



SAFETY DATA SHEET

Issuing Date 13-Oct-2016

Revision Date 06-Feb-2017

Revision Number 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Brita® Long Last Replacement Filters

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Filter

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address 1221 Broadway
Oakland
CA
94612
US

Telephone 1-510-271-7000

Emergency telephone number

Company Emergency Phone For Medical Emergencies call: (800) 446-1014

Number Transportation Emergencies, call Chemtrec: (800) 424-9300

Emergency Telephone Number 1-800-446-1014

2. HAZARDS IDENTIFICATION

Classification

This product is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

GHS Label elements, including precautionary statements

Emergency Overview

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Appearance Blue

Physical state Solid

Odor None

Precautionary Statements - Prevention

None

Precautionary Statements - Response

None

Precautionary Statements - Storage

None

Precautionary Statements - Disposal

None

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

100 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

No information available

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which at their given concentration, are considered to be hazardous to health.

4. FIRST AID MEASURES

First aid measures

General Advice

Show this safety data sheet to the doctor in attendance.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Skin contact

Wash off immediately with plenty of water.

Inhalation

Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen.

Ingestion

Drink plenty of water. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects

May cause redness and tearing of the eyes.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

None under normal use conditions.

Other Information

Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions

See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.
Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed.
Incompatible products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Measures Showers
 Eyewash stations
 Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection No special protective equipment required.
Skin and body protection No special protective equipment required.
Respiratory protection No special protective equipment required.
Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid	Odor	None
Appearance	Blue	Odor Threshold	No information available
Color	Blue		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Insoluble	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	

Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions. None under normal processing.

Conditions to avoid

None known based on information supplied. Strong oxidizing agents. Ozone. Chlorine.

Incompatible materials

Hazardous Decomposition Products

None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Not applicable.
Eye contact	May cause slight irritation.
Skin contact	No known hazard in contact with skin.
Ingestion	No known hazard by swallowing.

Component Information

Information on toxicological effects

Symptoms

May cause redness and tearing of the eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization

No information available.

Mutagenic Effects

No information available.

Carcinogenicity

Contains no ingredient listed as a carcinogen.

Reproductive toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Chronic Toxicity

No known effect based on information supplied.

Target Organ Effects

None known.

Aspiration Hazard

Not applicable.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

None known.

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

Dispose of in accordance with federal, state and local regulations.

Contaminated Packaging

Do not reuse empty containers. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

<u>DOT</u>	NOT REGULATED
<u>TDG</u>	NOT REGULATED
<u>ICAO</u>	NOT REGULATED
<u>IATA</u>	NOT REGULATED
<u>IMDG/IMO</u>	NOT REGULATED

15. REGULATORY INFORMATION

International Inventories

TSCA	All components are listed on the TSCA Inventory
DSL	All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive

Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

. This product does not contain any substances regulated by state right-to-know regulations.

International Regulations

Canada

WHMIS Hazard Class

Non-controlled

Non-controlled

16. OTHER INFORMATION

NFPA	Health Hazards 0	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	Personal Protection -

Prepared By Product Stewardship
 23 British American Blvd.
 Latham, NY 12110
 1-800-572-6501

Issuing Date 13-Oct-2016
Revision Date 06-Feb-2017
Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

物质安全数据表 (MSDS -Material Safety Data Sheet)

【第一项 (Section 1) : 化学品及企业标识 (Chemical Product and Company Identification)】

产品名称 (Product Name) : 锂二氧化锰电池 (Lithium Manganese Dioxide Battery)

产品型号 (Product code) : CR1225

制造商 (Manufacture) : 香港曼柏有限公司

EEMB Co., Ltd

地址 (address) : 香港中环德辅道中148号安泰大厦9楼

9th Floor, Amtel Building, 148 Des Voeux Road Central, Central, Hong Kong □□□□

电话 (Tel) : 852-58082720 传真 (Fax) : 852-58085462

更多信息获取:

Further information obtainable:

紧急情况下的信息: Information in case of emergency:

联系人 (Contact) : Mr. Tony Xu

紧急电话 (Emergency tel) : (+86) -755-83022275

电子邮件 (E-mail) global@eemb.com

【第二项 (Section 2) : 成分/组成信息 (Composition/information on Ingredients)】

化学物质描述

Chemical characterization

描述:

Description:

添加的混合物与无害物质在下列表中。

Mixture of the substances listed below with nonhazardous additions.

危险成份:

Dangerous components:

项目 Item 型号 Type	二氧化锰 Manganese dioxide (MnO ₂) wt%	石墨 Graphite (C) wt%	聚四氟乙 烯 Poly(teraf luoroethy lene)(PT FE) wt%	塑 胶 plastic (pp) wt%	不 锈 钢 stainless steel wt%	金 属 锂 lithium wt%	聚碳酸丙 烯 酯 Poly(prop ylene carbonate (PC) wt%	乙 二 醇 二 甲 醚 ethylene glycol dimethyl ether (DME) wt%	高氯酸锂 lithium perchlora te (LiClO ₄) wt%
CR927	26.6	2.2	0.2	7.0	51.9	2.2	3.9	4.1	1.9
CR1025	27.4	2.7	0.2	7.2	50.6	2.1	4.0	3.8	2.0
CR1130	27.3	2.9	0.2	7.2	50.2	2.1	4.1	3.9	2.1
CR1216	25.7	2.4	0.2	7.3	52.3	1.6	4.3	4.1	2.1
CR1220	26.3	2.6	0.2	7.7	50.8	1.5	4.5	4.2	2.2
CR1225	27.9	2.7	0.2	5.0	52.0	1.5	4.4	4.2	2.1
CR1616	21	1.6	0.2	3.6	61.6	1.3	4.4	4.2	2.1

CR1620	25.1	2.3	0.2	4.6	56.3	1.3	4.2	4.0	2.0
CR1632	31.7	3.1	0.3	5.5	46.5	1.8	4.7	4.2	2.2
CR2016	25.4	3.1	0.2	4.1	55.2	1.1	4.6	4.1	3.2
CR2025	26.2	2.5	0.2	3.4	55.4	1.7	4.5	4.0	2.1
CR2032	31.7	2.6	0.3	3.9	48.8	2.0	4.5	4.1	2.1
CR2320	27.3	2.7	0.2	5.4	52.5	1.3	4.6	3.7	2.3
CR2325	28.2	2.8	0.2	5.2	51.1	1.5	5.0	3.8	2.2
CR2330	30.9	3.0	0.2	4.9	47.9	1.6	5.7	4.0	1.8
CR2335	32.1	3.5	0.3	4.6	45.1	1.9	5.3	3.8	1.7
CR2354	46.5	4.7	0.4	3.0	34.0	2.1	4.6	3.2	1.5
CR2430	32.8	3.2	0.2	3.6	49.5	1.6	4.5	3.2	1.4
CR2450	46.9	4.6	0.2	3.2	32.9	2.2	4.9	2.9	2.0
CR2477	52.3	5.3	0.4	2.0	25.8	3.0	5.6	3.4	2.2
CR2477T	52.6	5.4	0.5	1.5	25.1	3.5	6.2	3.8	2.6

【第三项 (Section 3) : 危险性概述(Hazards Summarizing)】

对于正常使用没有特别的健康危害。

No specific health hazardous for normal use.

侵入路径

Routes of Entry

眼睛, 皮肤, 吸入, 摄食。

Eyes, Skin, Inhalation, Ingestion.

这些化学物质被盛装在一个密封金属容器中。暴露的风险只能是因为电池被机械打开或者滥用。大多数最可能的风险是急性暴露当电池排空。泄漏的材料暴露于皮肤和眼睛可能导致刺激性。吸入烟气可能导致呼吸刺激。

These chemical are contained in a sealed can.Risk of exposure occurs only if the battery is mechanically or electrically abused.The most likely risk is acute exposure when a battery vents.Leaking material exposure to skin, eyes may cause irritation.Inhalation of fumes may cause respiratory irritation.

暴露的迹象/症状

Sign/Symptoms of Exposure

可能因有害物质泄漏与皮肤接触产生导热和化学烧伤。

May be a reproductive hazard.leaking can cause thermal and chemical burns upon contact with the skin.

【第四项 (Section 4) : 急救措施(First-aid Measures)】

眼睛: 使用大量的水冲洗 15 分钟, 不定时的抬起上下眼睑。就医。

Eyes: Flush eyes with plenty of water for water at least 15 minutes, occasionally lifting the upper and lower eyelids.Get medical aid.

皮肤: 移开受污染的衣服, 立即使用大量的水清洗皮肤或淋浴 15 分钟。就医。

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入: 立即从泄漏区离开到新鲜空气处, 在必要时可以使用氧气。

Inhalation: Remove from exposure and move to fresh air immediately.Use oxygen if available.

摄食

Ingestion

不要诱导呕吐。立即就医。

Do not induce vomiting. Call a physician immediately.

【第五项 (Section 5) : 消防措施(Fire-fighting Measures)】

闪点: 不可用

Flash point: N/A

燃点温度: 不可用

Auto-Ignition Temperature: N/A

灭火介质

Extinguishing Media

水, 二氧化碳, 干粉

Water, CO₂, extinguishing power

消防

Firefighting

如果在临近的区域发生火灾时, 使用水, 二氧化碳, 干粉灭火, 电池在它们原来的容器中当由于火是纸产品燃烧引起时。对于大量未包装的电池时使用合适的灭火工具, 不要使用水。

In case of fire in an adjacent area, use water, CO₂ or extinguishing power if batteries are in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged batteries use suitable extinguishers. In this case, do not use water.

【第六项 (Section 6) : 泄露应急处理(Accidental Release Measures)】

如果材料被释放或溢出采取的措施

Steps to be Taken in case Material is Released or Spilled

如果电池意外的被损害和泄漏, 用布擦拭并用塑料袋处理后放入钢制的容器中。

If the battery is accidentally broken and leaks out, wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can.

首先离开区域并允许电池冷却和蒸汽消散。提供最大的空气流通。避免皮肤和眼睛的接触或者吸入蒸汽。使用吸收剂移开溢流出来的物质。

The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled material with absorbent.

废物处置方法

Waste Disposal Method

建议将电池使用完后, 交与电池回收站。

It is recommended to discharge the battery to the end, and to battery recycle bin.

【第七项 (Section 7) : 操作处置与储存(Handling And Storage)】

电池不应该被打开, 损害或者焚化, 在它们可能泄漏或者破裂并释放到环境中之前, 它们被装在一个密封容器中。

The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release

to the environment the ingredients that they contain in the hermetically sealed container.

不要是电池短路或者充电，迫使过量放电，投入火中。不要撞击或者刺穿电池，或者浸入液体中。

Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

操作处置和储存预防措施

Precaution to be taken in handling and storing

避免机械或充放电的滥用。存储在温度低，干燥，通风且温度变化较小区域。避免存储在较高温度。

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperature should be avoided.

存储地方周围避免有加热设备，避免长时间在阳光下暴晒。

Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

其他预防措施

Other Precautions

避免短路或安装错误的正负极。

Do not short or install with incorrect polarity.

【第八项 (Section 8) : 接触控制/个体防护(Exposure Controls/Personal Protection)】

呼吸防护

Respiratory Protective

如果电池泄漏，必须提供足够的通风设备避免因空间狭小时电池泄漏。呼吸保护不需要在正常条件下使用。

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under condition of normal use.

其他防护衣或者防护设备

Other Protective Clothing or Equipment

正常条件下不必要的使用

Not necessary under conditions of normal use.

因电池泄漏建议的个人保护：呼吸防护，防护手套，防护衣，带保护的安全玻璃盾。

Personal Protective is recommended for venting batteries: Respiratory Protection, protective gloves, protective clothing and safety glass with side shields.

【第九项 (Section 9) : 理化特性(Physical and Chemical Properties)】

一般信息 General Information	
形态 Form:	固体 Solid
颜色 Color:	银白色 Silvery white
气味 Odor:	单一的 Monotony
变化条件 Change in condition	
熔点/熔化范围 Melting point/Melting range:	不可用 Not available
沸点/沸点范围 Boiling point/Boiling range:	不可用 Not available
闪点 Flash point:	无效 Not applicant

可燃性 Flammability (solid 固体, gaseous 气体):	不可用 Not available
燃点温度 Ignition temperature:	不可用 Not available
自然 Auto Ignition:	产品不会自然 Product is not selfigniting
爆炸危险: 产品目前没有发生过爆炸事故 Danger of explosion: product does not present an explosion hazard.	
爆炸极限 Explosion limits:	
下限 Lower:	不可用 Not available
上限 Upper:	不可用 Not available
氧化特征 Oxidizing properties:	不可用 Not available
蒸汽压 Vapor pressure:	不可用 Not available
密度 Density:	不可用 Not available
相对密度 Relative of density:	不可用 Not available
蒸发速率 Evaporation rate:	不可用 Not available
与水的溶解性/混和性 Solubility in / Miscibility with Water:	不可用 Not available
pH 值 pH-value:	不可用 Not available
粘度 viscosity:	不可用 Not available
标准电压 Nominal Voltage:	3.0 伏特 3.0V

【第十项 (Section 10) : 稳定性和反应性 (Stability and Reactivity)】

稳定性

Stability

稳定性正常

Stable for normal

避免条件

Conditions to Avoid

加热, 着火, 机械滥用和充放电滥用。

Heating, fire, mechanical abuse and electrical abuse.

