATA/ICAO/PG .

在陆运、空运和海运的情况下，应避免暴露于火、水，防止受潮和日晒。本品铁路运输时限使用企业自备罐车装运，装运前需报有关部门批准。运输时运输车辆应配备相应品种和数量的消防器材及泄漏应急处理设备。夏季最好早晚运输。运输时所用的槽（罐）车应有接地链，槽内可设孔隔板以减少震荡产生静电。严禁与氧化剂、酸类、碱金属、胺类、食用化学品等混装混运。运输途中应防曝晒、雨淋，防高温。中途停留时应远离火种、热源、高温区。装运该物品的车辆排气管必须配备阻火装置，禁止使用易产生火花的机械设备和工具装卸。公路运输时要按规定路线行驶，勿在居民区和人口稠密区停留。

具体请参照ADR-RID/PG，IMO/IMDG/PG，IATA/ICAO/PG 以及第七部分的要求。

Maritime transport IMDG**国际海运危险货物规则**

IMDG Code	:	Not hazardous goods
危险类别	:	非危害品
UN-Number	:	Not available data
UN 编号	:	无可数据
Packing group	:	Not available data
包装组别	:	无可数据
Proper shipping name	:	Not available data
运输名称	:	无可数据

DOT regulations**运输部条例**

Hazard class	:	Not hazardous goods
危险类别	:	非危害品

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UN-Number : Not available data
UN 编号 : 无可数据
Packing group : Not available data
包装组别 : 无可数据
Proper shipping name : Not available data
运输名称 : 无可数据

Land transport ADR/RID(cross-border)**陆路运输条例**

Hazard class : Not hazardous goods
危险类别 : 非危害品
UN-Number : Not available data
UN 编号 : 无可数据
Packing group : Not available data
包装组别 : 无可数据
Proper shipping name : Not available data
运输名称 : 无可数据

Air transport ICAO-TI and IATA-DGR**航空运输 国际民航组织和国际航空运输协会危险货物规则**

ICAO-TI-II class : Not hazardous goods
危害等级 : 非危害品
UN/ID Number : Not available data
联合国编号 : 无可数据
Packing group : Not available data
运输包装 : 无可数据
Proper shipping name : Not available data
合适运输名称 : 无可数据

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**防止船舶污染国际公约73/78附件II和散装危险化学品船舶载运的建设和设备的国际代码**

Not available data

无可数据



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15 - Regulatory Information

第十五章 法规信息

Safety, health and environmental regulations/legislation specific for the substance or mixture

针对物质或混合物的安全、健康和环境的特别的法规/法律

German regulations concerning the classification of hazard for water(WGK)

: Not listed
不列入

德国关于水危害分类的规定 (WGK)

Substance of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

: Not listed
不列入

REACH法规(EC) No. 1907/2006的高度关注物

The conditions of restrictions according to Regulation (EC) No. 1907/2006 (REACH) Article 67 and Annex XVII for the manufacturing, placing on the market and use must be observed

: Not listed
不列入

法规 (EC) 1907/2006号 (REACH) 第67条和附件XVII对制造、投放市场和使用上必须遵守的限制条件

Regulation (EC) No. 1907/2006 (REACH) Annex XVII(requiring Authorisation for use)

: Not listed
不列入

法规 (EC) 1907/2006号 (REACH) 附件XVII(需要授权才能使用物质)

Regulation (EC) No. 1907/2006 (REACH)-Pre-registered substance.

: Not listed
不列入

法规 (EC) 1907/2006号 (REACH) 预注册物质

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer

: Not listed
不列入

法规 (EC) 1005/2009号关于破坏臭氧层物质

Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals, Annex I

: Not listed
不列入

法规 (EC) 649/2012号关于危险化学品的出口、进口, 附录I

ELINECS(European List of Notified Chemical Substances)

: Not listed
不列入

ELINECS (欧洲化学品通报清单)

Particular provisions

: No available data.
无可数据

特别规定

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Chemical Safety Assessment

化学品安全评估

No available data.

