

北京泰来科贸公司
BEIJING TAILAI TECHNO TRADING CO.

依据联合国 GHS 制度第八修订版编/According to UN GHS (the 8th revised edition)

材料安全数据表

Material Safety Data Sheet

产品名称:	铅氧蓄电池（非硫酸电解液）
Product Name:	Lead-Oxide Battery (Non-Acid Electrolyte)

编制/Written by: *Linda*
(Linda)

审核/Inspected by: *Jose*
(Jose)

批准/Approved by:



发布：中科检测认证服务（深圳）有限公司

ISSUED BY: ZHONGKE SERVICES OF TESTING (SHENZHEN) CO., LTD.

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Revision Date: Jan. 19, 2021

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修订日期: 2021 年 01 月 19 日

项目编号/Item No.: 21A510A110

Product Name: Lead-Oxide Battery (Non-Acid Electrolyte)

Revision Date: Jan. 19, 2021

MSDS No.: NMS.210.119.001.TLK

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化学品及企业标识

Product and Company Identification

产品标识/Product identification

产品名称:	铅氧蓄电池 (非硫酸电解液)
Product Name:	Lead-Oxide Battery (Non-Acid Electrolyte)
型号:	/
Model No.:	/
CAS No.:	不适用/Not applicable
EC No.:	不适用/Not applicable
分子式:	不适用
Molecular formula:	Not applicable

物质或混合物的相关用途标识及限制用途

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

推荐用途:	能量存储
Identified uses:	Energy storage
限制用途:	无特别说明
Uses advised against:	No special note

申请商、供应商的详细信息/Details of the applicant, supplier

申请商:	北京泰来科贸公司
Applicant:	BEIJING TAILAI TECHNO TRADING CO.
地址:	北京市朝阳区北苑路 170 号院 3 号楼 25 层 1 单元 2907
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RAND: 558218



SIGNATURE: ZHONGKE SERVICES OF TESTING (SHENZHEN) CO., LTD.

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传真号码:	/
Fax:	/
电子邮箱:	/
E-mail:	/

1 企业应急电话/Emergency telephone number

企业应急电话:	+86-13901218662
Emergency telephone:	+86-13901218662

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危险性概述

Hazard Description

1	<p>电池的化学材料储存在密封的外壳中, 外壳设计能够承受正常使用时遇到的温度和压力。因此, 在正常使用期间, 不存在着火/爆炸的化学危险和物理危险。但是, 请勿打开、短路、挤压、燃烧、拆卸电池, 勿将电池暴露于火焰中, 勿混合不同型号、不同化学性质或不同类型的电池。如电池盒被损坏, 可能会释放出有害物质。</p> <p>For the battery, chemical materials are stored in a hermetically sealed case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger. However, do not open, short-circuit, squeeze, burn, disassemble, expose to flame, mix different models, different chemical properties or different types of batteries. The battery case will be breached at the extreme, hazardous materials may be released.</p>
2	<p>依据联合国 GHS 制度第八修订版规定, 该产品所属危险性类别及标签要素如下:</p> <p>Hazard class and label elements of the product according to According to UN GHS (the 8th revised edition):</p>

1 GHS 危险性类别/GHS Hazard class

急性毒性-经口	类别 4
Acute toxicity-Oral	Category 4
急性毒性-吸入	类别 4
Acute toxicity-Inhalation	Category 4
皮肤腐蚀/刺激	类别 1A



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Skin Corrosion/Irritation	Category 1A
严重眼损伤/眼刺激	类别 1
Serious Eye Damage/Irritation	Category 1
生殖毒性	类别 1
Reproductive toxicity	Category 1
生殖毒性-影响哺乳期或通过哺乳期产生影响	附加类别
Reproductive toxicity, Additional category for effects on or via lactation	Additional Category
特定目标器官毒性-反复接触	类别 2
Specific target organ toxicity - report exposure	Category 2
危害水生环境-急性毒性	类别 1
Hazardous to the aquatic environment - Acute	Category 1
危害水生环境-慢性毒性	类别 1
Hazardous to the aquatic environment- Chronic toxicity	Category 1

GHS 标签要素/GHS label elements

象形图: Pictogram(s):	
信号词:	危险
Signal word:	Danger

危险性说明/Hazard statements

H302:	吞咽有害。
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	Harmful if swallowed.
H314:	造成严重皮肤灼伤和眼损伤。 Causes severe skin burns and eye damage.
H318:	造成严重眼损伤。 Causes serious eye damage.
H332:	吸入有害。 Harmful if inhaled.
H360:	可能对生育能力或胎儿造成伤害。 May damage fertility or the unborn child.
H362:	可能对母乳喂养的儿童造成伤害。 May cause harm to breast-fed children.
H372:	长期或重复接触会对器官造成伤害。 Long-term or repeated contact can cause damage to organs.
H400:	对水生生物毒性极大。 Very toxic to aquatic life.
H410:	对水生生物毒性极大并具有长期持续影响。 Very toxic to aquatic life with long lasting effects.