有害物质分解产物

Hazardous decomposition products

当暴露于火中或者高温中, 电池可能会泄漏有毒烟雾。

When exposed to fire or extreme heat, batteries may emit toxic fumes.

【第十一项 (Section 11) : 毒理学资料 (Toxicological Information)】

吸入, 皮肤和眼睛的接触当电池被打开时。

Inhalation, skin contact and eye contact are possible when the battery is opened.

当暴露内部物质, 腐蚀性烟气会刺激皮肤, 眼睛和粘膜细胞。过度暴露可能导致非纤维肺损伤和膜刺激的症状。

Exposure to internal contents, the corrosive fumes will be irritation to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

【第十二项 (Section 12) : 生态学资料 (Ecological Information)】

当立即使用或者处理电池时目前没有生态危害。当处理时，避免水，雨和雪。

When promptly used or disposed the battery does not present ecological hazard. When disposed, keep away from water, rain and snow.

【第十三项 (Section 13) : 废弃处置(Disposal)】

适当处置或准备物质的方法

Appropriate Method of Disposal of Substance or Preparation

电池处置按照被认可的地方、州和联邦政府的要求。参照国家环境机构

Dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency.

【第十四项 (Section 14) : 运输信息(Transport Information)】

交通运输部法规 DOT regulations:

危害等级 Hazard class : 9

识别号 Identification number : UN3090

包装组 Packing group: II

适合的运输名称 Proper shipping name (专有名词 technical name): 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

标签 Label : 9

陆地运输 Land transport ADR/RID (跨国 cross-border)

ADR/RID class: 混合的有害物质和物品 9 Miscellaneous dangerous substances and articles

危险代码 Danger code (Kemler): 9

联合国危险货物编号 UN-Number: 3090

包装等级 Packaging group: II

货物名称 Description of goods: 3090 锂二氧化锰电池 3090 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

国际海上危险货物运输规则 Maritime transport IMDG:

国际海上危险货物运输规则等级 IMDG Class: 9

联合国危险货物编号 UN Number: 3090

标签 Label: 9

包装等级 Packaging group: II

海洋污染物 Marine pollutant: Yes

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

Air transport ICAO-TI and IATA-DGR:

UN/ID 号 UN/ID Number: 3090

标签 Label: 9

包装等级 Packaging group: II

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

包装要求 Packing instructions: P1968-P1970

一些关于锂电池的国际运输法规: 国际海上危险货物运输规则 (IMDG) 由国际海事组织(IMO) 编制, 危险物品手册 (DGR) 是由国际航空运输协会 (IATA) 编制和技术指导安全危险货物通

过空中运输是由国际民航组织（ICAO）编制。这些规则是根据联合国建议的联合国手册 UN38.3 要求（UN 测试和标准的手册 38.3 部分）可以作为空运或者海运作的一般物品运输，否则应按照分类 9，危险货物包装组运输。

There are some regulations about the international transport of lithium batteries: the international Maritime Dangerous Goods (IMDG) Code by international Maritime Organization (IMO), Dangerous Goods Regulations(DGR,53rd)by international Air Transport Association(IATA)and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by international Civil Aviation organization (ICAO).These regulation are based on the UN Recommendations on the requirements of UN38.3 (UN Manual of Test and Criteria, Part subsection38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group hazardous goods.

【第十五项 (Section 15) : 法规信息(Regulatory Information)】

Sara

第 355 章节 Section 355 (极危险物质 extremely hazardous substances)

没有组成成分被列出。

None of the ingredient is listed.

第 313 章节 Section 313 (特定有害物质清单 specific toxic chemical listings):

没有组成成分被列出。

None of the ingredient is listed.

加州 65 提案 Proposition 65

导致致癌物质的已知化学品:

Chemical known to cause cancer

没有组成成分被列出。

None of the ingredient is listed.

导致女性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for females

没有组成成分被列出。

None of the ingredient is listed.

导致男性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for males

没有组成成分被列出。

None of the ingredient is listed.

导致发育毒性的已知化学品。

Chemicals known to cause developmental toxicity:

没有组成成分被列出。

None of the ingredient is listed.

癌症类别

Cancerogenity categories

美国环保局 EPA (环境保护局 Environmental Protection Agency).

没有组成成分被列出。

None of the ingredient is listed.

IARC(国际癌症研究机构 International Agency for Research on Cancer)

没有组成成分被列出。

None of the ingredient is listed.

NTP(美国国家毒理学规划处 National Toxicology Program)

没有组成成分被列出。

None of the ingredient is listed.

TLV(阈值 Threshold limit values establishd by ACGIH)

没有组成成分被列出。

None of the ingredient is listed.

NIOSH-Ca (国家职业安全及健康学会 National Institute for Occupational Safety and Health)

没有组成成分被列出。

None of the ingredient is listed.

OSHA- Ca(职业安全 Occupational Safety &健康协会 Health Administration)

没有组成成分被列出。

None of the ingredient is listed.

产品相关的有害信息：

Product related hazard informations:

产品的分类和标识应与有害物质指令一致。

The product has been classified and marked in accordance with directives on hazardous material.

危害物的标志：

Hazard symbols:

有害的

Harmful

标签成份有害物质的确定：

Hazard-determining components of labelling:

锂 氧化钴(III)

Lithium Cobalt(III)oxide

风险警告：

Risk phrases:

刺激皮肤。

Irritating to skin.

严重损害眼睛的风险。

Risk of serious damage eyes.

可能通过吸入和皮肤接触导致过敏作用。

May cause sensitisation by inhalation and skin contact.

安全警告：

Safety phrases:

保持锁住且不能让小孩够到。

Keep locked up and out of the reach of children.

不要呼吸尘土。

Do not breathe dust.

避免和皮肤和眼睛接触。

Avoid contact with skin and eyes.

如果和眼睛接触，立即用大量的水冲洗，并就医。

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

佩戴合适的手套和眼睛/面部的保护。

Wear suitable gloves and eye/face protection.

如果发生事故时或者如果你感觉不适时，立即就医（在可能的情况下,做好标识）。

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

处置该物质及其容器的危险或特殊废料收集点。

Dispose of this material and its container to hazardous or special waste collection point.

如果因吸入发生事故时：移动伤员到空气新鲜处并保持休息。

In case of accident by inhalation: remove casualty to fresh air and keep at rest.

【第十六项 Section 16: 其他信息(Other Information)】

本物质安全数据内容与格式是根据 29 CFR 1910.1200(g)制作。

The contents and format of this MSDS is in according with 29 CFR 1910.1200(g)

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结束

The information in this MSDS was obtained from source which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. The MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

END OF MSDS

物质安全数据表制作日期：2015年01月05日

MSDS Creation Date: January 05, 2015

物质安全数据表 (MSDS -Material Safety Data Sheet)

【第一项 (Section 1) : 化学品及企业标识 (Chemical Product and Company Identification)】

产品名称 (Product Name) : 锂二氧化锰电池 (Lithium Manganese Dioxide Battery)

产品型号 (Product code) : CR1225

制造商 (Manufacture) : 香港曼柏有限公司

EEMB Co., Ltd

地址 (address) : 香港中环德辅道中148号安泰大厦9楼

9th Floor, Amtel Building, 148 Des Voeux Road Central, Central, Hong Kong □□□□

电话 (Tel) : 852-58082720 传真 (Fax) : 852-58085462

更多信息获取:

Further information obtainable:

紧急情况下的信息: Information in case of emergency:

联系人 (Contact) : Mr. Tony Xu

紧急电话 (Emergency tel) : (+86) -755-83022275

电子邮件 (E-mail) global@eemb.com

【第二项 (Section 2) : 成分/组成信息 (Composition/information on Ingredients)】

化学物质描述

Chemical characterization

描述:

Description:

添加的混合物与无害物质在下列表中。

Mixture of the substances listed below with nonhazardous additions.

危险成份:

Dangerous components:

项目 Item 型号 Type	二氧化锰 Manganese dioxide (MnO ₂) wt%	石墨 Graphite (C) wt%	聚四氟乙 烯 Poly(teraf luoroethy lene)(PT FE) wt%	塑 胶 plastic (pp) wt%	不 锈 钢 stainless steel wt%	金 属 锂 lithium wt%	聚碳酸丙 烯 酯 Poly(prop ylene carbonate (PC) wt%	乙 二 醇 二 甲 醚 ethylene glycol dimethyl ether (DME) wt%	高氯酸锂 lithium perchlora te (LiClO ₄) wt%
CR927	26.6	2.2	0.2	7.0	51.9	2.2	3.9	4.1	1.9
CR1025	27.4	2.7	0.2	7.2	50.6	2.1	4.0	3.8	2.0
CR1130	27.3	2.9	0.2	7.2	50.2	2.1	4.1	3.9	2.1
CR1216	25.7	2.4	0.2	7.3	52.3	1.6	4.3	4.1	2.1
CR1220	26.3	2.6	0.2	7.7	50.8	1.5	4.5	4.2	2.2
CR1225	27.9	2.7	0.2	5.0	52.0	1.5	4.4	4.2	2.1
CR1616	21	1.6	0.2	3.6	61.6	1.3	4.4	4.2	2.1

CR1620	25.1	2.3	0.2	4.6	56.3	1.3	4.2	4.0	2.0
CR1632	31.7	3.1	0.3	5.5	46.5	1.8	4.7	4.2	2.2
CR2016	25.4	3.1	0.2	4.1	55.2	1.1	4.6	4.1	3.2
CR2025	26.2	2.5	0.2	3.4	55.4	1.7	4.5	4.0	2.1
CR2032	31.7	2.6	0.3	3.9	48.8	2.0	4.5	4.1	2.1
CR2320	27.3	2.7	0.2	5.4	52.5	1.3	4.6	3.7	2.3
CR2325	28.2	2.8	0.2	5.2	51.1	1.5	5.0	3.8	2.2
CR2330	30.9	3.0	0.2	4.9	47.9	1.6	5.7	4.0	1.8
CR2335	32.1	3.5	0.3	4.6	45.1	1.9	5.3	3.8	1.7
CR2354	46.5	4.7	0.4	3.0	34.0	2.1	4.6	3.2	1.5
CR2430	32.8	3.2	0.2	3.6	49.5	1.6	4.5	3.2	1.4
CR2450	46.9	4.6	0.2	3.2	32.9	2.2	4.9	2.9	2.0
CR2477	52.3	5.3	0.4	2.0	25.8	3.0	5.6	3.4	2.2
CR2477T	52.6	5.4	0.5	1.5	25.1	3.5	6.2	3.8	2.6

【第三项 (Section 3) : 危险性概述(Hazards Summarizing)】

对于正常使用没有特别的健康危害。

No specific health hazardous for normal use.

侵入路径

Routes of Entry

眼睛, 皮肤, 吸入, 摄食。

Eyes, Skin, Inhalation, Ingestion.

这些化学物质被盛装在一个密封金属容器中。暴露的风险只能是因为电池被机械打开或者滥用。大多数最可能的风险是急性暴露当电池排空。泄漏的材料暴露于皮肤和眼睛可能导致刺激性。吸入烟气可能导致呼吸刺激。

These chemical are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents. Leaking material exposure to skin, eyes may cause irritation. Inhalation of fumes may cause respiratory irritation.

暴露的迹象/症状

Sign/Symptoms of Exposure

可能因有害物质泄漏与皮肤接触产生导热和化学烧伤。

May be a reproductive hazard. Leaking can cause thermal and chemical burns upon contact with the skin.

【第四项 (Section 4) : 急救措施(First-aid Measures)】

眼睛: 使用大量的水冲洗 15 分钟, 不定时的抬起上下眼睑。就医。

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

皮肤: 移开受污染的衣服, 立即使用大量的水清洗皮肤或淋浴 15 分钟。就医。

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入: 立即从泄漏区离开到新鲜空气处, 在必要时可以使用氧气。

Inhalation: Remove from exposure and move to fresh air immediately. Use oxygen if available.

