MATERIAL SAFETY DATA SHEET

SAMPLE INFORMATION

样品信息：

Sample Name 样品名称 : Valve Regulated Lead acid battery
铅酸蓄电池

Brand name 商标 : [redacted]

Sample Model : 12V7AH
样品型号

Series Model No. : 12V100AH(Additional models：2V50AH～2V3000AH, 4V4AH～100AH, 6V1AH～
系列型号： 6V600AH, 12V1AH～12V250AH, 4V4AH, 6V4AH, 6V5AH, 6V7AH, 6V10AH, 6V12AH, 6V400AH, 6V600AH, 12V1.2AH, 12V1.3AH, 12V2AH, 12V2.2AH, 12V2.3AH, 12V2.5AH, 12V3.3AH, 12V4AH, 12V5AH, 12V6AH, 12V7AH, 12V8AH, 12V9AH, 12V10AH, 12V12AH, 12V18AH, 12V20AH, 12V26AH, 12V28AH, 12V30AH, 12V35AH, 12V38AH.12V40AH, 12V45AH, 12V50AH, 12V55AH, 12V60AH, 12V65AH, 12V70AH, 12V75AH, 12V80AH, 12V90AH, 12V92AH, 12V100AH, 12V105AH, 12V110AH, 12V120AH, 12V130AH, 12V132AH, 12V150AH, 12V155AH, 12V180AH, 12V200AH, 12V210AH, 2V220AH, 12V230AH, 12V235AH, 12V250AH, 12V255AH, 12V260AH, 12V280AH, 12V300AH, OPZS 6V600AH, OPZV12V100AH, OPZV12V150AH, OPZV12V200AH)

Manufacturer : [redacted]o., Ltd.
制造商 [redacted]

Manufacturer address : Wengcheng Industrial Park,Guandu Development Zone, Wengyuan,Shaoguan City, Guangdong Province,China
制造商地址 中国广东省韶关市翁源县官渡开发区翁城工业园

CLIENT INFORMATION

申请商信息

Applicant : [redacted]., Ltd.
申请商 [redacted]

Applicant Address : [redacted]
申请商地址

TEST INFORMATION

测试信息

Test Items and Request : MATERIAL SAFETY DATA SHEET
测试要求

Date of Issue : Jan. 02, 2025
签发日期

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SUMMARY：

As per request, the contents and formats of the MSDS are prepared in accordance with European Commission Directives 67/548/EEC, 1999/45/EC, Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008, Regulation (EU) No 2020/878 and Regulation (EU) No 453/2010, and is provided per attached.

概要：

MSDS 的内容和格式按照欧盟委员会指令 67/548/EEC、1999/45/EC、法规（EC）第 1907/2006 号、法规（EC）第 1272/2008 号、法规（EU）第 2020/878 号和法规（EU）第 453/2010 号编制。

REMARKS:

1.The MSDS is prepared based on the information provided by client.

2.This sample is likely to be classified as article with substances not intended to be released and is out of scope of a MSDS as set out in OSHA's Hazard Communication Standard, 29 CFR 1910.1200.This MSDS is generated for client's reference only.

备注：

1.MSDS 是根据客户提供的信息而准备的。

2.该样品很可能被归类为含有非预期释放物质的物品，并且超出了 OSHA 29 CFR 1910.1200 中所规定的 MSDS 范围。此 MSDS 仅为客户端的参考生成。

Compiled by:

Carol Liu

Approved by:

Peter Huang

Lab Supervisor

Date 签发日期 :2025-01-02

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification 化学品及企业标识	
Product Name: 品名：	Valve Regulated Lead acid battery 铅酸蓄电池
Model: 型号：	12V7AH
Series Model No.: 系列型号：	12V100AH(Additional models：2V50AH～2V3000AH, 4V4AH～100AH, 6V1AH ～ 6V250AH, 12V1AH ～ 12V250AH, 4V4AH, 6V4AH, 6V5AH, 6V7AH, 6V10AH, 6V12AH, 12V1.2AH, 12V1.3AH, 12V2AH, 12V2.2AH, 12V2.3AH, 12V2.5AH, 12V3.3AH, 12V4AH, 12V5AH, 12V6AH, 12V7AH, 12V8AH, 12V9AH, 12V10AH, 12V12AH, 12V18AH, 12V20AH, 12V26AH, 12V28AH, 12V30AH, 12V35AH, 12V38AH.12V40AH, 12V45AH, 12V50AH, 12V55AH, 12V60AH, 12V65AH, 12V70AH, 12V75AH, 12V80AH, 12V90AH, 12V92AH, 12V100AH, 12V105AH, 12V110AH, 12V120AH, 12V130AH, 12V132AH, 12V150AH, 12V155AH, 12V180AH, 12V200AH, 12V210AH , 2V220AH, 12V230AH, 12V235AH, 12V250AH, 12V255AH, 12V260AH, 12V280AH, 12V300AH, OPZS 6V600AH)
Corporation name: 企业名称：	[redacted]
Address : 地址：	[redacted]
Contact Person: 联系人：	[redacted]
Contact Phone: 联系电话：	[redacted]
Emergency Contact No.: 紧急情况联络号码：	[redacted]
E-mail: 邮箱：	[redacted]
Post code: 邮编：	[redacted]
Identified uses: 用途：	Automotive, Industrial Standby Power and Motive Power. Starting, lighting, ignition for car, truck, DC storage, forklift operation, UPS, EPS, Solar energy storage, Communication power supply, Auto control system, Transportation field, etc. 汽车启动用电源、工业备用电源、发动机用电源。启动、照明、汽车、卡车、直流存储、叉车操作、UPS、EPS、太阳能储能、通信电源、自动控制系统、交通领域等等。

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Section 2 - Hazards Identification 危险分类

Product contains toxic chemicals that are subject to the reporting requirements of Section 302 and 313 of the Emergency Planning and Community Right-to-Know Act of 1986).
产品含有有毒化学品，符合 1986 年《应急规划和社区知情权法》第 302 和 313 条报告要求)。

Section 3 - Composition/Information on Ingredient 成分信息

Chemical Composition 化学成分	CAS No. 化学文摘登记号	Weight（%） 含量
铅/Pb	7439-92-1	73%
锡/Sn	7440-31-5	
二氧化铅/Lead dioxide	1309-60-0	
一氧化铅/Lead oxide	1317-36-8	
ABS	9003-56-9	7.7%
玻璃纤维棉/AGM	65997-17-3	7.3%
其他/Others	/	12%

Section 4 - First Aid Measures 急救措施	
Inhalation: 吸入	Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician 将患者移动到新鲜空气处。如呼吸困难，给输氧。如呼吸停止，进行人工呼吸。并咨询医生。
Skin contact: 皮肤接触	Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes. 立即使用大量清水冲洗至少 15 分钟；彻底除去受污染的衣物，包括鞋子。如果症状持续，寻求医疗帮助。衣物在重新使用前清洗干净。丢弃污损的鞋子。
Eye contact: 眼睛接触	If you feel unwell, Immediately rinse your eyes with plenty of water while keeping your eyelids open and check and remove your contact lenses. Continue flushing for at least 20 minutes, and the neutral saline solution can be used immediately. If necessary, continue flushing during transport to an emergency care facility. Be careful not to flush the contaminated water over the unaffected eye and transport the victim quickly to emergency services 如果感到不适，立即用大立即用大量的水冲洗眼睛，同时保持眼睑打开，检查并取下隐形眼镜。继续冲洗至少 20 分钟，中性生理盐水可立即使用。如有必要，在运送到急救护理设施期间继续进行冲洗。注意不要将受污染的水冲洗到未受影响的眼睛上面，迅速将受害者运送到急救机构。
Ingestion: 吞咽	Consult physician immediately. 立即咨询医生。

Section 5 - Fire Fighting Measures 消防措施	
Suitable extinguishing Media: 灭火介质：	CO2; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire. 二氧化碳；泡沫；干粉。不要对着电池直接使用二氧化碳，避免吸入。电池周边火灾使用合适介质灭火。
Unsuitable extinguishing Media: 不合适的灭火介质：	Not applicable 无资料
Specific Hazards arising from the chemical: 化学物质特定危险性：	Not applicable 无资料
Protective Equipment and precautions for firefighters: 消防人员的防护设备及注意事项：	Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down. 使用正压自给式呼吸器，使用水灭火时谨防酸水飞溅。穿耐酸服，防酸手套、眼镜和面屏。如果电池在充电，先关闭充电设备电源。但请注意使用连接线连接的电池组仍然可能导致触电。