防范说明/Precautionary statements

预防措施/Prevention

P201:	使用前获特别指示。 Obtain special instructions before use.
P202:	在明白所有安全防护措施之前请勿搬动。 Do not handle until all safety precautions have been read and understood.
P260:	不要吸入粉尘/烟/气体/烟雾/蒸气/喷雾。 Do not breathing dust/fume/gas/mist/vapours/spray.
P263:	怀孕/哺乳间避免接触。 Avoid contact during pregnancy/while nursing.



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P264:	作业后彻底清洗。 Wash thoroughly after handling.
P270:	使用本产品时不要进食、饮水或吸烟。 Do not eat, drink or smoke when using this product.
P273:	避免释放到环境中。 Avoid release to the environment.
P280:	戴防护手套/防护服/护眼/防护面具。 Wear protective gloves/protective clothing/eye protection/face protection.

◆ 事故响应/Response

P310:	立即呼叫解毒中心/医生。 Immediately call a POISON CENTER or doctor/physician.
P330:	漱口。 Rinse mouth.
P363:	沾染的衣服清洗后方可重新使用。 Wash contaminated clothing before reuse.
P301+P312:	如误吞咽: 若感觉不适, 呼叫解毒中心/医生。 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340:	如果吸入: 将受害人移到空气新鲜处, 在呼吸舒适的地方休息。 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+P313:	如接触到或有疑虑: 求医/就诊。 IF exposed or concerned: Get medical advice/attention.
P309+P311:	如接触到或感觉不适: 呼叫解毒中心/医生。 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P301+P330+P331:	如误吞咽: 漱口。不要诱导呕吐。 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.



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P303+P361+P353:	如皮肤(或头发)沾染: 立即去除/脱掉所有沾染的衣服。用水清洗皮肤/淋浴。 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338:	如进入眼睛: 用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出, 取出隐形眼镜。继续冲洗。 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ 安全储存/Storage

P405:	存放处须加锁。 Store locked up.
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◆ 废弃处置/Disposal

P501:	按照地方/区域/国家/国际规章处置内装物/容器。 Dispose of contents/container in accordance with local/regional/national/international.
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■ 危害描述/Hazard description

◆ 物理和化学危害/Physical and chemical hazards

	不易燃, 无特殊燃爆特性。 Non-flammable, no special explosive characteristics.
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◆ 健康危害/Health hazards

吸入:	咳嗽、头痛、疲劳、倦睡。
Inhalation:	Harmful if inhaled.
食入:	灼烧感、头痛、意识模糊、头晕、神志不清。
Ingestion:	Harmful if swallowed. Suspected of causing cancer. May damage fertility or the unborn child.
皮肤接触:	造成严重皮肤灼伤。
Skin contact:	Causes severe skin burns
眼睛接触:	红肿、疼痛、灼伤感。
Eye contact:	Redness, pain, burning.



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环境危害/Environmental hazards

请参考 MSDS 第 12 部分。

Please refer to Section 12 of MSDS.

3

成分/组成信息

Composition/Ingredient Data

物质/Material

混合物/Mixture

成分/Component(s)	含量/Content, %	CAS No.
铅/Lead	65.0-80.0	7439-92-1
硫酸氢铵/Ammonium Bisulfate	10.0-15.0	7803-63-6
丙烯腈丁二烯苯乙烯共聚物 (外壳) /Acrylonitrile Butadiene Tea Ethylene Copolymer (Shell)	1.5-2.0	9003-56-9
聚丙烯 (外壳) /Acrylonitrile (shell)	1.0-2.0	9003-07-0
硫酸钠/Sodium Sulfate	0.4-1.0	7757-82-6
硫酸镁/Magnesium Sulfate	0.4-1.0	7487-88-9
环氧树脂/Epoxy Resin	0.1-0.3	61788-97-4
玻璃纤维隔板/Fiberglass Partition	0.1-0.3	65997-17-3
聚乙烯隔板/Polyethylene Separator	0.1-0.3	9002-88-4
聚氯乙烯隔板/PVC Separator	0.1-0.3	9002-86-2

4

急救措施

First Aid Measures

急救措施描述/Description of first aid measures

一般性建议:

将材料安全数据表出示给到达现场的医生。
在接受急救措施后, 必要时送往医院治疗。

General advice:

Show this material safety data sheet to the doctor in attendance.
After receiving the first-aid measure required, consult a physician if necessary.