摄食

Ingestion

不要诱导呕吐。立即就医。

Do not induce vomiting. Call a physician immediately.

【第五项 (Section 5) : 消防措施(Fire-fighting Measures)】

闪点: 不可用

Flash point: N/A

燃点温度: 不可用

Auto-Ignition Temperature: N/A

灭火介质

Extinguishing Media

水, 二氧化碳, 干粉

Water, CO₂, extinguishing power

消防

Firefighting

如果在临近的区域发生火灾时, 使用水, 二氧化碳, 干粉灭火, 电池在它们原来的容器中当由于火是纸产品燃烧引起时。对于大量未包装的电池时使用合适的灭火工具, 不要使用水。

In case of fire in an adjacent area, use water, CO₂ or extinguishing power if batteries are in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged batteries use suitable extinguishers. In this case, do not use water.

【第六项 (Section 6) : 泄露应急处理(Accidental Release Measures)】

如果材料被释放或溢出采取的措施

Steps to be Taken in case Material is Released or Spilled

如果电池意外的被损害和泄漏, 用布擦拭并用塑料袋处理后放入钢制的容器中。

If the battery is accidentally broken and leaks out, wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can.

首先离开区域并允许电池冷却和蒸汽消散。提供最大的空气流通。避免皮肤和眼睛的接触或者吸入蒸汽。使用吸收剂移开溢流出来的物质。

The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled material with absorbent.

废物处置方法

Waste Disposal Method

建议将电池使用完后, 交与电池回收站。

It is recommended to discharge the battery to the end, and to battery recycle bin.

【第七项 (Section 7) : 操作处置与储存(Handling And Storage)】

电池不应该被打开, 损害或者焚化, 在它们可能泄漏或者破裂并释放到环境中之前, 它们被装在一个密封容器中。

The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release

to the environment the ingredients that they contain in the hermetically sealed container.

不要是电池短路或者充电，迫使过量放电，投入火中。不要撞击或者刺穿电池，或者浸入液体中。

Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

操作处置和储存预防措施

Precaution to be taken in handling and storing

避免机械或充放电的滥用。存储在温度低，干燥，通风且温度变化较小区域。避免存储在较高温度。

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperature should be avoided.

存储地方周围避免有加热设备，避免长时间在阳光下暴晒。

Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

其他预防措施

Other Precautions

避免短路或安装错误的正负极。

Do not short or install with incorrect polarity.

【第八项 (Section 8) : 接触控制/个体防护(Exposure Controls/Personal Protection)】

呼吸防护

Respiratory Protective

如果电池泄漏，必须提供足够的通风设备避免因空间狭小时电池泄漏。呼吸保护不需要在正常条件下使用。

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under condition of normal use.

其他防护衣或者防护设备

Other Protective Clothing or Equipment

正常条件下不必要的使用

Not necessary under conditions of normal use.

因电池泄漏建议的个人保护：呼吸防护，防护手套，防护衣，带保护的安全玻璃盾。

Personal Protective is recommended for venting batteries: Respiratory Protection, protective gloves, protective clothing and safety glass with side shields.

【第九项 (Section 9) : 理化特性(Physical and Chemical Properties)】

一般信息 General Information	
形态 Form:	固体 Solid
颜色 Color:	银白色 Silvery white
气味 Odor:	单一的 Monotony
变化条件 Change in condition	
熔点/熔化范围 Melting point/Melting range:	不可用 Not available
沸点/沸点范围 Boiling point/Boiling range:	不可用 Not available
闪点 Flash point:	无效 Not applicant

可燃性 Flammability (solid 固体, gaseous 气体):	不可用 Not available
燃点温度 Ignition temperature:	不可用 Not available
自然 Auto Ignition:	产品不会自然 Product is not selfigniting
爆炸危险: 产品目前没有发生过爆炸事故 Danger of explosion: product does not present an explosion hazard.	
爆炸极限 Explosion limits:	
下限 Lower:	不可用 Not available
上限 Upper:	不可用 Not available
氧化特征 Oxidizing properties:	不可用 Not available
蒸汽压 Vapor pressure:	不可用 Not available
密度 Density:	不可用 Not available
相对密度 Relative of density:	不可用 Not available
蒸发速率 Evaporation rate:	不可用 Not available
与水的溶解性/混和性 Solubility in / Miscibility with Water:	不可用 Not available
pH 值 pH-value:	不可用 Not available
粘度 viscosity:	不可用 Not available
标准电压 Nominal Voltage:	3.0 伏特 3.0V

【第十项 (Section 10) : 稳定性和反应性 (Stability and Reactivity)】

稳定性

Stability

稳定性正常

Stable for normal

避免条件

Conditions to Avoid

加热, 着火, 机械滥用和充放电滥用。

Heating, fire, mechanical abuse and electrical abuse.

有害物质分解产物

Hazardous decomposition products

当暴露于火中或者高温中, 电池可能会泄漏有毒烟雾。

When exposed to fire or extreme heat, batteries may emit toxic fumes.

【第十一项 (Section 11) : 毒理学资料 (Toxicological Information)】

吸入, 皮肤和和眼睛的接触当电池被打开时。

Inhalation, skin contact and eye contact are possible when the battery is opened.

当暴露内部物质, 腐蚀性烟气会刺激皮肤, 眼睛和粘膜细胞。过度暴露可能导致非纤维肺损伤和膜刺激的症状。

Exposure to internal contents, the corrosive fumes will be irritation to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

【第十二项 (Section 12) : 生态学资料 (Ecological Information)】

当立即使用或者处理电池时目前没有生态危害。当处理时，避免水，雨和雪。

When promptly used or disposed the battery does not present ecological hazard. When disposed, keep away from water, rain and snow.

【第十三项 (Section 13) : 废弃处置(Disposal)】

适当处置或准备物质的方法

Appropriate Method of Disposal of Substance or Preparation

电池处置按照被认可的地方、州和联邦政府的要求。参照国家环境机构

Dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency.

【第十四项 (Section 14) : 运输信息(Transport Information)】

交通运输部法规 DOT regulations:

危害等级 Hazard class : 9

识别号 Identification number : UN3090

包装组 Packing group: II

适合的运输名称 Proper shipping name (专有名词 technical name): 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

标签 Label : 9

陆地运输 Land transport ADR/RID (跨国 cross-border)

ADR/RID class: 混合的有害物质和物品 9 Miscellaneous dangerous substances and articles

危险代码 Danger code (Kemler): 9

联合国危险货物编号 UN-Number: 3090

包装等级 Packaging group: II

货物名称 Description of goods: 3090 锂二氧化锰电池 3090 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

国际海上危险货物运输规则 Maritime transport IMDG:

国际海上危险货物运输规则等级 IMDG Class: 9

联合国危险货物编号 UN Number: 3090

标签 Label: 9

包装等级 Packaging group: II

海洋污染物 Marine pollutant: Yes

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

Air transport ICAO-TI and IATA-DGR:

UN/ID 号 UN/ID Number: 3090

标签 Label: 9

包装等级 Packaging group: II

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

包装要求 Packing instructions: P1968-P1970

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There are some regulations about the international transport of lithium batteries: the international Maritime Dangerous Goods (IMDG) Code by international Maritime Organization (IMO), Dangerous Goods Regulations (DGR, 53rd) by international Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by international Civil Aviation organization (ICAO). These regulations are based on the UN Recommendations on the requirements of UN38.3 (UN Manual of Test and Criteria, Part subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group hazardous goods.

【第十五项 (Section 15) : 法规信息 (Regulatory Information)】

Sara

第 355 章节 Section 355 (极危险物质 extremely hazardous substances)

没有组成成分被列出。

None of the ingredient is listed.

第 313 章节 Section 313 (特定有害物质清单 specific toxic chemical listings):

没有组成成分被列出。

None of the ingredient is listed.

加州 65 提案 Proposition 65

导致致癌物质的已知化学品:

Chemical known to cause cancer

没有组成成分被列出。

None of the ingredient is listed.

导致女性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for females

没有组成成分被列出。

None of the ingredient is listed.

导致男性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for males

没有组成成分被列出。

None of the ingredient is listed.

导致发育毒性的已知化学品。

Chemicals known to cause developmental toxicity:

没有组成成分被列出。

None of the ingredient is listed.

癌症类别

Carcinogen categories

美国环保局 EPA (环境保护局 Environmental Protection Agency).

没有组成成分被列出。

None of the ingredient is listed.

IARC (国际癌症研究机构 International Agency for Research on Cancer)

没有组成成分被列出。

None of the ingredient is listed.

NTP(美国国家毒理学规划处 National Toxicology Program)

没有组成成分被列出。

None of the ingredient is listed.

TLV(阈值 Threshold limit values establishd by ACGIH)

没有组成成分被列出。

None of the ingredient is listed.

NIOSH-Ca (国家职业安全及健康学会 National Institute for Occupational Safety and Health)

没有组成成分被列出。

None of the ingredient is listed.

OSHA- Ca(职业安全 Occupational Safety &健康协会 Health Administration)

没有组成成分被列出。

None of the ingredient is listed.

产品相关的有害信息：

Product related hazard informations:

产品的分类和标识应与有害物质指令一致。

The product has been classified and marked in accordance with directives on hazardous material.

危害物的标志：

Hazard symbols:

有害的

Harmful

标签成份有害物质的确定：

Hazard-determining components of labelling:

锂 氧化钴(III)

Lithium Cobalt(III)oxide

风险警告：

Risk phrases:

刺激皮肤。

Irritating to skin.

严重损害眼睛的风险。

Risk of serious damage eyes.

可能通过吸入和皮肤接触导致过敏作用。

May cause sensitisation by inhalation and skin contact.

安全警告：

Safety phrases:

保持锁住且不能让小孩够到。

Keep locked up and out of the reach of children.

不要呼吸尘土。

Do not breathe dust.

避免和皮肤和眼睛接触。

Avoid contact with skin and eyes.

如果和眼睛接触，立即用大量的水冲洗，并就医。

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

佩戴合适的手套和眼睛/面部的保护。

Wear suitable gloves and eye/face protection.

如果发生事故时或者如果你感觉不适时，立即就医（在可能的情况下,做好标识）。

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

处置该物质及其容器的危险或特殊废料收集点。

Dispose of this material and its container to hazardous or special waste collection point.

如果因吸入发生事故时：移动伤员到空气新鲜处并保持休息。

In case of accident by inhalation: remove casualty to fresh air and keep at rest.

【第十六项 Section 16: 其他信息(Other Information)】

本物质安全数据内容与格式是根据 29 CFR 1910.1200(g)制作。

The contents and format of this MSDS is in according with 29 CFR 1910.1200(g)

免责声明 DISCLAIMER OF LIABILITY

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结束

The information in this MSDS was obtained from source which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. The MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

END OF MSDS

物质安全数据表制作日期：2015年01月05日

MSDS Creation Date: January 05, 2015

物质安全数据表 (MSDS -Material Safety Data Sheet)

【第一项 (Section 1) : 化学品及企业标识 (Chemical Product and Company Identification)】

产品名称 (Product Name) : 锂二氧化锰电池 (Lithium Manganese Dioxide Battery)

产品型号 (Product code) : CR1225

制造商 (Manufacture) : 香港曼柏有限公司

EEMB Co., Ltd

地址 (address) : 香港中环德辅道中148号安泰大厦9楼

9th Floor, Amtel Building, 148 Des Voeux Road Central, Central, Hong Kong □□□□

电话 (Tel) : 852-58082720 传真 (Fax) : 852-58085462

更多信息获取:

Further information obtainable:

紧急情况下的信息: Information in case of emergency:

联系人 (Contact) : Mr. Tony Xu

紧急电话 (Emergency tel) : (+86) -755-83022275

电子邮件 (E-mail) global@eemb.com

【第二项 (Section 2) : 成分/组成信息 (Composition/information on Ingredients)】

化学物质描述

Chemical characterization

描述:

Description:

添加的混合物与无害物质在下列表中。

Mixture of the substances listed below with nonhazardous additions.

