



# 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**

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

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Handling</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes.
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### Conditions for safe storage, including any incompatibilities

<b>Storage</b>	Keep container tightly closed.
<b>Incompatible products</b>	None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

<b>Exposure Guidelines</b>	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies
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### Appropriate engineering controls

<b>Engineering Measures</b>	Showers Eyewash stations Ventilation systems
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### Individual protection measures, such as personal protective equipment

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and Chemical Properties

<b>Physical state</b>	Solid	<b>Odor</b>	None
<b>Appearance</b>	Blue	<b>Odor Threshold</b>	No information available
<b>Color</b>	Blue		

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

<b>Sensitization</b>	No information available.
<b>Mutagenic Effects</b>	No information available.
<b>Carcinogenicity</b>	Contains no ingredient listed as a carcinogen.

<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Chronic Toxicity</b>	No known effect based on information supplied.
<b>Target Organ Effects</b>	None known.
<b>Aspiration Hazard</b>	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

**DOT** NOT REGULATED

**TDG** NOT REGULATED

**ICAO** NOT REGULATED

**IATA** NOT REGULATED

**IMDG/IMO** 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**

<b>NFPA</b>	<b>Health Hazards</b> 0	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Physical and Chemical Hazards</b> -
<b>HMIS</b>	<b>Health Hazards</b> 0	<b>Flammability</b> 0	<b>Physical Hazard</b> 0	<b>Personal Protection</b> -

<b>Prepared By</b>	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
<b>Issuing Date</b>	13-Oct-2016
<b>Revision Date</b>	06-Feb-2017
<b>Revision Note</b>	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 <sub>2</sub> ) wt%	石 墨 Graphite (C) wt%	聚四氟乙 烯 Poly(terafluoroethylene)(PTFE) wt%	塑 胶 plastic (pp) wt%	不 锈 钢 stainless steel wt%	金 属 锂 lithium wt%	聚碳酸丙 烯 酯 Poly(propylene carbonate) (PC) wt%	乙二醇二 甲 醚 ethylene glycol dimethyl ether (DME) wt%	高氯酸锂 lithium perchlorate (LiClO <sub>4</sub> ) 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.

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#### 【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, CO<sub>2</sub>, 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, CO<sub>2</sub> 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.

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#### 【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 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.

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#### 【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 avoid.

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

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#### 【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.

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#### 【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.

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#### 【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.

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**【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.

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**【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.

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**【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 established 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.

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#### 【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

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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 Mangane se dioxide (MnO <sub>2</sub> ) 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 <sub>4</sub> ) 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 batterise in their original containers sin ce the f uel of th e f ire is basically p aper pr oducts.For b ulk q uantities 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 Taken in case Material is Released or Spilled

如果电池意外的被损害和泄漏，用布擦试并用塑料袋处理后放入钢制的容器中。

If the battery is accidental 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 batterie to cool and vapors to dissipate.Provide maximum ventilation.Aovid 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 incinerate, 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 avoid.

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

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#### 【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.

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**【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 established 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.

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#### 【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

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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 <sub>2</sub> ) wt%	石 墨 Graphite (C) wt%	聚四氟乙 烯 Poly(terafluoroethylene)(PTFE) wt%	塑 胶 plastic (pp) wt%	不 锈 钢 stainless steel wt%	金 属 锂 lithium wt%	聚碳酸丙 烯 酯 Poly(propylene carbonate) (PC) wt%	乙二醇二 甲 醚 ethylene glycol dimethyl ether (DME) wt%	高氯酸锂 lithium perchlorate (LiClO <sub>4</sub> ) 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 batterise in their original containers sin ce the f uel of th e f ire is basically p aper pr oducts.For b ulk q uantities of unpackaged batteries use suitable extinguishers.In this case, do not use water.

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#### 【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 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 accidental 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 batterie to cool and vapors to dissipate.Provide maximum ventilation.Aovid 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 incinerate, 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 avoid.

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

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#### 【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 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 established 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.

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#### **【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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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 <sub>2</sub> ) wt%	石 墨 Graphite (C) wt%	聚四氟乙 烯 Poly(terafluoroethylene)(PTFE) wt%	塑 胶 plastic (pp) wt%	不 锈 钢 stainless steel wt%	金 属 锂 lithium wt%	聚碳酸丙 烯 酯 Poly(propylene carbonate) (PC) wt%	乙二醇二 甲 醚 ethylene glycol dimethyl ether (DME) wt%	高氯酸锂 lithium perchlorate (LiClO <sub>4</sub> ) 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, CO<sub>2</sub>, 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, CO<sub>2</sub> 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 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 avoid.

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 established 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.