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皮肤接触:	<p>脱掉被污染的衣服和鞋子。</p> <p>用温和的肥皂和大量的水洗掉。</p> <p>如果刺激症状发生或持续发展, 就医。</p>
Skin contact:	<p>Remove contaminated clothing and shoes.</p> <p>Wash off with mild soap and plenty of water.</p> <p>If skin irritation occurs or persists, consult a physician immediately.</p>
眼睛接触:	<p>检查并摘除任何隐形眼镜, 偶尔提起上下眼睑, 立即用清水冲洗眼睛, 直到残留物清除为止。</p> <p>提供一种方便的洗眼设备和快速安全淋浴, 不要用手揉眼睛。</p> <p>如有刺激症状发生或持续, 建议就医。</p>
Eyes contact:	<p>Check for and remove any contact lenses, occasionally lifting the upper and lower eyelids. Immediately flush eyes with running water, disappear until the chemical residues so far.</p> <p>Provide a readily-accessible eyewash facility and quick-drench safety shower.</p> <p>Do not rubbing eyes with hand.</p> <p>If symptoms develop and persist, consult a physician.</p>
吸入:	<p>将受害者移到新鲜空气处, 在呼吸舒适的地方保持休息。</p> <p>如呼吸困难, 由受过培训的人员进行吸氧。</p> <p>如果健康影响持续, 应立即就医。</p>
Inhalation:	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>If breathing is irregular, provide artificial respiration or oxygen by trained personnel.</p> <p>Get medical attention if adverse health effects persist or are severe.</p>
食入:	<p>用水漱口。将受害者移到新鲜空气处, 在呼吸舒适的地方保持休息。</p> <p>如果材料被吞食和患者是有意识的, 喝少量的水。</p> <p>如果患者感觉不舒服并呕吐, 给水可能是危险的。</p> <p>除非有医务人员的指导, 不要诱导呕吐。</p> <p>如果发生呕吐, 头部应保持低位, 使呕吐物不能进入肺部。</p> <p>如果不利健康的影响持续或严重的话, 就医, 切勿向失去意识的患者口喂任何食物。</p>
Ingestion:	<p>Wash out mouth with water. Move exposed person to fresh air. Keep person warm and at rest.</p> <p>If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.</p> <p>Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel.</p>



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	<p>If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.</p> <p>Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.</p>
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主要症状和影响, 急性和慢性影响/Most important acute and delayed symptoms/effects

1	<p>最重要的已知的症状和影响如第 2 部分和/或第 11 部分。</p> <p>The most important known symptoms and effects are described in section 2 and/or in section 11.</p>
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紧急医疗处理和特殊处理的说明/Immediate/special treatment

1	<p>继续采取急救措施, 根据出现的症状进行针对性处理。</p> <p>Continue with first aid measures. Treat symptomatically and supportively.</p>
2	<p>注意症状可能会出现延迟。</p> <p>Symptoms may be delayed.</p>

5 消防措施 Firefighting Measures

灭火介质/Extinguishing agent

合适的灭火介质:	用干的砂子、干燥化学物或 CO ₂ 泡沫灭火。 可以使用水喷雾冷却暴露于火的容器/材料。使用最适合周围火势的灭火媒介。
Suitable extinguishing agents:	Use dry sand, dry chemical or CO ₂ foam extinguishing. Water spray can be used to cool fire exposed containers/materials. Use extinguishing media most appropriate for the surrounding fire.
不合适的灭火介质:	避免用太强烈的水汽灭火, 因为它可能会使火苗蔓延分散。
Unsuitable extinguishing agents:	Do not uses a solid water stream as it may scatter or spread fire.