危险成份:

Dangerous components:

项目 Item 型号 Type	二氧化锰 Manganese dioxide (MnO ₂) wt%	石墨 Graphite (C) wt%	聚四氟乙 烯 Poly(teraf luoroethy lene)(PT FE) wt%	塑 胶 plastic (pp) wt%	不 锈 钢 stainless steel wt%	金 属 锂 lithium wt%	聚碳酸丙 烯 酯 Poly(prop ylene carbonate (PC) wt%	乙二醇二 甲 醚 ethylene glycol dimethyl ether (DME) wt%	高氯酸锂 lithium perchlora te (LiClO ₄) wt%
CR927	26.6	2.2	0.2	7.0	51.9	2.2	3.9	4.1	1.9
CR1025	27.4	2.7	0.2	7.2	50.6	2.1	4.0	3.8	2.0
CR1130	27.3	2.9	0.2	7.2	50.2	2.1	4.1	3.9	2.1
CR1216	25.7	2.4	0.2	7.3	52.3	1.6	4.3	4.1	2.1
CR1220	26.3	2.6	0.2	7.7	50.8	1.5	4.5	4.2	2.2
CR1225	27.9	2.7	0.2	5.0	52.0	1.5	4.4	4.2	2.1
CR1616	21	1.6	0.2	3.6	61.6	1.3	4.4	4.2	2.1

CR1620	25.1	2.3	0.2	4.6	56.3	1.3	4.2	4.0	2.0
CR1632	31.7	3.1	0.3	5.5	46.5	1.8	4.7	4.2	2.2
CR2016	25.4	3.1	0.2	4.1	55.2	1.1	4.6	4.1	3.2
CR2025	26.2	2.5	0.2	3.4	55.4	1.7	4.5	4.0	2.1
CR2032	31.7	2.6	0.3	3.9	48.8	2.0	4.5	4.1	2.1
CR2320	27.3	2.7	0.2	5.4	52.5	1.3	4.6	3.7	2.3
CR2325	28.2	2.8	0.2	5.2	51.1	1.5	5.0	3.8	2.2
CR2330	30.9	3.0	0.2	4.9	47.9	1.6	5.7	4.0	1.8
CR2335	32.1	3.5	0.3	4.6	45.1	1.9	5.3	3.8	1.7
CR2354	46.5	4.7	0.4	3.0	34.0	2.1	4.6	3.2	1.5
CR2430	32.8	3.2	0.2	3.6	49.5	1.6	4.5	3.2	1.4
CR2450	46.9	4.6	0.2	3.2	32.9	2.2	4.9	2.9	2.0
CR2477	52.3	5.3	0.4	2.0	25.8	3.0	5.6	3.4	2.2
CR2477T	52.6	5.4	0.5	1.5	25.1	3.5	6.2	3.8	2.6

【第三项 (Section 3) : 危险性概述(Hazards Summarizing)】

对于正常使用没有特别的健康危害。

No specific health hazardous for normal use.

侵入路径

Routes of Entry

眼睛, 皮肤, 吸入, 摄食。

Eyes, Skin, Inhalation, Ingestion.

这些化学物质被盛装在一个密封金属容器中。暴露的风险只能是因为电池被机械打开或者滥用。大多数最可能的风险是急性暴露当电池排空。泄漏的材料暴露于皮肤和眼睛可能导致刺激性。吸入烟气可能导致呼吸刺激。

These chemical are contained in a sealed can.Risk of exposure occurs only if the battery is mechanically or electrically abused.The most likely risk is acute exposure when a battery vents.Leaking material exposure to skin, eyes may cause irritation.Inhalation of fumes may cause respiratory irritation.

暴露的迹象/症状

Sign/Symptoms of Exposure

可能因有害物质泄漏与皮肤接触产生导热和化学烧伤。

May be a reproductive hazard.leaking can cause thermal and chemical burns upon contact with the skin.

【第四项 (Section 4) : 急救措施(First-aid Measures)】

眼睛: 使用大量的水冲洗 15 分钟, 不定时的抬起上下眼睑。就医。

Eyes: Flush eyes with plenty of water for water at least 15 minutes, occasionally lifting the upper and lower eyelids.Get medical aid.

皮肤: 移开受污染的衣服, 立即使用大量的水清洗皮肤或淋浴 15 分钟。就医。

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入: 立即从泄漏区离开到新鲜空气处, 在必要时可以使用氧气。

Inhalation: Remove from exposure and move to fresh air immediately.Use oxygen if available.

摄食

Ingestion

不要诱导呕吐。立即就医。

Do not induce vomiting. Call a physician immediately.

【第五项 (Section 5) : 消防措施(Fire-fighting Measures)】

闪点: 不可用

Flash point: N/A

燃点温度: 不可用

Auto-Ignition Temperature: N/A

灭火介质

Extinguishing Media

水, 二氧化碳, 干粉

Water, CO₂, extinguishing power

消防

Firefighting

如果在临近的区域发生火灾时, 使用水, 二氧化碳, 干粉灭火, 电池在它们原来的容器中当由于火是纸产品燃烧引起时。对于大量未包装的电池时使用合适的灭火工具, 不要使用水。

In case of fire in an adjacent area, use water, CO₂ or extinguishing power if batteries are in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged batteries use suitable extinguishers. In this case, do not use water.

【第六项 (Section 6) : 泄露应急处理(Accidental Release Measures)】

如果材料被释放或溢出采取的措施

Steps to be Taken in case Material is Released or Spilled

如果电池意外的被损害和泄漏, 用布擦拭并用塑料袋处理后放入钢制的容器中。

If the battery is accidentally broken and leaks out, wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can.

首先离开区域并允许电池冷却和蒸汽消散。提供最大的空气流通。避免皮肤和眼睛的接触或者吸入蒸汽。使用吸收剂移开溢流出来的物质。

The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled material with absorbent.

废物处置方法

Waste Disposal Method

建议将电池使用完后, 交与电池回收站。

It is recommended to discharge the battery to the end, and to battery recycle bin.

【第七项 (Section 7) : 操作处置与储存(Handling And Storage)】

电池不应该被打开, 损害或者焚化, 在它们可能泄漏或者破裂并释放到环境中之前, 它们被装在一个密封容器中。

The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release

to the environment the ingredients that they contain in the hermetically sealed container.

不要是电池短路或者充电，迫使过量放电，投入火中。不要撞击或者刺穿电池，或者浸入液体中。

Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

操作处置和储存预防措施

Precaution to be taken in handling and storing

避免机械或充放电的滥用。存储在温度低，干燥，通风且温度变化较小区域。避免存储在较高温度。

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperature should be avoided.

存储地方周围避免有加热设备，避免长时间在阳光下暴晒。

Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

其他预防措施

Other Precautions

避免短路或安装错误的正负极。

Do not short or install with incorrect polarity.

【第八项 (Section 8) : 接触控制/个体防护(Exposure Controls/Personal Protection)】

呼吸防护

Respiratory Protective

如果电池泄漏，必须提供足够的通风设备避免因空间狭小时电池泄漏。呼吸保护不需要在正常条件下使用。

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under condition of normal use.

其他防护衣或者防护设备

Other Protective Clothing or Equipment

正常条件下不必要的使用

Not necessary under conditions of normal use.

因电池泄漏建议的个人保护：呼吸防护，防护手套，防护衣，带保护的安全玻璃盾。

Personal Protective is recommended for venting batteries: Respiratory Protection, protective gloves, protective clothing and safety glass with side shields.

【第九项 (Section 9) : 理化特性(Physical and Chemical Properties)】

一般信息 General Information	
形态 Form:	固体 Solid
颜色 Color:	银白色 Silvery white
气味 Odor:	单一的 Monotony
变化条件 Change in condition	
熔点/熔化范围 Melting point/Melting range:	不可用 Not available
沸点/沸点范围 Boiling point/Boiling range:	不可用 Not available
闪点 Flash point:	无效 Not applicant

可燃性 Flammability (solid 固体, gaseous 气体):	不可用 Not available
燃点温度 Ignition temperature:	不可用 Not available
自然 Auto Ignition:	产品不会自然 Product is not selfigniting
爆炸危险: 产品目前没有发生过爆炸事故 Danger of explosion: product does not present an explosion hazard.	
爆炸极限 Explosion limits:	
下限 Lower:	不可用 Not available
上限 Upper:	不可用 Not available
氧化特征 Oxidizing properties:	不可用 Not available
蒸汽压 Vapor pressure:	不可用 Not available
密度 Density:	不可用 Not available
相对密度 Relative of density:	不可用 Not available
蒸发速率 Evaporation rate:	不可用 Not available
与水的溶解性/混和性 Solubility in / Miscibility with Water:	不可用 Not available
pH 值 pH-value:	不可用 Not available
粘度 viscosity:	不可用 Not available
标准电压 Nominal Voltage:	3.0 伏特 3.0V

【第十项 (Section 10) : 稳定性和反应性 (Stability and Reactivity)】

稳定性

Stability

稳定性正常

Stable for normal

避免条件

Conditions to Avoid

加热, 着火, 机械滥用和充放电滥用。

Heating, fire, mechanical abuse and electrical abuse.

有害物质分解产物

Hazardous decomposition products

当暴露于火中或者高温中, 电池可能会泄漏有毒烟雾。

When exposed to fire or extreme heat, batteries may emit toxic fumes.

【第十一项 (Section 11) : 毒理学资料 (Toxicological Information)】

吸入, 皮肤和和眼睛的接触当电池被打开时。

Inhalation, skin contact and eye contact are possible when the battery is opened.

当暴露内部物质, 腐蚀性烟气会刺激皮肤, 眼睛和粘膜细胞。过度暴露可能导致非纤维肺损伤和膜刺激的症状。

Exposure to internal contents, the corrosive fumes will be irritation to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

【第十二项 (Section 12) : 生态学资料 (Ecological Information)】

当立即使用或者处理电池时目前没有生态危害。当处理时，避免水，雨和雪。

When promptly used or disposed the battery does not present ecological hazard. When disposed, keep away from water, rain and snow.

【第十三项 (Section 13) : 废弃处置(Disposal)】

适当处置或准备物质的方法

Appropriate Method of Disposal of Substance or Preparation

电池处置按照被认可的地方、州和联邦政府的要求。参照国家环境机构

Dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency.

【第十四项 (Section 14) : 运输信息(Transport Information)】

交通运输部法规 DOT regulations:

危害等级 Hazard class : 9

识别号 Identification number : UN3090

包装组 Packing group: II

适合的运输名称 Proper shipping name (专有名词 technical name): 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

标签 Label : 9

陆地运输 Land transport ADR/RID (跨国 cross-border)

ADR/RID class: 混合的有害物质和物品 9 Miscellaneous dangerous substances and articles

危险代码 Danger code (Kemler): 9

联合国危险货物编号 UN-Number: 3090

包装等级 Packaging group: II

货物名称 Description of goods: 3090 锂二氧化锰电池 3090 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

国际海上危险货物运输规则 Maritime transport IMDG:

国际海上危险货物运输规则等级 IMDG Class: 9

联合国危险货物编号 UN Number: 3090

标签 Label: 9

包装等级 Packaging group: II

海洋污染物 Marine pollutant: Yes

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

Air transport ICAO-TI and IATA-DGR:

UN/ID 号 UN/ID Number: 3090

标签 Label: 9

包装等级 Packaging group: II

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

包装要求 Packing instructions: P1968-P1970

一些关于锂电池的国际运输法规: 国际海上危险货物运输规则 (IMDG) 由国际海事组织(IMO) 编制, 危险物品手册 (DGR) 是由国际航空运输协会 (IATA) 编制和技术指导安全危险货物通

过空中运输是由国际民航组织（ICAO）编制。这些规则是根据联合国建议的联合国手册 UN38.3 要求（UN 测试和标准的手册 38.3 部分）可以作为空运或者海运作的一般物品运输，否则应按照分类 9，危险货物包装组运输。

There are some regulations about the international transport of lithium batteries: the international Maritime Dangerous Goods (IMDG) Code by international Maritime Organization (IMO), Dangerous Goods Regulations (DGR, 53rd) by international Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by international Civil Aviation organization (ICAO). These regulations are based on the UN Recommendations on the requirements of UN38.3 (UN Manual of Test and Criteria, Part subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group hazardous goods.

【第十五项 (Section 15) : 法规信息 (Regulatory Information)】

Sara

第 355 章节 Section 355 (极危险物质 extremely hazardous substances)

没有组成成分被列出。

None of the ingredient is listed.

第 313 章节 Section 313 (特定有害物质清单 specific toxic chemical listings):

没有组成成分被列出。

None of the ingredient is listed.

加州 65 提案 Proposition 65

导致致癌物质的已知化学品:

Chemical known to cause cancer

没有组成成分被列出。

None of the ingredient is listed.

导致女性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for females

没有组成成分被列出。

None of the ingredient is listed.

导致男性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for males

没有组成成分被列出。

None of the ingredient is listed.

导致发育毒性的已知化学品。

Chemicals known to cause developmental toxicity:

没有组成成分被列出。

None of the ingredient is listed.