Special hazards caused by the material, its products of combustion or resulting gases: 该材料及其燃烧产物或产生的气体引起的特殊危害:	Highly flammable hydrogen gas is generated during charging and operation of batteries. If ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Carefully follow manufacturer's instructions for installation and service. Keep away all sources of gas ignition and do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery. Follow manufacturer's instructions for installation and service. 充电过程中产生高度易燃的氢气，如果被点燃的香烟、明火或火星引燃，可能产生电池爆炸引起的碎片和腐蚀性电解液的飞溅。严格遵循制造商的安装和操作指引。远离所有的气体点火源，不允许金属元件同时接触电池的正负极端柱。遵循制造商的安装和服务建议

Section 6 - Accidental Release Measures 泄露应急处理	
Personal Precautions, protective equipment, and emergency procedures: 个人预防措施、防护设备和紧急程序：	Stop flow of material, contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of un-neutralized acid to sewer. Acid must be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA. 围堵物料，防止扩散，用沙土和蛭石吸收小的泄漏物。不要使用可燃物料。如可能的话，用苏打灰/碳酸氢钠/石灰等小心中和溢出的酸。应急处理人员穿戴好防酸工作服，靴子，手套和面罩。不允许将未中和的酸流入下水道。酸的处理应符合当地法规要求，咨询环保机构的要求。
Environmental Precautions: 环境注意事项：	Don't let the product enter the sewer. 不要让产品进入下水道。
Methods and materials for cleaning up: 清理的方法和材料：	Dispose of as a hazardous waste. Dispose of in accordance with applicable local, state and federal regulations. 作为危险废物处理，处理依照当地法律法规。

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Section 7 - Handling and Storage 操作处置与储存	
Operation disposal： 操作处置	Unless involved in recycling operations, do not breach the casing or empty the contents of the battery. Handle carefully and avoid tipping, which may allow electrolyte leakage. There may be increasing risk of electric shock from strings of connected batteries. Keep containers tightly closed when not in use. If battery case is broken, avoid contact with internal components. Keep vent caps on and cover terminals to prevent short circuits. Place cardboard between layers of stacked automotive batteries to avoid damage and short circuits. Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water. Use banding or stretch wrap to secure items for shipping. 除涉及回收操作，其他时候请不要打开电池外壳或将电池内部件取出。轻拿轻放，同时避免电池倾翻导致电池中的电解液漏出。电池连接线之间可能增加触电风险。非使用时保持容器紧闭。如果电池外壳破损，避免接触内部物质。保持排气孔塞有效并盖住端柱，以防止短路。在电池堆垛之间放置硬纸板，以防止损坏和短路。远离可燃物、有机化合物、还原物、金属、强氧化剂和水。使用收缩膜和打包带用于运输固定。
Store considerations： 存储注意事项	Store batteries under roof in cool, dry, well-ventilated areas separated from incompatible materials and from activities that may create flames, spark, or heat. Store on smooth, impervious surfaces provided with measures for liquid containment in the eventof electrolyte spills. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short-circuit. Room ventilation is required for batteries utilized for standby power generation. Never recharge batteries in an unventilated, enclosed space. 电池储存在通风良好、干燥、温度适宜的带顶棚区域，远离不相容物质，存储区域周边杜绝可能产生火焰、火花和高温的活动。储存区域平滑、有不透水层，有液体容器应对电解液泄漏。远离金属物 体，避免电池正负极端柱短接带来危险。使用电池作为备用发电的房间需要保持通风。严禁在不通 风、密闭的空间内进行电池充电。
Charging： 充电	There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged. 不论是否充电，充电设备和使用电线联接的电池组都可能带来触电风险。电池停止使用或拆分电池联接线时，关闭充电设备电源。正在充电的电池会释放易燃的气体，充电区域需要保持通风。保持电池的通气口在原位。禁止吸烟，同时避免其他产生火星、火花或高温的活动。
Other： 其他	Follow Manufacturers Recommendations regarding maximum recommended currents and operating temperature range. Do not overcharge beyond the recommended upper charging voltage limit. Applying pressure or deforming the battery may lead to disassembly followed by eye, skin and throat irritation. 遵循制造商推荐的关于电流和操作温度范围的建议。不要超压充电。电池受压或变形可能导致电池损坏，并对眼睛、皮肤和咽喉造成刺激。