源于此物质或混合物的特别危害/Special hazards arising from the substance or mixture

1	<p>如暴露在火灾中可能会产生: 碳氧化物、金属氧化物等。</p> <p>If this product is involved in a fire, the following can be released: Carbon oxides, metal oxides, etc.</p>
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■ 灭火注意事项及措施/Fire precautions and measures

1	消防人员必须戴正压式呼吸器, 穿全身的消防服, 在上风向灭火。 Firefighters must wear self-contained breathing apparatus, wear full body fire suit, fire extinguishing in the upwind.
2	尽可能将产品/内容物从火场移至空旷处。 As far as possible will be transferred to empty containers from the scene.
3	喷水保持火场产品/内容物冷却, 直至灭火结束。 Keep the fire water spray containers cooling, until the end of fire.
4	处在火场中的产品/内容物若已经变色, 必须马上撤离。 If the containers in the fire ground have been color, must be evacuated immediately.
5	隔离事故现场, 禁止无关人员进入。 Isolated accident scene, prohibit access.
6	收容和处理消防水, 防止污染环境。 Receiving and processing of fire water, to prevent environmental pollution.

6

泄漏应急处理

Accidental Release Measures

■ 作业人员防护措施, 防护设备和紧急处理程序

Personal precautions, protective equipment and emergency procedures

1	涉及任何个人风险或没有经过适当的培训不要采取任何行动。 No action shall be taken involving any personal risk or without suitable training.
2	严禁不必要的和未受保护的人员进入。 Keep unnecessary and unprotected personnel from entering.
3	请勿触摸或穿过溢出的材料, 避免滑倒。 Do not touch or walk through spilt material, avoid slipping.
4	避免吸入蒸气/粉尘。 Avoid breathing steam/dusts.
5	保证充分的通风。当通风不良时, 佩戴适当的呼吸器。

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产品名称: 铅蓄电池 (非硫酸电解液) Product Name: Lead-Oxide Battery (Non-Acid Electrolyte)	修订日期: 2021 年 01 月 19 日 Revision Date: Jan. 19, 2021	项目编号/Item No.: 21A510A110 MSDS No.: NMS.210.119.001.TLK
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	Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
6	应急人员将配备适当的个人防护装备 (见第 8 部分)。 Put on appropriate personal protective equipment (see section 8).

环境保护措施/Environmental precautions

1	在确保安全的情况下, 采取措施防止进一步的泄漏或溢出。 Prevent further leakage or spillage if safe to do so.
2	避免排放到周围环境中。 Discharge into the environment must be avoided.

泄漏化学品的收容、清除方法及所使用的处置材料

Methods and materials for containment and cleaning up

1	收集和处置时不要产生粉尘。机械收集。放入合适的密闭容器中待处理。 Pick up and arrange disposal without creating dust. Collect mechanically. Keep in suitable, closed containers for disposal.
2	处理: 污染的材料必须按照国家和/或当地的法规处理。 Disposal: Contaminated material must be disposed of in accordance with all State and/or Local regulations.

7

操作处置和储存

Handling and Storage

操作注意事项/Precautions for safe handling

1	穿戴适当的个人防护设备 (见第 8 部分) Put on appropriate personal protective equipment (see section 8).
2	处理、存储和加工材料的地方禁止饮食和吸烟。 Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
3	工人在饮食和抽烟前应洗手和洗脸。避免接触眼睛, 避免吸入粉尘。 Workers should wash hands and face before eating, drinking and smoking. Avoid contact eyes. Avoid breathing dust.



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4	提供合适的排风设备。在通风良好处进行操作。 Provide suitable exhaust equipment. Operate in a well-ventilated place.
5	一般性的防火保护措施。远离热源、火花、明火和热表面。 Normal measures for preventive fire protection. Keep away from heat/sparks/open flames/hot surfaces.
6	遵守良好的卫生程序和卫生习惯。 Observe good housekeeping procedures and hygiene practices.
7	在机器上提供适当的排气通风和集尘。 Provide for appropriate exhaust ventilation and dust collection at machinery.
8	操作后彻底清洗。 Wash thoroughly after handling.
9	搬运时要轻装轻卸, 防止包装及容器损坏。 Handling carefully to prevent damage the packaging and container.
10	患有皮肤过敏史的个体不应受雇于任何与本产品有关的作业。 Persons with a history of skin sensitization problems should not be employed in any process in which this product is used.

■ 储存注意事项/Precautions for storage

1	按照当地法规存储。储存在干燥、阴凉和通风良好的地方。保持容器/包装密闭。 Store in accordance with local regulations. Stored in a dry, cool and well-ventilated area. Keep container tightly closed.
2	远离高温和明火, 远离不相容材料 (见第 10 部分)。 Keep away from open flames and high temperatures, away from incompatible materials (see section 10).
3	远离儿童和宠物接触。 Keep out of reach of children and pets.