癌症类别

Carcinogenicity categories

美国环保局 EPA (环境保护局 Environmental Protection Agency).

没有组成成分被列出。

None of the ingredient is listed.

IARC (国际癌症研究机构 International Agency for Research on Cancer)

没有组成成分被列出。

None of the ingredient is listed.

NTP(美国国家毒理学规划处 National Toxicology Program)

没有组成成分被列出。

None of the ingredient is listed.

TLV(阈值 Threshold limit values establishd by ACGIH)

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None of the ingredient is listed.

NIOSH-Ca (国家职业安全及健康学会 National Institute for Occupational Safety and Health)

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None of the ingredient is listed.

OSHA- Ca(职业安全 Occupational Safety &健康协会 Health Administration)

没有组成成分被列出。

None of the ingredient is listed.

产品相关的有害信息：

Product related hazard informations:

产品的分类和标识应与有害物质指令一致。

The product has been classified and marked in accordance with directives on hazardous material.

危害物的标志：

Hazard symbols:

有害的

Harmful

标签成份有害物质的确定：

Hazard-determining components of labelling:

锂 氧化钴(III)

Lithium Cobalt(III)oxide

风险警告：

Risk phrases:

刺激皮肤。

Irritating to skin.

严重损害眼睛的风险。

Risk of serious damage eyes.

可能通过吸入和皮肤接触导致过敏作用。

May cause sensitisation by inhalation and skin contact.

安全警告：

Safety phrases:

保持锁住且不能让小孩够到。

Keep locked up and out of the reach of children.

不要呼吸尘土。

Do not breathe dust.

避免和皮肤和眼睛接触。

Avoid contact with skin and eyes.

如果和眼睛接触，立即用大量的水冲洗，并就医。

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

佩戴合适的手套和眼睛/面部的保护。

Wear suitable gloves and eye/face protection.

如果发生事故时或者如果你感觉不适时，立即就医（在可能的情况下,做好标识）。

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

处置该物质及其容器的危险或特殊废料收集点。

Dispose of this material and its container to hazardous or special waste collection point.

如果因吸入发生事故时：移动伤员到空气新鲜处并保持休息。

In case of accident by inhalation: remove casualty to fresh air and keep at rest.

【第十六项 Section 16: 其他信息(Other Information)】

本物质安全数据内容与格式是根据 29 CFR 1910.1200(g)制作。

The contents and format of this MSDS is in according with 29 CFR 1910.1200(g)

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结束

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END OF MSDS

物质安全数据表制作日期：2015年01月05日

MSDS Creation Date: January 05, 2015

物质安全数据表 (MSDS -Material Safety Data Sheet)

【第一项 (Section 1) : 化学品及企业标识 (Chemical Product and Company Identification)】

产品名称 (Product Name) : 锂二氧化锰电池 (Lithium Manganese Dioxide Battery)

产品型号 (Product code) : CR1225

制造商 (Manufacture) : 香港曼柏有限公司

EEMB Co., Ltd

地址 (address) : 香港中环德辅道中148号安泰大厦9楼

9th Floor, Amtel Building, 148 Des Voeux Road Central, Central, Hong Kong □□□□

电话 (Tel) : 852-58082720 传真 (Fax) : 852-58085462

更多信息获取:

Further information obtainable:

紧急情况下的信息: Information in case of emergency:

联系人 (Contact) : Mr. Tony Xu

紧急电话 (Emergency tel) : (+86) -755-83022275

电子邮件 (E-mail) global@eemb.com

【第二项 (Section 2) : 成分/组成信息 (Composition/information on Ingredients)】

化学物质描述

Chemical characterization

描述:

Description:

添加的混合物与无害物质在下列表中。

Mixture of the substances listed below with nonhazardous additions.

危险成份:

Dangerous components:

项目 Item 型号 Type	二氧化锰 Manganese dioxide (MnO ₂) wt%	石墨 Graphite (C) wt%	聚四氟乙 烯 Poly(teraf luoroethy lene)(PT FE) wt%	塑 胶 plastic (pp) wt%	不 锈 钢 stainless steel wt%	金 属 锂 lithium wt%	聚碳酸丙 烯 酯 Poly(prop ylene carbonate (PC) wt%	乙 二 醇 二 甲 醚 ethylene glycol dimethyl ether (DME) wt%	高氯酸锂 lithium perchlora te (LiClO ₄) wt%
CR927	26.6	2.2	0.2	7.0	51.9	2.2	3.9	4.1	1.9
CR1025	27.4	2.7	0.2	7.2	50.6	2.1	4.0	3.8	2.0
CR1130	27.3	2.9	0.2	7.2	50.2	2.1	4.1	3.9	2.1
CR1216	25.7	2.4	0.2	7.3	52.3	1.6	4.3	4.1	2.1
CR1220	26.3	2.6	0.2	7.7	50.8	1.5	4.5	4.2	2.2
CR1225	27.9	2.7	0.2	5.0	52.0	1.5	4.4	4.2	2.1
CR1616	21	1.6	0.2	3.6	61.6	1.3	4.4	4.2	2.1

CR1620	25.1	2.3	0.2	4.6	56.3	1.3	4.2	4.0	2.0
CR1632	31.7	3.1	0.3	5.5	46.5	1.8	4.7	4.2	2.2
CR2016	25.4	3.1	0.2	4.1	55.2	1.1	4.6	4.1	3.2
CR2025	26.2	2.5	0.2	3.4	55.4	1.7	4.5	4.0	2.1
CR2032	31.7	2.6	0.3	3.9	48.8	2.0	4.5	4.1	2.1
CR2320	27.3	2.7	0.2	5.4	52.5	1.3	4.6	3.7	2.3
CR2325	28.2	2.8	0.2	5.2	51.1	1.5	5.0	3.8	2.2
CR2330	30.9	3.0	0.2	4.9	47.9	1.6	5.7	4.0	1.8
CR2335	32.1	3.5	0.3	4.6	45.1	1.9	5.3	3.8	1.7
CR2354	46.5	4.7	0.4	3.0	34.0	2.1	4.6	3.2	1.5
CR2430	32.8	3.2	0.2	3.6	49.5	1.6	4.5	3.2	1.4
CR2450	46.9	4.6	0.2	3.2	32.9	2.2	4.9	2.9	2.0
CR2477	52.3	5.3	0.4	2.0	25.8	3.0	5.6	3.4	2.2
CR2477T	52.6	5.4	0.5	1.5	25.1	3.5	6.2	3.8	2.6

【第三项 (Section 3) : 危险性概述(Hazards Summarizing)】

对于正常使用没有特别的健康危害。

No specific health hazardous for normal use.

侵入路径

Routes of Entry

眼睛, 皮肤, 吸入, 摄食。

Eyes, Skin, Inhalation, Ingestion.

这些化学物质被盛装在一个密封金属容器中。暴露的风险只能是因为电池被机械打开或者滥用。大多数最可能的风险是急性暴露当电池排空。泄漏的材料暴露于皮肤和眼睛可能导致刺激性。吸入烟气可能导致呼吸刺激。

These chemical are contained in a sealed can.Risk of exposure occurs only if the battery is mechanically or electrically abused.The most likely risk is acute exposure when a battery vents.Leaking material exposure to skin, eyes may cause irritation.Inhalation of fumes may cause respiratory irritation.

暴露的迹象/症状

Sign/Symptoms of Exposure

可能因有害物质泄漏与皮肤接触产生导热和化学烧伤。

May be a reproductive hazard.leaking can cause thermal and chemical burns upon contact with the skin.

【第四项 (Section 4) : 急救措施(First-aid Measures)】

眼睛: 使用大量的水冲洗 15 分钟, 不定时的抬起上下眼睑。就医。

Eyes: Flush eyes with plenty of water for water at least 15 minutes, occasionally lifting the upper and lower eyelids.Get medical aid.

皮肤: 移开受污染的衣服, 立即使用大量的水清洗皮肤或淋浴 15 分钟。就医。

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

吸入: 立即从泄漏区离开到新鲜空气处, 在必要时可以使用氧气。

Inhalation: Remove from exposure and move to fresh air immediately.Use oxygen if available.

摄食

Ingestion

不要诱导呕吐。立即就医。

Do not induce vomiting. Call a physician immediately.

【第五项 (Section 5) : 消防措施(Fire-fighting Measures)】

闪点: 不可用

Flash point: N/A

燃点温度: 不可用

Auto-Ignition Temperature: N/A

灭火介质

Extinguishing Media

水, 二氧化碳, 干粉

Water, CO₂, extinguishing power

消防

Firefighting

如果在临近的区域发生火灾时, 使用水, 二氧化碳, 干粉灭火, 电池在它们原来的容器中当由于火是纸产品燃烧引起时。对于大量未包装的电池时使用合适的灭火工具, 不要使用水。

In case of fire in an adjacent area, use water, CO₂ or extinguishing power if batteries are in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged batteries use suitable extinguishers. In this case, do not use water.

【第六项 (Section 6) : 泄露应急处理(Accidental Release Measures)】

如果材料被释放或溢出采取的措施

Steps to be Taken in case Material is Released or Spilled

如果电池意外的被损害和泄漏, 用布擦拭并用塑料袋处理后放入钢制的容器中。

If the battery is accidentally broken and leaks out, wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can.

首先离开区域并允许电池冷却和蒸汽消散。提供最大的空气流通。避免皮肤和眼睛的接触或者吸入蒸汽。使用吸收剂移开溢流出来的物质。

The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled material with absorbent.

废物处置方法

Waste Disposal Method

建议将电池使用完后, 交与电池回收站。

It is recommended to discharge the battery to the end, and to battery recycle bin.

【第七项 (Section 7) : 操作处置与储存(Handling And Storage)】

电池不应该被打开, 损害或者焚化, 在它们可能泄漏或者破裂并释放到环境中之前, 它们被装在一个密封容器中。

The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release

to the environment the ingredients that they contain in the hermetically sealed container.

不要是电池短路或者充电，迫使过量放电，投入火中。不要撞击或者刺穿电池，或者浸入液体中。

Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

操作处置和储存预防措施

Precaution to be taken in handling and storing

避免机械或充放电的滥用。存储在温度低，干燥，通风且温度变化较小区域。避免存储在较高温度。

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperature should be avoided.

存储地方周围避免有加热设备，避免长时间在阳光下暴晒。

Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

其他预防措施

Other Precautions

避免短路或安装错误的正负极。

Do not short or install with incorrect polarity.

【第八项 (Section 8) : 接触控制/个体防护(Exposure Controls/Personal Protection)】

呼吸防护

Respiratory Protective

如果电池泄漏，必须提供足够的通风设备避免因空间狭小时电池泄漏。呼吸保护不需要在正常条件下使用。

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under condition of normal use.

其他防护衣或者防护设备

Other Protective Clothing or Equipment

正常条件下不必要的使用

Not necessary under conditions of normal use.

因电池泄漏建议的个人保护：呼吸防护，防护手套，防护衣，带保护的安全玻璃盾。

Personal Protective is recommended for venting batteries: Respiratory Protection, protective gloves, protective clothing and safety glass with side shields.

【第九项 (Section 9) : 理化特性(Physical and Chemical Properties)】

一般信息 General Information	
形态 Form:	固体 Solid
颜色 Color:	银白色 Silvery white
气味 Odor:	单一的 Monotony
变化条件 Change in condition	
熔点/熔化范围 Melting point/Melting range:	不可用 Not available
沸点/沸点范围 Boiling point/Boiling range:	不可用 Not available
闪点 Flash point:	无效 Not applicant

可燃性 Flammability (solid 固体, gaseous 气体):	不可用 Not available
燃点温度 Ignition temperature:	不可用 Not available
自然 Auto Ignition:	产品不会自然 Product is not selfigniting
爆炸危险: 产品目前没有发生过爆炸事故 Danger of explosion: product does not present an explosion hazard.	
爆炸极限 Explosion limits:	
下限 Lower:	不可用 Not available
上限 Upper:	不可用 Not available
氧化特征 Oxidizing properties:	不可用 Not available
蒸汽压 Vapor pressure:	不可用 Not available
密度 Density:	不可用 Not available
相对密度 Relative of density:	不可用 Not available
蒸发速率 Evaporation rate:	不可用 Not available
与水的溶解性/混和性 Solubility in / Miscibility with Water:	不可用 Not available
pH 值 pH-value:	不可用 Not available
粘度 viscosity:	不可用 Not available
标准电压 Nominal Voltage:	3.0 伏特 3.0V

【第十项 (Section 10) : 稳定性和反应性 (Stability and Reactivity)】

稳定性

Stability

稳定性正常

Stable for normal

避免条件

Conditions to Avoid

加热, 着火, 机械滥用和充放电滥用。

Heating, fire, mechanical abuse and electrical abuse.