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#### 【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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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

Issuing Date 13-Apr-2016

Revision Date 12-Apr-2020

Revision Number 1

Canada / English



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## 1. IDENTIFICATION

### Product identifier

**Product Name** Pyramid "Duration" 3.6V Lithium Battery Size C

### Other means of identification

**Product Code(s)** 1315936

### Recommended use of the chemical and restrictions on use

**Recommended Use** Lithium Primary/Metal Batteries

**Restrictions on use** No information available

### Details of the supplier of the safety data sheet

**Initial supplier identifier** Power Glory Tech (Shenzhen) Co., Ltd.

**Address** Dong Keng Industrial Zone, Dong Keng Village,  
Gongming Town  
Shenzhen  
NA  
NA  
CN

**Telephone** Phone:755-2754-3060  
Fax:+86 755 2754-3062

**E-mail** jerry@omnergy.com.hk

### Emergency telephone number

**Company Emergency Phone Number** +852 6093-2825

## 2. HAZARDS IDENTIFICATION

### Classification

This is a battery. In case of rupture:.

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Gases)	Category 4



## Size C

Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2

**GHS Label elements, including precautionary statements****Danger**

**Hazard statements** This is a battery. In case of rupture:.

Harmful if swallowed

Harmful if inhaled

Causes severe skin burns and eye damage

Suspected of causing cancer

**Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

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

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor

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

**Eyes**

Immediately call a POISON CENTER or doctor

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

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]

Wash contaminated clothing before reuse

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a POISON CENTER or doctor if you feel unwell

Immediately call a POISON CENTER or doctor

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Rinse mouth

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other information**

Harmful to aquatic life with long lasting effects

**Unknown acute toxicity** 51 % of the mixture consists of ingredient(s) of unknown toxicity

51 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

51 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

51 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

51 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

51 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

Not applicable.

**Mixture**

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Supplier Trade Secret	-	30 - 40%	-	-
Supplier Trade Secret	-	0 - 10%	-	-
Supplier Trade Secret	-	0 - 10%	-	-
Supplier Trade Secret	-	0 - 10%	-	-

### 4. FIRST AID MEASURES

**First aid measures**

**General advice**

First aid is upon rupture of sealed battery. Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.

**Inhalation**

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.

**Eye contact**

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

**Skin contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.



<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. See section 8 for more information.

**Most important symptoms and effects, both acute and delayed**

<b>Symptoms</b>	Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.
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**Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.
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## 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Specific hazards arising from the chemical</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
<b>Hazardous Combustion Products</b>	Carbon oxides.
<b>Explosion Data</b>	
<b>Sensitivity to Mechanical Impact</b>	None.
<b>Sensitivity to Static Discharge</b>	None.
<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

<b>Personal precautions</b>	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid generation of dust. Do not breathe dust.
<b>Other Information</b>	Refer to protective measures listed in Sections 7 and 8.

**Methods and material for containment and cleaning up**

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



## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### Advice on safe handling

In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid generation of dust.

### Conditions for safe storage, including any incompatibilities

#### Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Limits

Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Supplier Trade Secret	Ceiling: 1 ppm Ceiling: 4.9 mg/m <sup>3</sup>	Ceiling: 1 ppm	CEV: 0.2 ppm	Ceiling: 1 ppm Ceiling: 4.9 mg/m <sup>3</sup>
Supplier Trade Secret	TWA: 2 mg/m <sup>3</sup>			TWA: 2 mg/m <sup>3</sup>
Supplier Trade Secret	TWA: 3.5 mg/m <sup>3</sup>	TWA: 3 mg/m <sup>3</sup>	TWA: 3 mg/m <sup>3</sup>	TWA: 3.5 mg/m <sup>3</sup>

#### Other Exposure Guidelines

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.

### Appropriate engineering controls

#### Engineering controls

Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Face protection shield.

#### Hand protection

Wear suitable gloves. Impervious gloves.

#### Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

#### Respiratory protection

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

#### General hygiene considerations

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid breathing dust/fume/gas/mist/vapors/spray.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and Chemical Properties

Physical state	Solid
Appearance	Solid
Odor	No information available
Color	No information available
Odor Threshold	No information available

<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	No data available	None known
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
Relative density	No data available	None known
Water Solubility	Insoluble	
Solubility(ies)	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

### Other Information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

## 10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.



Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat.
Incompatible materials	Acids. Bases. Oxidizing agent.
Hazardous Decomposition Products	Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information In case of rupture:
Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Harmful by inhalation.
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

### Information on toxicological effects

Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing.
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### Numerical measures of toxicity

#### Acute Toxicity

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

ATEmix (oral)	522.00 mg/kg
ATEmix (inhalation-gas)	5,654.00 mg/L
ATEmix (inhalation-dust/mist)	1.89 mg/L
ATEmix (inhalation-vapor)	13.82 mg/L

Unknown acute toxicity 51 % of the mixture consists of ingredient(s) of unknown toxicity

- 51 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 51 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 51 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 51 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 51 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

#### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Supplier Trade Secret	= 270 mg/kg ( Rat )	-	= 500 ppm ( Rat ) 1 h

## Size C

Supplier Trade Secret	= 380 mg/kg ( Rat )	> 2 g/kg ( Rabbit )	-
Supplier Trade Secret	> 15400 mg/kg ( Rat )	> 3 g/kg ( Rabbit )	-

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

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes burns.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.