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接触控制和个体防护

Exposure Controls/Personal Protection



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控制参数/Control parameters

职业接触限值/Occupational Exposure limit values

组分 Component(s) CAS No.	国家/地区 Country/region	职业接触限值 (8h) Occupational exposure limits		职业接触限值 (短时间) Occupational exposure limits (Short time)	
		ppm	mg/m ³	ppm	mg/m ³
铅/Lead 7439-92-1	美国/USA-OSHA	-	0.05	-	-
	韩国/Korea	-	0.05	-	-
	爱尔兰/Ireland	-	0.15	-	-
	德国 (AGS) Germany (AGS)	-	0.15	-	-
	丹麦/Denmark	-	0.05	-	0.1
	澳大利亚/Australia	-	0.15	-	-

工程控制/Engineering controls

1	保持充分的通风, 特别在封闭区内。 Ensure adequate ventilation, especially in confined areas.
2	确保在工作场所附近有洗眼和淋浴设施。 Ensure that eyewash stations and safety showers are close to the workstation location.

个人防护装备/Personal protection

总要求: General requirements:	
呼吸系统防护:	如果电池泄漏必须尽可能保持空气流通, 避免狭窄的地方操作, 在正常的使用条件下呼吸的保护设备是不必要的。在过多的空气污染存在的情况下, 可能需要呼吸防护。
Respiratory protection:	If the batteries leaks must try to keep the air circulation, avoid operating in a narrow place. Respiratory protective equipment is not necessary if used as intended. Respiratory protection may be required under exceptional circumstances when excessive air contamination exists.
眼睛防护:	正常条件下无必要, 如果电池破损或是泄漏佩戴化学安全防护眼镜。
Eye protection:	Not necessary if used as intended.



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	Wear goggles/safety glasses giving complete eye protection if the battery damaged or leaking.
皮肤和身体防护:	正常条件下无必要, 如果电池破损或是泄漏, 穿适合的防护服和靴子。
Skin and body protection:	Not necessary if used as intended. Wear appropriate clothing and boots to minimize skin exposure if the battery damaged or leaking.
手部防护:	正常条件下无必要, 如果电池破损或是泄露佩戴适当的防护手套。 每次使用前须检查保护手套是否正常。 选择合适的手套不单取决于材料, 亦取决于材料的质量, 且质量因不同厂家而异。
Hands protection:	Not necessary if used as intended. Wear appropriate protective gloves if the battery damaged or leaking. Check protective gloves prior to each use for their proper condition. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

9 理化特性 Physical and Chemical Properties

基本物理和化学特性的信息/Information on basic physical and chemical properties

外观与性状:	黑色长方形固体
Appearance and character:	Black rectangle solid
气味:	无气味
Odor:	Odorless
气味阈值:	无资料
Odor threshold:	No data
熔点/凝固点 (°C):	无资料
Melting point/freezing point (°C):	No data
初沸点和沸程 (°C):	无资料



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Initial boiling point and boiling range (°C):	No data
闪点 (闭杯, °C):	不适用
Flash point (Close cup, °C):	Not applicable
蒸发速率:	无资料
Evaporation rate:	No data
蒸汽压 (20 °C):	无资料
Steam pressure (20°C):	No data
相对密度 (水=1):	无资料
Relative density (water=1):	No data
n-辛醇/水分配系数:	无资料
Partition coefficient: n-octanol/water:	No data
分解温度 (°C):	无资料
Decomposition temperature (°C):	No data
自燃温度 (°C):	无资料
Auto ignition temperature (°C):	No data
pH 值:	不适用
pH value:	Not applicable
爆炸极限 [% (v/v)]:	非爆炸品
Explosion limit [% (v/v)]:	Non-explosive
相对蒸气密度 (空气=1):	无资料
Relative vapor density (air=1):	No data
溶解性:	不溶于水
Solubility:	Insoluble in water
易燃性 (固体, 气体):	不易燃



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Flammability (solid, gas):	Non-flammable
氧化性:	该产品未划分为氧化性分类
Oxidizing properties:	The substance does not belong to oxidizing substances