Section 8 - Exposure Controls, Personal Protection 控制接触/个人防护	
Process control: 工程控制：	Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant. Handle batteries cautiously, do not tip to avoid spills. Make certain vent caps are on securely. If battery case is damaged, avoid bodily contact with internal components. Wear protective clothing, eye and face protection, when filling, charging, or handling batteries. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Charge batteries in areas with adequate ventilation. General dilution ventilation is acceptable. 在通风良好的区域内储存和操作。如果使用了机械通风，部件必须是耐酸的，通风等级应和条件匹配。小心处理电池，不要翻倒电池，否则可能导致泄漏.确保顶盖盖好。如果电池外壳损坏,当充装、充电或处理电池时，避免身体接触内部部件.佩戴防护服，眼睛和面部防护。不允许金属物质同时接触电池正负极，充电区域应有足够通风.一般的稀释通风是可接受的。
Eye protection: 眼睛防护：	NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT. 成品电池的正常处理无防护要求。 If necessary to handle damage product where exposure to the organic electrolyte is a possibility, chemical splash goggles and a face shield are recommended. 如果需要处理损坏的产品，可能接触到电池内部电解液时，请佩戴防化学飞溅的防护眼镜和防护面罩。
Skin protection: 皮肤防护：	NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT. 成品电池的正常处理无防护要求。 If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots. 如果电池外壳损坏，使用的橡胶或其他耐酸的保护至肘部位置的长手套，耐酸的围裙，衣裤和靴子.。
Respiratory protection: 呼吸防护：	NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT. 成品电池的正常处理无防护要求。 When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection, or meet local regulatory required respirator (like GBT 18664 compliance in China). 当硫酸酸雾浓度超过容许暴露限值时，使用 NIOSH/MSHA 许可的呼吸防护或符合国家标准(如 GBT18664)要求的防酸面罩。
Other Protection: 其他防护措施：	In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited watersupply. Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries. Wash Hands after handling. Safety shoes are recommended when handing batteries.All footwear must meet requirements of EN ISO 20345:2011. 在任何硫酸溶液处理浓度大于 1%的区域,应提供紧急洗眼器和淋浴装置,并保证不断水供应。给电池添加水或电解液时，推荐使用防化围裙和防护面罩。操作后洗手。 在处理电池时，建议使用安全鞋。所有的鞋类都必须符合 EN ISO 20345：2011 的要求。

Section 9 - Physical and Chemical Properties 理化特性	
Appearance and Odor: 外观和气味：	Plastics cement shell 塑胶外壳 Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor. 制成品；无明显气味。 电解液为透明液体，具有辛辣的气味。
Melting point: 熔点：	Lead 327.4℃
Boiling point: 沸点:	230° F / 110℃
Specific Gravity(water=1) : 比重(水=1)：	1.215-1.350
Solubility in water: 水中溶解性	100%（electrolyte）
Solubility in organic solvents: 有机溶剂中溶解性	Not applicable 无资料
Auto-Ignition temperature: 自燃温度：	Not applicable 无资料

Section 10 - Stability and Reactivity 稳定性和反应性	
Stability: 稳定性:	Stable under recommended conditions of storage. 在推荐的储存条件下保持稳定。
Conditions to Avoid: 需要避免的情况:	Sparks and other sources of ignition; high temperature; over charging. 火花和其他来源的明火；高温；过充。
Hazardous Decomposition Products: 危险分解产物:	Electrolyte: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide. 电解液：三氧化硫、一氧化碳、二氧化硫、硫化氢和硫酸雾。 Lead compounds: Temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas. 铅化合物：温度高于铅的熔点温度可能会产生有毒金属烟雾、蒸汽或灰尘，接触强酸或碱或氢可能产生剧毒气体-胂
Disallowed compound: 禁配物	Electrolyte: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

	电解质：接触易燃物和有机材料可能会导致火灾和爆炸。与强发生强烈反应，还原性物质，金属，三氧化硫气体，强氧化剂，和水发生剧烈反应。与金属反应可能产生有毒的二氧化硫气体和易燃的氢气。 Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents. 铅化合物：避免接触强酸，碱，卤化物，硝酸钾，高锰酸盐，过氧化物，还原物等。 Arsenic compounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas –arsine 砷化物：强氧化剂；三氮化溴。提示：氢气可以与无机砷发生反应生成剧毒气体—胂