无可用数据

16 - Other Information

第十六章 其他信息

ACGIH	:	American Conference of Governmental Industrial 美国政府工业学家会议
ADR	:	European Agreement concerning the International Carriage of Dangerous Goods by Road 欧洲关于危险国际货物公路运输的协议
CAS	:	Chemical Abstracts Service 化学文摘社
CLP	:	Classification Packaging and Labelling 分类、包装、标签
EC	:	European Commission 欧洲委员会
ECHA	:	European Chemicals Agency 欧洲化学品中心
EINECS	:	The European Inventory of Existing Commercial Chemical Substances 欧洲现有商业化学物质的目录
GHS	:	Globally Harmonised System of Classification and Labelling of Chemicals 全球化学品分类和标签制度
IARC	:	International Agency for Research on Cancer 国际癌症研究机构
IATA	:	International Air Transport Association 国际航空运输协会
IBC Code	:	International code for the construction and equipment of ships carrying dangerous chemical in bulk 散装危险化学品船舶载运的建设和设备的国际代码
ICAO	:	International Civil Aviation Organization 国际民航组织
IMDG	:	International Maritime Dangerous Goods 国际海运危险货物规则
IC50	:	Inhibitory Concentration fifty 半数抑制浓度

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LC50	:	Lethal Concentration fifty 半数致死浓度
LD50	:	Lethal Dose fifty per cent. 半数致死剂量
MARPOL	:	International Convention for the Prevention of Pollution From Ships 防止船舶造成污染国际公约
REACH	:	Registration Evaluation And Authorisation Of Chemicals 化学品的注册, 评估和授权
RID	:	Regulations Relating to International Carriage of Dangerous Goods by Rail 国际危险货物铁路运输规则
RTECS	:	Registry of Toxic Effects of Chemical Substances 化学品毒性危害注册
STEL	:	Short term exposure limit 短时间暴露限值
TWA	:	Time-Weighted Average 时间加权平均值
OSHA	:	Occupational Safety and Health Administration 职业安全与健康管理局
NIOSH	:	National Institute for Occupational Safety and Health 国家职业安全与健康研究所
TLV-TWA	:	Threshold Limit Value-Time Weighted Average 容许最高浓度-时间加权平均值
TLV-STEL	:	Threshold Limit Value-Short Term Exposure Limit 容许最高浓度-短时间暴露限值
PEL	:	Permissible Exposure Limit 容许暴露限值

Date: Apr. 06, 2023

填表时间: 2023年04月06日

Data Audit Units: EMTEK(GUANGZHOU) CO.,LTD.

数据审核单位: 广州信测标准技术服务有限公司

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Sample Photo:

样品照片:



The End of MSDS

*** MSDS 结束***

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**声 明
Statement**

- 1.本检测报告首页所列信息中除样品来源、接样日期、检测日期、检测结果和检测结论外，均由委托方提供，委托方对样品的代表性和资料的真实性负责，本实验室不承担任何相关责任。
The information as listed on the first page of this test report was all provided by the client except the sample from, date received, test period, test results and test conclusion. The client shall be responsible for the representativeness of sample and authenticity of materials, for which EMTEK shall bear no responsibilities.
- 2.本检测报告以实测值进行符合性判定，未考虑不确定度所带来的风险，特别约定、标准或规范中有明确规定的除外。此种判定方式所带来的风险由客户自行承担，本实验室不承担相关责任。
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This test data is only responsible for the tested sample. The data and results provided by the report without CMA accreditation are not to prove to the society, and EMTEK is not responsible for any economic and legal responsibility for the use of the test data, the direct or indirect losses resulting from the use of the test and all legal consequences.
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All samples and goods are accepted by the EMTEK(Guangzhou) Co., Ltd. (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the Company and any person, firm or company requesting its services (the "Clients").
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3. 除非相关政府部门、法律或法院要求，否则未经公司预先书面同意，本公司毋庸，也并无义务到法院对有关报告作证。
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4. 如果本公司确定报告被不当地使用，本公司保留撤回报告的权利，并有权要求其它适当的额外赔偿。
In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
5. 本公司接受样品进行测试的前提是，该测试报告不能作为针对本公司法律行动的依据。
Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
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Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
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Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of ten years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