10 稳定性和反应性 Stability and Reactivity

稳定性和反应性/Stability and Reactivity

稳定性:	此物质化学性质稳定。
Stability:	The product is chemically stable.
反应性:	在正确的使用和存储条件下是稳定的。
Reactivity:	Stable under recommended storage and handling conditions.
禁配物:	强酸。
Incompatible materials:	Strong acids.
避免接触的条件:	性质相反的材料, 过热, 暴露在潮湿空气或水中, 机械震动和电动滥用。
Conditions to avoid:	In contrast to the nature of the material, overheating, exposed to damp air or water, mechanical vibration and power abuse.
危险分解产物:	在正常的存储和使用条件下, 不会产生危险的分解产物。
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 毒理学信息 Toxicological Information

急性毒性/Acute toxicity

组分/Component(s)	CAS No.	LD ₅₀ (经口/Oral)	LD ₅₀ (经皮/Dermal)	LC ₅₀ (吸入/Inhalation)
硫酸钠/Sodium Sulfate	7757-82-6	小鼠/Mouse: 5989mg/kg	无资料/No data	无资料/No data



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皮肤刺激或腐蚀:	硫酸氢铵: 造成严重皮肤灼伤 (类别1A)。
Skin corrosion/irritation:	Ammonium Bisulfate: Causes severe skin burns (Category 1A).
眼睛刺激或腐蚀:	硫酸氢铵: 造成严重眼损伤 (类别1)。
Eye corrosion/irritation:	Ammonium Bisulfate: Causes serious eye damage (Category 1).
呼吸致敏:	产品无已知引起人类呼吸过敏。
Respiratory sensitization:	These products are not known to cause human respiratory sensitization.
皮肤致敏:	产品无已知引起皮肤过敏。
Skin sensitization:	These products are not known to cause skin sensitization.
生殖细胞突变性:	根据现有数据, 产品不被分类。
Germ cell mutagenicity:	According to the existing data, the product is not classified.
致癌性:	EPA, IARC, NTP, OSHA和ACGIH中无该材料的致癌性分类数据。
Carcinogenicity:	No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
生殖毒性:	铅: 可能对生育能力或胎儿造成伤害 (类别1)。
Reproductive toxicity:	Lead: May damage fertility or the unborn child (Category 1).
特异性靶器官系统毒性-一次接触:	铅: 长期或重复接触可能对器官造成伤害 (类别2)。
Specific target organ toxicity - single exposure:	Lead: Causes damage to organs through prolonged or repeated exposure (Category 2).
特异性靶器官系统毒性-反复接触:	根据现有数据, 产品不被分类。
Specific target organ toxicity - repeated exposure:	According to the existing data, the product is not classified.
吸入危害:	根据现有数据, 产品不被分类。
Aspiration hazard:	According to the existing data, the product is not classified.
生殖毒性附加危害:	铅: 可能对母乳喂养的儿童造成伤害。
Additional reproductive toxicity hazards:	May cause harm to breast-fed children.



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生态学信息

Ecological Information

水生毒性/Aquatic toxicity

急性水生毒性:	对水生生物毒性极大 (类别 1)。
Acute aquatic toxicity:	Very toxic to aquatic life (Category 1).
慢性水生毒性:	长期影响对水生生物有极毒性 (类别 1)。
Chronic aquatic toxicity:	Very toxic to aquatic life with long lasting effects (Category 1).

持久性和降解性/Persistence and degradability

降解性:	无资料。
Degradability:	No data.

生物富集或生物积累性/Bioaccumulative potential

生物积累性:	无资料。
Bioaccumulation:	No data.

土壤中的迁移性/Mobility in soil

迁移性:	无资料。
Mobility:	No data.

其他危害/Other adverse effects

1	无政府许可不允许将该材料释放到环境中。 Do not allow material to be released to the environment without proper governmental permits.
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13

废弃处置

Disposal Consideration

废弃处理/Waste disposal

废弃物:	参考州、地方和国家有关法规进行正确处理。 尽可能避免或减少废弃物的产生。 在回收不可行的情况下建议转移到一个合适的容器和安排专业废物处理公司的
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SIGNATURE: ZHONGKE SERVICES OF TESTING (SHENZHEN) CO., LTD.

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	收集处理。
Residual waste:	Before disposal should refer to the relevant national and local laws and regulation. The generation of waste should be avoided or minimized wherever possible. Recommended transfer to a suitable container and arrange for collection by specialized disposal company if recycling is not feasible.
污染包装物:	尽可能避免或减少废物的产生。 应回收利用。只有在回收不可行时, 才应考虑焚烧或填埋。
Contaminated packaging:	The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
废弃注意事项:	应参阅国家和地方有关规定处理容器和未使用的内容物。
Disposal considerations:	Dispose of container and unused contents in accordance with national and local relevant regulations laws.