Section 11 - Toxicological Information 毒理学信息

Under normal conditions of battery use, internal components will not present a health or environmental hazard. The following related information is provided for battery electrolyte (acid) and lead for exposures that may occur during the battery production or container breakage or under extreme heat conditions such as fire. 正常情况下使用电池，内部的成分不会产生健康或环境危害. 以下相关信息是基于电池生产过程、外壳破损或极端温度条件下（如着火）可能产生电池电解液（酸）和铅暴露下提供的.	
Routes of entry: 侵入途径	
Installation：吸入	Acid mist from formation process may cause respiratory irritation. 释放的酸雾可能会引起呼吸道刺激。
Skin contact：皮肤接触	Acid may cause irritation,burns and/or ulceration. 酸可能会引起刺激、烧伤和/或溃疡。
Skin absorption：皮肤吸收	Not a significant route of entry.非主要途径。
Eye contact：眼睛接触	Acid may cause sever irritation,burns,cornea damage and/or blindness. 酸可能会引起严重的刺激、烧伤、角膜损伤和/或失明。
Ingestion：摄入	Acid may cause irritation of mouth,throat,esophagus and stomach. 酸可能会刺激口腔、喉咙、食道和胃
Sign and Symptoms of Over Exposure: 体外暴露	
Acute effects 急性效应	Over exposure to lead may lead to loss of appetite,constipation,sleeplessness and fatigue.Over exposure to acid may lead to skin irritation,corneal damage of the eyes and upper respiratory system. 过度接触铅可能会导致食欲不振，便秘，失眠和失眠 疲劳过度暴露于酸可能会导致皮肤刺激，眼睛的角膜损伤和 上呼吸道系统。
Chronic effects 慢性效应	Lead and its components may cause damage to kidneys and nervous system.Acid and its components may cause lung damage and pulmonary conditions. 铅及其成分可能对肾脏和神经系统造成损害。酸及其 这些成分可能会引起肺损伤和肺部疾病。

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Potential to cause cancer 可能致癌	The interational agency for research on cancer has classified “strong inorganic acid mist containing sulfuric acid” as a category 1 carcinogen,a substance that is carcinogenic to humans.This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.Inorganic acid mist is not generated under normal use of this product.Misuse of the product,such as overcharging,may however result in the generation of sulfuric acid mist. 癌症研究的国际机构将“强无机酸雾”含有硫酸作为第一类致癌物，一种致癌物质 人这种分类不适用于液体形式的硫酸或硫酸 电池中包含的解决方案。正常使用时不产生无机酸雾 这个产品。然而，滥用该产品，如过度充电，可能会导致硫酸薄雾的生成。
Acute toxicity： 急性毒性	Sulfuric Acid: Severe skin irritation, damage to cornea, upper respiratory irritation. Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability 硫酸：严重的皮肤过敏，眼角膜损伤和上呼吸道刺激。 铅化合物：中毒的症状包括头痛、疲劳、腹痛、食欲不振、肌肉疼痛和虚弱、睡眠障碍和易怒。
Irritation： 刺激性	Acid mist from formation process may cause respiratory irritation. 从形成过程中产生的酸雾可能会引起呼吸道刺激
Corrosiveness： 腐蚀性	Sulfuric Acid: Severe irritation, burns and ulceration. Lead Compounds: Not absorbed through the skin. 酸：严重刺激、烧伤和腐蚀。 铅化合物：不通过皮肤吸收。
Sensitization： 致敏性	Not applicable 无资料
Teratogenicity： 致畸性:	Not applicable 无资料
Reproductive Toxicity： 生殖毒性:	Not applicable 无资料
Mutagenicity (Genetic Effects) : 致突变性(遗传效应):	Not applicable 无资料
Toxicologically Synergistic Materials: 毒理增效材料:	Not applicable 无资料
Carcinogenicity: 致癌性:	Not applicable 无资料
Chronic Effects: 慢性影响:	Sulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat & bronchial tubes. Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50 µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

	硫酸: 可能牙齿侵蚀，鼻子发炎，喉咙&支气管发炎。铅化合物：贫血，神经病，尤其是运动神经,带有腕下垂；肾损伤；生殖变异。铅和铅化合物工作场所的重复暴露可能产生神经系统中毒。一些毒理性报告显示血铅超过 50μg/100 ml 或更高时有异常的体内传导速率。严重的铅暴露可能产生中枢神经系统损坏，大脑和造血系统损坏.