有害物质分解产物

Hazardous decomposition products

当暴露于火中或者高温中, 电池可能会泄漏有毒烟雾。

When exposed to fire or extreme heat, batteries may emit toxic fumes.

【第十一项 (Section 11) : 毒理学资料 (Toxicological Information)】

吸入, 皮肤和和眼睛的接触当电池被打开时。

Inhalation, skin contact and eye contact are possible when the battery is opened.

当暴露内部物质, 腐蚀性烟气会刺激皮肤, 眼睛和粘膜细胞。过度暴露可能导致非纤维肺损伤和膜刺激的症状。

Exposure to internal contents, the corrosive fumes will be irritation to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

【第十二项 (Section 12) : 生态学资料 (Ecological Information)】

当立即使用或者处理电池时目前没有生态危害。当处理时，避免水，雨和雪。

When promptly used or disposed the battery does not present ecological hazard. When disposed, keep away from water, rain and snow.

【第十三项 (Section 13) : 废弃处置(Disposal)】

适当处置或准备物质的方法

Appropriate Method of Disposal of Substance or Preparation

电池处置按照被认可的地方、州和联邦政府的要求。参照国家环境机构

Dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency.

【第十四项 (Section 14) : 运输信息(Transport Information)】

交通运输部法规 DOT regulations:

危害等级 Hazard class : 9

识别号 Identification number : UN3090

包装组 Packing group: II

适合的运输名称 Proper shipping name (专有名词 technical name): 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

标签 Label : 9

陆地运输 Land transport ADR/RID (跨国 cross-border)

ADR/RID class: 混合的有害物质和物品 9 Miscellaneous dangerous substances and articles

危险代码 Danger code (Kemler): 9

联合国危险货物编号 UN-Number: 3090

包装等级 Packaging group: II

货物名称 Description of goods: 3090 锂二氧化锰电池 3090 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

国际海上危险货物运输规则 Maritime transport IMDG:

国际海上危险货物运输规则等级 IMDG Class: 9

联合国危险货物编号 UN Number: 3090

标签 Label: 9

包装等级 Packaging group: II

海洋污染物 Marine pollutant: Yes

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

Air transport ICAO-TI and IATA-DGR:

UN/ID 号 UN/ID Number: 3090

标签 Label: 9

包装等级 Packaging group: II

正确的装运名称 Proper shipping name: 锂二氧化锰电池 Lithium Manganese Dioxide Battery (锂金属电池 lithium Metal Battery)

包装要求 Packing instructions: P1968-P1970

一些关于锂电池的国际运输法规: 国际海上危险货物运输规则 (IMDG) 由国际海事组织(IMO) 编制, 危险物品手册 (DGR) 是由国际航空运输协会 (IATA) 编制和技术指导安全危险货物通

过空中运输是由国际民航组织（ICAO）编制。这些规则是根据联合国建议的联合国手册 UN38.3 要求（UN 测试和标准的手册 38.3 部分）可以作为空运或者海运作的一般物品运输，否则应按照分类 9，危险货物包装组运输。

There are some regulations about the international transport of lithium batteries: the international Maritime Dangerous Goods (IMDG) Code by international Maritime Organization (IMO), Dangerous Goods Regulations(DGR,53rd)by international Air Transport Association(IATA)and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by international Civil Aviation organization (ICAO).These regulation are based on the UN Recommendations on the requirements of UN38.3 (UN Manual of Test and Criteria, Part subsection38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group hazardous goods.

【第十五项 (Section 15) : 法规信息(Regulatory Information)】

Sara

第 355 章节 Section 355 (极危险物质 extremely hazardous substances)

没有组成成分被列出。

None of the ingredient is listed.

第 313 章节 Section 313 (特定有害物质清单 specific toxic chemical listings):

没有组成成分被列出。

None of the ingredient is listed.

加州 65 提案 Proposition 65

导致致癌物质的已知化学品:

Chemical known to cause cancer

没有组成成分被列出。

None of the ingredient is listed.

导致女性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for females

没有组成成分被列出。

None of the ingredient is listed.

导致男性生殖毒性物质的已知化学品。

Chemical known to cause reproductive toxicity for males

没有组成成分被列出。

None of the ingredient is listed.

导致发育毒性的已知化学品。

Chemicals known to cause developmental toxicity:

没有组成成分被列出。

None of the ingredient is listed.

癌症类别

Cancerogenity categories

美国环保局 EPA (环境保护局 Environmental Protection Agency).

没有组成成分被列出。

None of the ingredient is listed.

IARC(国际癌症研究机构 International Agency for Research on Cancer)

没有组成成分被列出。

None of the ingredient is listed.

NTP(美国国家毒理学规划处 National Toxicology Program)

没有组成成分被列出。

None of the ingredient is listed.

TLV(阈值 Threshold limit values establishd by ACGIH)

没有组成成分被列出。

None of the ingredient is listed.

NIOSH-Ca (国家职业安全及健康学会 National Institute for Occupational Safety and Health)

没有组成成分被列出。

None of the ingredient is listed.

OSHA- Ca(职业安全 Occupational Safety &健康协会 Health Administration)

没有组成成分被列出。

None of the ingredient is listed.

产品相关的有害信息：

Product related hazard informations:

产品的分类和标识应与有害物质指令一致。

The product has been classified and marked in accordance with directives on hazardous material.

危害物的标志：

Hazard symbols:

有害的

Harmful

标签成份有害物质的确定：

Hazard-determining components of labelling:

锂 氧化钴(III)

Lithium Cobalt(III)oxide

风险警告：

Risk phrases:

刺激皮肤。

Irritating to skin.

严重损害眼睛的风险。

Risk of serious damage eyes.

可能通过吸入和皮肤接触导致过敏作用。

May cause sensitisation by inhalation and skin contact.

安全警告：

Safety phrases:

保持锁住且不能让小孩够到。

Keep locked up and out of the reach of children.

不要呼吸尘土。

Do not breathe dust.

避免和皮肤和眼睛接触。

Avoid contact with skin and eyes.

如果和眼睛接触，立即用大量的水冲洗，并就医。

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

佩戴合适的手套和眼睛/面部的保护。

Wear suitable gloves and eye/face protection.

如果发生事故时或者如果你感觉不适时，立即就医（在可能的情况下,做好标识）。

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

处置该物质及其容器的危险或特殊废料收集点。

Dispose of this material and its container to hazardous or special waste collection point.

如果因吸入发生事故时：移动伤员到空气新鲜处并保持休息。

In case of accident by inhalation: remove casualty to fresh air and keep at rest.

【第十六项 Section 16: 其他信息(Other Information)】

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The contents and format of this MSDS is in according with 29 CFR 1910.1200(g)

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END OF MSDS

物质安全数据表制作日期：2015年01月05日

MSDS Creation Date: January 05, 2015

Safety DATA SHEET

FICHE DE DONNÉES SUR LA SÉCURITÉ

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.IDENTIFICATION DE LA SUBSTANCE/PRÉPARATION ET DE LA ENTREPRISE/ENTREPRISE

Product identifier

Identificateur de produit

Product Name

Nom du produit

Lithium manganese dioxide cell

Cellule de dioxyde de manganèse au lithium

Details of the supplier of the Safety data sheet

Détails du fournisseur de la fiche de données de sécurité

Supplier Name

Nom du fournisseur

EEMB Energy Power Co., Ltd

Supplier Address

Adresse du fournisseur

6/F, #110 building, Jindi Industrial Zone, Shatou Street, Futian District, Shenzhen, P.R.China
518000

Supplier Phone Number

Numéro de téléphone du fournisseur

Phone:+86 027-59233285

Téléphone :+86 027-59233285

Supplier Email

Courriel du fournisseur

3142599085@qq.com

2. HAZARDS IDENTIFICATION

2.HAZARDS IDENTIFICATION

Classification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Ce produit chimique n'est pas considéré comme dangereux par la norme de communication des dangers de l'OSHA 2012 (29 CFR 1910.1200) Ce produit est un article qui est une batterie scellée et qui, à ce titre, ne nécessite pas de SMDPar selon la norme de communication sur les risques de l'OSHA, à moins d'être rompu. Les dangers indiqués sont pour une batterie rompue.

Carcinogenicity Cancérogénicité	Category 1A Catégorie 1A
Serious eye damage/eye irritation Dommages oculaires graves/irritation oculaire	Category 1 Catégorie 1
Skin corrosion/irritation Corrosion/irritation de la peau	Category 1 Catégorie 1
Skin sensitization Sensibilisation de la peau	Category 1 Catégorie 1
Specific target organ toxicity (single exposure) Toxicité spécifique des organes cibles (exposition unique)	Category 3 Catégorie 3
Specific target organ toxicity (repeated exposure) Toxicité spécifique des organes cibles(exposition répétée)	Category 1 Catégorie 1
Acute toxicity(Oral) Toxicité aigue(Orale)	Category 3 Catégorie 3
Acute Inhalation(Gases)	Category 2


Inhalation aigue(Gaz)	Catégorie 2
Acute Inhalation(Dusts/Mists) Inhalation aigue (Poussières/Brumes)	Category 2 Catégorie 2
Acute toxicity - Inhalation (Vapors) Toxicité aigue - Inhalation (Vapors)	Category 2 Catégorie 2
Reproductive Toxicity Toxicité de la reproduction	Category 1A Catégorie 1A

GHS Label elements, including precautionary statements

Éléments de l'étiquette GHS, y compris les déclarations de précaution

Emergency Overview

Vue d'ensemble d'urgence

Signal word Mot de signal	Danger Danger
Hazard Statements Déclarations de risques	
Toxic if swallowed Toxique s'il est avalé	
Fatal if inhaled Fatal s'il est inhalé	
Causes skin irritation Causer une irritation de la peau	
Causes serious eye damage Cause de graves lésions oculaires	
May cause an allergic skin reaction Peut causer une réaction allergique de la peau	
May cause cancer Peut causer le cancer	
May damage fertility or the unborn child Peut endommager la fertilité ou l'enfant à naître	
May cause respiratory irritation. May cause drowsiness or dizziness Peut causer une irritation respiratoire. Peut causer de la somnolence ou des étourdissements	
	
<p>This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance.</p> <p>This is a battery. In case of rupture: the above hazards exist.</p> <p>Ce produit est un article qui contient une substance chimique. Des informations sur la sécurité sont données pour l'exposition à l'article tel qu'il a été vendu. L'utilisation prévue du produit ne devrait pas entraîner l'exposition à la substance chimique. C'est une batterie. En cas de rupture : les dangers ci-dessus existent.</p>	
Appearance Silver	Physical State Solid
Apparence Silver	État physique Liquide solide contenant
	Odor Odorless
	Odeur Inodore

Precautionary Statements – Prevention

Déclarations de précaution - Prévention

Wash face, hands and any exposed skin thoroughly after handling

Lavez le visage, les mains et toute peau exposée à fond après la manipulation

Wear protective gloves/protective clothing/eye protection/face protection

Portez des gants de protection/vêtements de protection/protection oculaire/protection du visage

Wear eye/face protection

Portez une protection pour les yeux et le visage

Precautionary Statements – Response

Déclarations de précaution - Réponse

Specific treatment (see supplemental first aid instructions on this label)

Traitement spécifique (voir instructions de premiers soins supplémentaires sur cette étiquette)

Eyes

Yeux

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

SI EN YEUX: Rincer prudemment avec de l'eau pendant plusieurs minutes. Enlever les lentilles cornéennes, si elles sont présentes et faciles à faire. Continuer le rinçant

If eye irritation persists: Get medical advice/attention

Si l'irritation oculaire persiste : Obtenez des conseils médicaux/attention

Skin

Peau

IF ON SKIN: Wash with plenty of soap and water

SI SUR SKIN: Laver avec beaucoup de savon et d'eau

Take off contaminated clothing and wash before reuse

Enlever les vêtements contaminés et les laver avant de les réutiliser

If skin irritation or rash occurs: Get medical advice/attention

En cas d'irritation ou d'éruption cutanée : Obtenez des conseils médicaux/attention

Precautionary Statements – Storage

Déclarations de précaution - Stockage

Store locked up

Magasin verrouillé

Precautionary Statements – Disposal

Déclarations de précaution - Disposition

Dispose of contents/container to an approved waste disposal plant

Disposer du contenu/conteneur dans une usine d'élimination des déchets approuvée

Hazards not otherwise classified (HNOC)

Risques non classés autrement

Not applicable

Non applicable

Other information

Autres informations

Interactions with Other Chemicals

Interactions avec d'autres produits chimiques

No information available

Aucune information disponible

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.COMPOSITION/INFORMATION SUR INGREDIENTS

Chemical Name	CAS No.	weight %
Manganese dioxide	1313-13-9	27.9
Graphite	7782-42-5	2.7
Polytetrafluoroethene	9002-84-0	0.2
Phosphorus	7723-14-0	5
Stainless Steel	12597-68-1	52
Lithium	7439-93-2	1.5
Propylene oxide	202468-69-7	4.4
Methane, bis(methylthio)-	1618-26-4	4.2
Lithium Perchlorate	7791-03-9	2.1

4. FIRST AID MEASURES

4.MESURES DE PREMIERS SOINS

First aid measures

Mesures de premiers secours

General Advice

Conseils généraux

First aid is upon rupture of sealed battery. Show this Safety data sheet to the doctor in attendance

Les premiers soins sont sur la rupture de la batterie scellée. Montrez cette fiche de données sécurité au médecin présent

Eye Contact

Contact visuel

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area

Rincer immédiatement avec beaucoup d'eau, également sous les paupières, pendant au moins 15 minutes. Gardez les yeux grands ouverts tout en rinçant. Retirez les lentilles cornéennes, si elles sont présentes et faciles à faire. Continuer le rinçant. Obtenir des soins médicaux si l'irritation se développe et persiste. Ne frottez pas la zone touchée

Skin Contact

Contact peau

Wash off immediately with soap and plenty of water for at least 15 minutes. In the case of skin irritation or allergic reactions see a physician. May cause an allergic skin reaction.