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运输信息

Transport Information

运输规则/Transport rules

	根据国际航空运输协会《危险品规则》62 版, 《国际海运危险品规则》(修正版 39-18), 《欧洲陆运危规》。该产品不受 IATA DGR, IMDG 和 ADR/RID 的管制。
	According to IATA DGR 62 nd Edition for transportation, IMO International Maritime Dangerous Goods Code (Amendment 39-18), European Agreement Concerning the International Carriage of Dangerous Goods by Road. The products are not subject to IATA DGR, IMDG and ADR/RID.

标签和标记/Label(s) required

运输标签和标记:	无
Label(s):	None

公路运输/Road transport (UN-ADR)

联合国正确的运输名称:	非限制性货物
UN number:	Not regulated



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联合国正确的运输名称:	非限制性货物
UN proper shipping name:	Not regulated
运输主要危险类别:	非限制性货物
Transport hazard class(es)-Main:	Not regulated
运输次要危险类别:	无
Transport hazard class(es)-Sub risk:	None
包装类别:	非限制性货物
Packaging group:	Not regulated
特殊规定:	无
Special provisions:	None
危害识别编码:	无
Hazard code:	None

■ 空运/Air transport (ICAO-IATA/DGR)

联合国危险货物编号:	非限制性货物
UN number:	Not regulated
联合国正确的运输名称:	非限制性货物
UN proper shipping name:	Not regulated
运输主要危险类别:	非限制性货物
Transport hazard class(es)-Main:	Not regulated
运输次要危险类别:	无
Transport hazard class(es)-Sub risk:	None
包装类别:	非限制性货物
Packaging group:	Not regulated
运输特殊规定:	无



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Special provisions for transportation:	None
ERG 代码:	无
ERG code:	None

■ 海运/Sea transport (IMDG-CODE)

联合国正确的运输名称:	非限制性货物
UN number:	Not regulated
联合国正确的运输名称:	非限制性货物
UN proper shipping name:	Not regulated
运输主要危险类别:	非限制性货物
Transport hazard class(es)-Main:	Not regulated
运输次要危险类别:	无
Transport hazard class(es)-Sub risk:	None
包装类别:	非限制性货物
Packaging group:	Not regulated
运输特殊规定:	无
Special provisions for transportation:	None
海洋污染物 (是/否):	否
Marine pollutants (Yes/No):	No
EmS No.:	无/None

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法规信息 Regulatory Information

■ 法规信息: 参考地方、国家、美国、欧盟、加拿大和国际法规。
Regulatory information: Reference to the local, national, US, EU, CA and



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international regulations.

CAS No.	TSCA	EINECS	DSL	IECSC	NZIoC	PICCS	KECI	AICS
7439-92-1	✓	✓	✓	✓	✓	✓	✓	✓
7803-63-6	✓	✓	✓	✓	✗	✓	✓	✓
7757-82-6	✓	✓	✓	✓	✓	✓	✓	✓
7487-88-9	✓	✓	✓	✓	✓	✓	✓	✓
9003-07-0	✓	✓	✓	✓	✓	✓	✓	✓
9003-56-9	✓	✓	✓	✓	✓	✓	✓	✓
61788-97-4	✗	✗	✗	✗	✗	✗	✗	✗
65997-17-3	✓	✓	✓	✓	✓	✓	✓	✓
9002-88-4	✓	✓	✓	✓	✓	✓	✓	✓
9002-86-2	✓	✓	✓	✓	✓	✓	✓	✓

TSCA:	美国 TSCA 化学物质名录 United States Toxic Substances Control Act Inventory
EINECS:	欧洲现有化学物质名录 European Inventory of Existing Commercial Chemical Substances
DSL:	加拿大国内化学物质名录 Canadian Domestic Substances List
IECSC:	中国现有化学物质名录 China Inventory of Existing Chemical Substances
PICCS:	菲律宾化学品和化学物质名录 Philippines Inventory of Chemicals and Chemical Substances
NZIoC:	新西兰现有暂用的化学物质名录 New Zealand Inventory of Chemicals
KECI:	韩国现有化学物质名录 Existing and Evaluated Chemical Substances



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材料安全数据表 Material Safety Data Sheet

产品名称: 铅蓄电池 (非硫酸电解液)

修订日期: 2021 年 01 月 19 日

项目编号/Item No.: 21A510A110

Product Name: Lead-Oxide Battery (Non-Acid Electrolyte)