Section 12 - Ecological Information 生态学信息	
Anticipated behavior of a chemical product in environment/possible environmental impace/ecotoxicity 化学品在环境中的预期行为/可能的环境冲击/生态毒性	Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead. 铅在土壤和沉积物维持很久。环境恶化方面没有数据。铅在生态学分室中的移动时很缓慢的。水生生物、陆生生物和植物体内积累铅，但通过食物链积累的量很小。大多数的研究不包含铅化合物和元素铅。
Aquatic toxicity 水生物毒性	24-hr LC50, freshwater fish(Brachydanio rerio 斑马鱼): 82 mg/L 淡水鱼 24-小时半数致死的浓度 96 hr-LOEC, freshwater fish (Cyprinus carpio 鲤鱼): 22 mg/L 淡水鱼 96-小时最低有影响的浓度 48 hr LC50 (modeled for aquatic invertebrates 水生无脊椎动物模型): <1 mg/L, based on lead bullion 基于粗铅
Persistence and Degradability 持久性和可降解性	Limited information was available at the time of this review. 在审查时，可获得的资料有限。
California proposition 65: 加州 65	The state of california has determined that certain battery terminals and related accessories contain lead and lead compounds,chemicals known to the state of california to cause cancer and reproductive harm.
Warming 警告	Wash hands thoroughly after handing batteries.在处理电池后，请彻底洗手。
Other Adverse Effects 其他不良影响	Limited information was available at the time of this review. 在审查时，可获得的资料有限。

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Section 13 - Disposal Considerations 废弃处置

Product disposal：产品处置建议：

Waste disposal method	Battery electrolyte(acid):neutralize as above for a spill,collect residue,and place in a drum or suitable container.Dispose of as hazardous waste.Do not flush lead contaminated acid to sewer. 电池电解液（酸）：如上所述中和溢出，收集残留物，并放入桶或合适的容器中。作为危险废物的处置。不要冲洗铅污染的酸到下水道。
Batteries	Send to lead smelter for reclamation following applicable federal,state and local regulations.Product can be recycled along with automotive (SLI) lead acid batteries. 按照适用的联邦、州和地方法规，送往铅冶炼厂进行回收规程产品可以与汽车（SLI）铅酸电池一起回收利用。

Section 14 - Transport Information 运输信息

UN Number 联合国危险货物运输编码	Not restricted, according to sp238.不受限制，依据特殊条款 238
UN Proper shipping name 运输名称	Not restricted, according to sp238.不受限制，依据特殊条款 238
Packing group 包装类别	Not restricted, according to sp238.不受限制，依据特殊条款 238
Marine pollutant 海洋污染物	Not restricted, according to sp238.不受限制，依据特殊条款 238
RID/ADR	Not restricted, according to sp238.不受限制，依据特殊条款 238
IMDG Code	Not restricted, according to sp238.不受限制，依据特殊条款 238
ICAO/IATA	Not restricted, according to sp238.不受限制，依据特殊条款 238
振动试验、压差试验和55℃漏液试验 Vibration test, pressure differential test and leakage test at 55℃	This product has passed the vibration test, pressure differential test and leakage test at 55℃ in accordance with the UNITED NATIONS Recommendations on the "TRANSPORT OF DANGEROUS GOODS" Model Regulations ST/SG/AC.10/1/Rev.22 3.3 SPECIALPROVISIONS 238（a&b）. 本品已通过按照联合国《关于危险货物运输的建议书规章范本》ST/SG/AC.10/1/Rev.22 3.3 章特殊规定 238（a&b）进行的振动试验、压差试验和 55℃漏液试验。
备注 Comment	The battery must be protected appropriately to prevent a short circuits and any battery powered device, equipment or vehicle must be effectively prepared to prevent unintentional activation. 电池必须具有适当的防短路措施，若是以电池为动力的装置、设备或车辆还须采取有效的防止意外启动措施。

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Section 15 - Regulatory Information 法规信息

《Dangerous Goods Regulation》
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《Informational Maritime Dangerous Goods》Amend 41-22
《Technical Instructions for the Safe Transport of Dangerous Goods》
《Classification and code of dangerous goods》
《Occupational Safety and Health Act》(OSHA)
《Toxic Substances Control Act》(TSCA)
《Consumer Product Safety Act》(CPSA)
《Federal Environmental Pollution Control Act》(FEPCA)
《The Oil Pollution Act》(OPA)
《Superfund Amendments and Reauthorization Act TitleIII (302/311/312/313)》SARA
《Resource Conservation and Recovery Act》(RCRA)
《safety drinking water act》(CWA)
《California Propositions 65》
《OSHA Hazard Communication Standard》 (29 CFR 1910.1200)

Section 16 - Additional Information 附加说明

The data come from the international authoritative database and the data submitted by the enterprise, and the other information is based on the knowledge currently mastered by the company. We try our best to ensure the correctness of all the information, but due to the diversity of information sources and the limitations of our knowledge, this document is for users' reference only. The user of the safety technical specification shall judge the rationality of the relevant information according to the purpose of use. We are not liable for any damage caused by the operation, storage, use and disposal of the product.

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