Laver immédiatement avec du savon et beaucoup d'eau pendant au moins 15 minutes. Dans le cas d'une irritation de la peau ou des réactions allergiques voir un médecin. Peut provoquer une réaction cutanée allergique.

Inhalation

Inhalation

Remove to fresh air. If symptoms persist, call a physician. Get medical attention immediately if symptoms occur.

Retirer à l'air frais. Si les symptômes persistent, appelez un médecin. Obtenez immédiatement des soins médicaux en cas de symptômes.

Ingestion

Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Ne pas induire des vomissements. Rincer la bouche immédiatement et boire beaucoup d'eau. Ne donnez jamais rien par la bouche à une personne inconsciente. Appelez un médecin.

Self-protection of the first aider

Autoprotection du secouriste

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8)

Évitez tout contact avec la peau, les yeux ou les vêtements. Utilisez de l'équipement de protection individuelle au besoin. Porter des vêtements de protection individuelle (voir la section 8)

Most important symptoms and effects, both acute and delayed

Les symptômes et effets les plus importants, aigus et retardés

Most Important Symptoms and Effects

Symptômes et effets les plus importants

Coughing and/ or wheezing. Itching.

Toux et/ou respiration sifflante. Démangeaisons.

Indication of any immediate medical attention and special treatment needed

Indication de toute attention médicale immédiate et traitement spécial nécessaire

Notes to Physician

Notes au médecin

Treat symptomatically

Traiter symptomatiquement

5. FIRE-FIGHTING MEASURES**5.MESURES DE LUTTE CONTRE L'INCENDIE****Suitable Extinguishing Media**

Médias d'extinction appropriés

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Utiliser des mesures d'extinction adaptées aux circonstances locales et aux Environnement.

Unsuitable Extinguishing Media

Médias d'extinction inappropriés

CAUTION: Use of water spray when fighting fire may be inefficient

CAUTION: L'utilisation de pulvérisation d'eau lors de la lutte contre l'incendie peut être inefficace

Specific Hazards Arising from the Chemical

Risques spécifiques découlant de la

No information available.

Aucune information disponible.

Hazardous Combustion Products

Produits de combustion dangereux

Carbon Oxides

Oxydes de carbone

Protective equipment and precautions for firefighters

Équipement de protection et précautions pour les pompiers

As in any fire, wear self-contained breathing apparatus pressure-demand,MSHA/NIOSH (approved or equivalent) and full protective gear.

Comme dans tout incendie, porter un appareil respiratoire autonome à la demande de pression,MSHA/NIOSH (approuvé ou équivalent) et un équipement de protection complet.

6. ACCIDENTAL RELEASE MEASURES

6.MESURES DE LIBÉRATION ACCIDENTELLE

Personal precautions, protective equipment and emergency procedures

Personal Precautions

Précautions personnelles

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Évitez tout contact avec la peau, les yeux ou les vêtements. Assurer une ventilation adéquate. Utilisez de l'équipement de protection individuelle au besoin. Évacuer le personnel vers des zones sûres.

Other Information

Autres informations

Refer to protective measures listed in Sections 7 and 8

Se référer aux mesures de protection énumérées aux articles 7 et 8

Environmental Precautions

Précautions environnementales

Refer to protective measures listed in Sections 7 and 8.

Se référer aux mesures de protection énumérées aux articles 7 et 8

Methods for cleaning up

Méthodes de nettoyage

Pick up and transfer to properly labeled containers

Ramassage et transfert dans des contenants correctement étiquetés

Methods for Containment

Méthodes de confinement

Prevent further leakage or spillage if safe to do so.

Empêchez d'autres fuites ou déversements s'ils sont sécuritaires.

Methods for cleaning up

Méthodes de nettoyage

Pick up and transfer to properly labeled containers.

Ramassage et transfert dans des contenants correctement étiquetés.

7. HANDLING AND STORAGE

7.MANIPULATION ET STOCKAGE

Precautions for safe handling

Précautions pour une manipulation sécuritaire

Handling

Manipulation

In case of rupture. Use personal protection equipment. Avoid contact with skin, eyes or clothing.

En cas de rupture. Utilisez de l'équipement de protection individuelle. Évitez tout contact avec la peau, les yeux ou les vêtements.

Conditions for safe storage, including any incompatibilities

Conditions d'entreposage sécuritaire, y compris les incompatibilités

Storage

Stockage

Keep containers tightly closed in a dry, cool and well-ventilated place.

Gardez les contenants bien fermés dans un endroit sec, frais et bien aéré.

Incompatible Products

Produits incompatibles

Strong acids. Strong oxidizing agents. Strong bases.

Des acides forts. Agents oxydants forts. Des bases solides.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.CONTRÔLES D'EXPOSITION/PROTECTION PERSONNELLE

Control parameters

Paramètres de contrôle

Exposure Guidelines

Ligne directrice sur l'exposition

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese dioxide 1313-13-9	TWA: 0.02 mg/m ³ Mn TWA: 0.1 mg/m ³ Mn	(vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ Mn	IDLH: 500 mg/m ³ Mn TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable fraction all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
Stainless steel 12597-68-1	STEL: 10 mg/m ³ Zr TWA: 0.05 mg/m ³ Pb TWA: 0.00005 mg/m ³ Be inhalable fraction TWA: 1 mg/m ³ Cu dust and mist TWA: 0.2 mg/m ³ Se TWA: 1 mg/m ³ Y TWA: 5 mg/m ³ Zr TWA: 0.02 mg/m ³ Mn TWA: 0.1 mg/m ³ Mn TWA: 0.5 mg/m ³ Hf S*	TWA: 50 µg/m ³ Pb TWA: 2 µg/m ³ Be TWA: 0.2 mg/m ³ Se TWA: 5 mg/m ³ Zr Action Level: 30 µg/m ³ Pb Poison, See 29 CFR 1910.1025 (vacated) TWA: 2 µg/m ³ Be (vacated) TWA: 0.2 mg/m ³ Se (vacated) TWA: 5 mg/m ³ Zr (vacated) STEL: 25 µg/m ³ 30 min (vacated) STEL: 10 mg/m ³ Zr (vacated) Ceiling: 5 µg/m ³ (vacated) Ceiling: 5 mg/m ³ Ceiling: 5 µg/m ³ Be Ceiling: 5 mg/m ³ Mn	IDLH: 4 mg/m ³ Be IDLH: 100 mg/m ³ Cu dust and mist IDLH: 500 mg/m ³ Mn IDLH: 1 mg/m ³ Se IDLH: 500 mg/m ³ Y IDLH: 25 mg/m ³ Zr IDLH: 100 mg/m ³ Pb IDLH: 10 mg/m ³ Ni IDLH: 50 mg/m ³ Hf Ceiling: 0.05 mg/m ³ V dust and fume 15 min Ceiling: 0.0005 mg/m ³ Be TWA: 1 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ Mn TWA: 0.2 mg/m ³ except Selenium hexafluoride Se TWA: 1 mg/m ³ Y TWA: 5 mg/m ³ except Zirconium tetrachloride Zr TWA: 0.050 mg/m ³ Pb TWA: 0.015 mg/m ³ except Nickel carbonyl Ni TWA: 0.5 mg/m ³ Hf STEL: 3 mg/m ³ Mn STEL: 10 mg/m ³ Zr

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL:
Occupational Safety and Health

Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL:

Occupational Safety and Health Administration - Limites d'exposition admissibles immédiatement dangereuses pour
la vie ou la santé

Other Exposure GuidelinesAutres lignes directrices sur
l'exposition

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v.
OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national
exposure control parameters

Limites libérées révoquées par la décision de la Cour d'appel dans l'affaire

AFL-CIO c. OSHA, 965 F.2d 962 (11e cir., 1992) Voir l'article 15 des paramètres nationaux de contrôle de l'exposition

Appropriate engineering controls

Contrôles techniques appropriés

Engineering Measures

Mesures techniques

Showers

Douches

Eyewash stations

Stations de lavage des yeux

Ventilation systems

Systèmes de ventilation

Individual protection measures, such as personal protective equipment

Mesures de protection individuelles, telles que l'équipement de protection individuelle

Eye/Face Protection

Protection œil/visage

If splashes are likely to occur: Wear Safety glasses with side shields (or goggles). None required for consumer use.

Si des éclaboussures sont susceptibles de se produire: Portez des lunettes de sécurité avec des boucliers latéraux (ou des lunettes). Aucun n'est requis pour l'usage du consommateur.

Skin and Body Protection

Protection de la peau et du corps

Wear protective gloves and protective clothing. Long sleeved clothing.

Impervious gloves

Portez des gants de protection et des vêtements de protection. Vêtements à manches longues. Gants imperméables

Respiratory Protection

Protection respiratoire

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Aucun équipement de protection n'est nécessaire dans des conditions d'utilisation normales. Si les limites d'exposition sont dépassées ou si l'irritation est ressentie, une ventilation et une évacuation peuvent être nécessaires.

Hygiene Measures

Mesures d'hygiène

Handle in accordance with good industrial hygiene and Safety practice.

Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

Poignée conformément aux bonnes pratiques d'hygiène et de sécurité. Ne mangez pas, ne buvez pas ou ne fumez pas lorsque vous utilisez ce produit. Enlever les vêtements contaminés et les laver avant de les réutiliser. Évitez tout contact avec la peau, les yeux ou les vêtements. Portez des gants appropriés et une protection pour les yeux et le visage. Lavez-vous les mains avant de se briser et immédiatement après la manipulation du produit.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

Physical and Chemical Properties

Propriétés physiques et chimiques

Physical State

État physique

Solid

solide

Appearance

Apparence

Silver

Silver

Odor

Odeur

Odorless

Inodore

Color

Couleur

No information available

Aucune information disponible

Odor Threshold

Seuil d'odeur

No information available

Aucune information disponible

Property

Propriété

Values

Valeurs

Remarks/ Method

Remarques/Méthode

Ph

Ph

No data available

Aucune information disponible

None known

Inconnu

Melting / freezing point

No data available

None known

Point de fusion / point de congélation	Aucune information disponible	Inconnu
Boiling point / boiling range Point d'ébullition / gamme d'ébullition	No data available Aucune information disponible	None known Inconnu
Flash Point Point d'éclair	No data available Aucune information disponible	None known Inconnu
Evaporation Rate Taux d'évaporation	No data available Aucune information disponible	None known Inconnu
Flammability (solid, gas) Flammabilité (solide, gaz)	No data available Aucune information disponible	None known Inconnu
Flammability Limit in Air Limite d'inflammabilité dans l'air		
Upper flammability limit Limite supérieure d'inflammabilité	No data available Aucune information disponible	
Lower flammability limit Limite d'inflammabilité inférieure	No data available Aucune information disponible	
Vapor pressure Pression de vapeur	No data available Aucune information disponible	None known Inconnu
Vapor density Densité de vapeur	No data available Aucune information disponible	None known Inconnu
Specific Gravity Spécifique Gravité	No data available Aucune information disponible	None known Inconnu
Water Solubility Hydrosolubilité	No data available Aucune information disponible	None known Inconnu
Solubility in other solvents Solubilité dans d'autres solvants	No data available Aucune information disponible	None known Inconnu
Partition coefficient: n-octanol/water Coefficient de partition : n-octanol/eau	0.00001 0.00001	None known Inconnu
Autoignition temperature Température d'auto-allumage	No data available Aucune information disponible	None known Inconnu
Decomposition temperature Température de décomposition	No data available Aucune information disponible	None known Inconnu
Kinematic viscosity Viscosité cinématique	No data available Aucune information disponible	None known Inconnu
Dynamic viscosity Viscosité dynamique	0.00001 0.00001	None known Inconnu
Explosive properties Propriétés explosives	No data available Aucune information disponible	
Oxidizing Properties Propriétés oxydantes	No data available Aucune information disponible	
Other Information Autres informations		
Softening Point Point d'adoucissement	No data available Aucune information disponible	
VOC Content (%) Contenu DE COV (%)	No data available Aucune information disponible	
Particle Size Taille des particules	No data available Aucune information disponible	

10. STABILITY AND REACTIVITY

10.STABILITÉ ET RÉACTIVITÉ

Reactivity

Réactivité

No data available

Aucune donnée disponible

Chemical stability

Stabilité chimique

Stable under recommended storage conditions.