Revision Date: Jan. 19, 2021

MSDS No.: NMS.210.119.001.TLK

AICS:	澳大利亚现有化学品物质名录 List of existing chemical substances in Australia
★ 备注: Note:	“√” 表示该物质列入法规 Indicates that the substance included in the regulations “×” 表示暂无资料或未列入法规 That no data or included in the regulations

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其他信息

Other Information

版本信息/Version information

版本:	1.0
Version:	1.0

缩略语或术语/Abbreviations or phrases

ACGIH:	美国政府工业卫生学家会议 American Conference of Governmental Industrial Hygienists
ADR:	欧洲关于危险国际货物公路运输的协议 European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS:	化学文摘社/Chemical Abstracts Service
CLP:	分类、包装、标签/Classification, labeling and packaging
EC:	欧洲委员会/Council of Europe
ECHA:	欧洲化学品管理局European Chemicals Agency
EINECS:	欧洲现有商业化学物质的目录 European Inventory of Existing commercial Chemical Substances
GHS:	全球化学品统一分类和标签制度 Globally Harmonized System of Classification and Labelling of Chemicals
IARC:	国际癌症研究机构/International Agency for Research on Cancer
IATA:	国际航空运输协会/International Air Transport Association
RID:	国际危险货物铁路运输规则/International Civil Aviation Organization

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RAND: 558218



SIGNATURE: ZHONGKE SERVICES OF TESTING (SHENZHEN) CO., LTD.

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材料安全数据表

Material Safety Data Sheet

产品名称: 铅蓄电池 (非硫酸电解液)	修订日期: 2021 年 01 月 19 日	项目编号/Item No.: 21A510A110
Product Name: Lead-Oxide Battery (Non-Acid Electrolyte)	Revision Date: Jan. 19, 2021	MSDS No.: NMS.210.119.001.TLK

ICAO:	国际民航组织/International Maritime Dangerous Goods Code
IMDG:	国际海运危险品规则/International Maritime Dangerous Goods Code
IC ₅₀ :	半数抑制浓度/Inhibitory Concern Triton 50%
LC ₅₀ :	半数致死浓度/Lethal Concentration 50%
LD ₅₀ :	半数致死剂量/Median Lethal Dose 50%
MAPROL:	防止船舶造成污染国际公约 REGULATION concerning the Registration, Evaluation, Authorization and Restriction of Chemicals
REACH:	化学品的注册, 评估和授权 Regulation for rail International transportation of Dangerous goods
STEL:	短时间暴露限值/Short Term Exposure Limit
TWA:	时间加权平均浓度/Time Weighted Average
MAC:	最高容许浓度/Maximum Allowable Concentration
OSHA:	职业安全与健康管理局/Occupational Safety and Health Administration
NIOSH:	国家职业安全卫生研究所 National Institute for Occupational Safety and Health
TLV:	阈限值/Threshold Limit Value
TLV-TWA:	容许最高浓度-时间加权平均值 Threshold Limit Value-Time Weighted Average
TLV- STEL:	容许最高浓度-短时间暴露限值 Threshold Limit Value-Short term Exposure Limit
PC-TWA:	时间加权平均容许浓度/Permissible Concentration-Time Weighted Average
PC-STEL:	短间接接触容许浓度/Permissible Concentration-Short Term Exposure Limit
PEL:	容许暴露限值/Permissible Exposure Limit
OELs:	职业接触限值/Occupational Exposure Limits

参考文献/Reference

1	国际癌症研究机构/IARC
2	OECD 全球化学品信息平台/OECD: The Global Portal to Information on Chemical Substances



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材料安全数据表 Material Safety Data Sheet

产品名称: 铅氧蓄电池 (非硫酸电解液) Product Name: Lead-Oxide Battery (Non-Acid Electrolyte)	修订日期: 2021 年 01 月 19 日 Revision Date: Jan. 19, 2021	项目编号/Item No.: 21A510A110 MSDS No.: NMS.210.119.001.TLK
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3	美国交通部: 应急响应指南/U.S. Department of Transportation: ERG
4	德国 GESTIS-有害物质数据库/Germany GESTIS-database on hazard substance
5	美国 CAMEO 化学物质数据库/CAMEO Chemicals
6	美国医学图书馆: 化学品标识数据库/NLM: ChemIDplus
7	美国环境保护署: 综合危险性信息系统/EPA: Integrated Risk Information System
8	国际化学品安全规划署: 国际化学品安全卡 (ICSC) IPCS: The International Chemical Safety Cards (ICSC)

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