**Respiratory or skin sensitization** No information available. **Germ**

**cell mutagenicity** No information available.

**Carcinogenicity** Classification based on data available for ingredients. Contains a known or suspected carcinogen.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Supplier Trade Secret	A3	Group 2B	-	X

**Legend**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 2B - Possibly Carcinogenic to Humans

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Supplier Trade Secret	-	96h LC50: 5.31 - 7.2 mg/L (Oncorhynchus mykiss) 96h LC50: = 27.1 mg/L (Gambusia affinis) 96h LC50: 6.2 - 11.9 mg/L (Oncorhynchus mykiss)	-	48h EC50: = 3.9 mg/L
Supplier Trade Secret	-	-	-	24h EC50: > 5600 mg/L

**Persistence and Degradability** No information available.

**Bioaccumulation** There is no data for this product.

**Mobility** No information available.

**Other adverse effects** No information available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

### 14. TRANSPORT INFORMATION

**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"

#### TDG

<b>UN-No.</b>	UN3090
<b>Proper Shipping Name</b>	LITHIUM METAL BATTERIES
<b>Hazard Class</b>	9
<b>Description</b>	UN3090, LITHIUM METAL BATTERIES, 9

#### DOT

<b>UN-No.</b>	UN3090
<b>Proper Shipping Name</b>	LITHIUM METAL BATTERY
<b>Hazard Class</b>	9



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Description	Meets the requirements of 49CFR173.185(c)(iv) to be transported as non-dangerous goods
Emergency Response Guide Number	138

**MEX**

UN-No.	UN3090
Proper Shipping Name	LITHIUM METAL BATTERIES
Hazard Class	9
Packing Group	II
Description	UN3090, LITHIUM METAL BATTERIES, 9, II

**ICAO**

UN-No.	UN3090
Proper Shipping Name	LITHIUM METAL BATTERIES
Hazard Class	9
Description	UN3090, LITHIUM METAL BATTERIES, 9

**IATA**

UN-No.	UN3090
Proper Shipping Name	LITHIUM METAL BATTERIES
Hazard Class	9
ERG Code	9FZ
Description	UN3090, LITHIUM METAL BATTERIES, 9

**IMDG/IMO**

UN-No.	UN3090
Proper Shipping Name	LITHIUM METAL BATTERIES
Hazard Class	9
EmS-No.	F-A, S-I
Description	UN3090, LITHIUM METAL BATTERIES, 9

**RID**

UN-No.	UN3090
Proper Shipping Name	LITHIUM METAL BATTERIES
Hazard Class	9
Classification code	M4
Description	UN3090, LITHIUM METAL BATTERIES, 9 (A)



ADR/RID-Labels	A
<b>ADR</b>	
UN-No.	UN3090
Proper Shipping Name	LITHIUM METAL BATTERIES
Hazard Class	9
Classification code	M4
Tunnel restriction code	(E)
Description	UN3090, LITHIUM METAL BATTERIES, 9 (A), (E)
ADR/RID-Labels	A
<b>ADN</b>	
UN-No.	UN3090
Proper Shipping Name	LITHIUM METAL BATTERIES
Hazard Class	9A
Classification code	M4
Special Provisions	188, 230, 310, 376, 377, 636
Description	UN3090, LITHIUM METAL BATTERIES, 9A
Hazard Labels	9A
Limited Quantity	0

## 15. REGULATORY INFORMATION

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

#### International Regulations

**Ozone-depleting substances (ODS)** Not applicable

**Persistent Organic Pollutants** Not applicable

**Export Notification requirements** Not applicable

#### International Inventories

<b>TSCA</b>	Contact supplier for inventory compliance status.
<b>DSL/NDSL</b>	Contact supplier for inventory compliance status.
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status.
<b>ENCS</b>	Contact supplier for inventory compliance status.
<b>KECL</b>	Contact supplier for inventory compliance status.
<b>PICCS</b>	Contact supplier for inventory compliance status.
<b>AICS</b>	Contact supplier for inventory compliance status.

#### Legend

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

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances



## Size C

**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health hazards</b> 1	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Physical and Chemical Properties -</b>
<b><u>HMIS</u></b>	<b>Health hazards</b> 0	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal Protection</b> X

**Prepared By**

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

**Issuing Date**

13-Apr-2016

**Revision Date**

12-Apr-2020

**Revision Note**

No information available

**Disclaimer**

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**End of Safety Data Sheet**