Stable dans les conditions d'entreposage recommandées.

Possibility of Hazardous Reactions

Possibilité de réactions dangereuses

None under normal processing.

Aucun dans le cadre d'un traitement normal.

Hazardous Polymerization

Polymérisation dangereuse

Hazardous polymerization does not occur.

La polymérisation dangereuse ne se produit pas.

Conditions to avoid

Conditions à éviter

None known based on information supplied.

inconnu s'appuyant sur les informations fournies.

Incompatible materials

Matériaux incompatibles

Strong acids. Strong oxidizing agents. Strong bases.

Des acides forts. Agents oxydants forts. Des bases solides.

Hazardous Decomposition Products

Produits de décomposition dangereux

Carbon oxides.

Des oxydes de carbone.

11. TOXICOLOGICAL INFORMATION

11.INFORMATIONS TOXICOLOGIQUES

Information on likely routes of exposure

Product Information

Informations sur les produits

Product does not present an acute toxicity hazard based on known or supplied information In case of rupture

Le produit ne présente pas de risque de toxicité aigu fondé sur des informations connues ou fournies en cas de rupture

Inhalation

Inhalation

Specific test data for the substance or mixture is not available.

Corrosive by inhalation.(based on components).

Les données d'essai spécifiques pour la substance ou le mélange ne sont pas disponibles. Corrosif par inhalation. (basé sur des composants).

Eye Contact

Contact visuel

Specific test data for the substance or mixture is not available.

Expected to be and irritant based on components. Irritating to eyes.

May cause redness, itching, and pain. May cause temporary eye irritation.

Les données d'essai spécifiques pour la substance ou le mélange ne sont pas disponibles. Prévu pour être et irritant basé sur les composants. Irritant pour les yeux. Peut causer des rougeurs, des démangeaisons et de la douleur. Peut causer une irritation temporaire des yeux.

Skin Contact

Contact peau

Specific test data for the substance or mixture is not available.

Expected to be an irritant based on components. Irritating to skin.

Prolonged contact may cause redness and irritation.

Les données d'essai spécifiques pour la substance ou le mélange ne sont pas

disponibles. On s'attend à être un irritant basé sur des composants. Irritant pour la peau. Un contact prolongé peut causer des rougeurs et de l'irritation.

Ingestion

Ingestion

Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Les données d'essai spécifiques pour la substance ou le mélange ne sont pas disponibles. L'ingestion peut causer une irritation des muqueuses. L'ingestion peut causer une irritation gastro-intestinale, des nausées, des vomissements et de la diarrhée.

Component Information

Informations sur les composants

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Manganese dioxide 1313-13-9	= 9000 mg/kg (Rat)	-	-

Information on toxicological effects

Informations sur les effets toxicologiques

Symptoms

Symptômes

Erythema (skin redness). May cause redness and tearing of the eyes. Coughing and/ or wheezing. Itching. Érythème (rougeur de peau). Peut causer des rougeurs et des déchirures des yeux. Toux et/ou respiration sifflante. Démangeaisons.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Effets retardés et immédiats ainsi que effets chroniques de l'exposition à court et à long terme

Sensitization

Sensibilisation

May cause sensitization of susceptible persons. May cause sensitization by skin contact. Peut provoquer la sensibilisation des personnes sensibles. Peut provoquer une sensibilisation par contact cutané.

Mutagenic Effects

Effets mutagènes

No information available

Carcinogenicity

Cancérogénicité

Aucune information disponible

The table below indicates whether each agency has listed any ingredient as a carcinogen

Le tableau ci-dessous indique si chaque organisme a inscrit un ingrédient comme cancérogène

Chemical Name	ACGIH	IARC	NTP	OSHA
Stainless Steel 12597-68-1	A1 A3	Group 1 Group 2A Group 2B Group 3	Known Reasonably Anticipated	X

12. ECOLOGICAL INFORMATION

12. INFORMATIONS ÉCOLOGIQUES

Ecotoxicity

No information available
Aucune information disponible.

Persistence and Degradability

Persistence et dégradabilité
No information available.
Aucune information disponible.

Bioaccumulation

Bioaccumulation

Chemical Name	Log Pow
Manganese dioxide	<0

1313-13-9

Other adverse effects

Autres effets indésirables

No information available.

Aucune information disponible.

13. DISPOSAL CONSIDERATIONS

13. CONSIDÉRATIONS D'ÉLIMINATION

Waste treatment methods

Méthodes de traitement des déchets

Disposal methods

Méthodes d'élimination

Should not be released into the environment.

Ne doit pas être libéré dans l'environnement.

Contaminated Packaging

Emballage contaminé

Dispose of in accordance with federal, state and local regulations.

Disposer conformément aux réglementations fédérales, étatiques et locales.

California Hazardous Waste Codes 141

Codes de déchets dangereux de la Californie 141

Chemical Name	California Hazardous Waste
Lithium 7439-93-2	Corrosive Ignitable Reactive
Stainless Steel 12597-68-1	Toxic

14. TRANSPORT INFORMATION

14. INFORMATIONS SUR LES TRANSPORTS

Note:

Note

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

Le transport des cellules et batteries primaires au lithium est réglementé par l'Organisation de l'aviation civile internationale, l'Association internationale du transport aérien, l'International Maritime Dangerous Goods Code et le département des Transports des États-Unis. Les batteries doivent répondre aux critères d'expédition suivants : 1. Les expéditions aériennes doivent satisfaire aux exigences indiquées dans la disposition spéciale A45 du Règlement sur les marchandises dangereuses de l'Association internationale du transport aérien. 2. Répondre aux exigences du département des Transports des États-Unis inscrits au 49 CFR 173.185. 3. Le transport de batteries au lithium primaires est interdit à bord des avions de passagers. Se référer au Registre fédéral le 15 décembre 2004 (Matières dangereuses; Interdiction de transport de batteries et de cellules de lithium primaires à bord d'aéronefs de passagers; Règle finale) Les batteries au lithium expédiées sous le titre de « batteries au lithium », « batteries au lithium emballées avec de l'équipement » ou « batteries au lithium contenues dans l'équipement » ne peuvent pas être classées comme « marchandises dangereuses » lorsqu'elles sont expédiées conformément à la « provision spéciale A45 de l'IATA-DGR » " ou "disposition spéciale 188 du code IMO-IMDG"

DOT	NOT REGULATED NON RÉGLEMENTÉ
Proper Shipping Name Nom d'expédition approprié	NOT REGULATED NON RÉGLEMENTÉ
Hazard Class Catégorie de danger	N/A N/A
TDG	Not regulated NON RÉGLEMENTÉ
MEX	Not regulated NON RÉGLEMENTÉ
ICAO	Not regulated NON RÉGLEMENTÉ
IATA	Not regulated NON RÉGLEMENTÉ
Proper Shipping Name Nom d'expédition approprié	Not regulated NON RÉGLEMENTÉ
Hazard Class Catégorie de danger	N/A N/A
IMDG/IMO	Not regulated NON RÉGLEMENTÉ
Proper Shipping Name Nom d'expédition approprié	NON-REGULATED PER SP 188
Hazard Class Catégorie de danger	N/A
EmS No.	F-A, S-I
RID	Not regulated NON RÉGLEMENTÉ
ADR	Not regulated NON RÉGLEMENTÉ
AND	Not regulated NON RÉGLEMENTÉ

15. REGULATORY INFORMATION

15. INFORMATIONS RÉGLEMENTAIRES

International Inventories

Inventaires internationaux

TSCA	Complies Conforme
DSL	All components are listed either on the DSL or NDSL. Tous les composants sont répertoriés soit sur le DSL ou NDSL

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

TSCA -United States Toxic Substances Control Act Section 8(b) Inventaire

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List Liste des substances domestiques

DSL/NDSL - Canadiennes/Liste des substances non domestiques

US Federal Regulations

Règlement fédéral des États-Unis

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

L'article 313 du Titre III de la Superfund Amendments and Reauthorization Act of 1986 (SARA). Ce produit contient un produit chimique ou chimique qui est assujetti aux exigences de déclaration de la Loi et du titre 40 du Code de réglementation fédérale, Partie 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Manganese dioxide	1313-13-9	27.9	1.0
Stainless Steel	12597-68-1	52	1.0 0.1

SARA 311/312 Hazard Categories

SARA 311/312 Catégories de dangers

Acute Health Hazard	No
Risque aigu pour la santé	non
Chronic Health Hazard	No
Risque chronique pour la santé	non
Fire Hazard	No
Incendie Risque	non
Sudden release of pressure hazard	No
Libération soudaine du risque de pression	non
Reactive Hazard	No
Risque réactif	non

CWA (Clean Water Act)**CWA (Loi sur l'eau propre)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Ce produit contient les substances suivantes qui sont des polluants réglementés en vertu de la Loi sur l'eau propre (40 CFR 122.21 et 40 CFR 122.42)

Chemical Name Nom chimique	CWA - Reportable Quantities CWA -Rapportables Quantités	CWA - Toxic Pollutants CWA - Toxiques Polluants	CWA - Priority Pollutants CWA - Priorité Polluants	CWA - Hazardous Substances CWA - Dangereux Substances
Stainless Steel 12597-68-1		X		

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Ce matériel, tel qu'il est fourni, contient une ou plusieurs substances réglementées comme substance dangereuse en vertu de la Loi sur l'indemnisation et la responsabilité en matière d'indemnisation et de responsabilité environnementales globales (CERCLA) (40 CFR 302)

Chemical Name Nom chimique	Hazardous Substances RQs Substances dangereuses RQs	Extremely Hazardous Substances RQs Extrêmement dangereux Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Aluminum foil 7429-90-5			

US State Regulations

Règlement des États-Unis

California Proposition 65

Proposition de la Californie 65

This product contains the following Proposition 65 chemicals.

Ce produit contient les produits chimiques suivants de la Proposition 65.

Chemical Name	California Proposition 65
Stainless Steel -12597-68-1	Carcinogen Developmental

U.S. State Right-to-Know Regulations

Règlement sur le droit de savoir des États-Unis

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Manganese dioxide 1313-13-9			X	X	X
Lithium 7439-93-2	X	X	X		

International Regulations

Règlement international

Mexico**National occupational exposure limits**

Limites nationales d'exposition professionnelle

Component	Carcinogen Status	Exposure Limits
Manganese dioxide 1313-13-9		Mexico: TWA= 0.2 mg/m ³

Stainless Steel 12597-68-1	A3 A2	Mexico: TWA 0.15 mg/m3 Mexico: TWA 0.002 mg/m3 Mexico: TWA 0.2 mg/m3 Mexico: TWA 5 mg/m3 Mexico: STEL 10 mg/m3
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Mexico - Occupational Exposure Limits – Carcinogens
Mexico - Limites d'exposition professionnelle - Cancérogène

Canada**WHMIS Hazard Class**

Classe DE danger WHMIS

D2A - Very toxic materials

**16. OTHER INFORMATION**

16.AUTRES INFORMATIONS

Prepared By

Préparé par

EEMB Energy Power Co., Ltd

Revision Date

Date de révision

27-June-2019

Revision Note

Note de révision

No information available

Aucune information disponible

End of Safety Data Sheet

Feuille de données de fin de sécurité