



## 化学品安全技术说明书 (SDS) 编制报告

编号: DG2149363C

日期: 2021/06/16

样品名称	可充电磷酸铁锂电芯 FFH3B3 3.2V 100Ah 320Wh		
申请单位	芜湖天弋能源科技有限公司		
供应商	芜湖天弋能源科技有限公司		
样品组分	磷酸铁锂: 30%~40%; 石墨: 10%~30%; 铜箔: < 10%; 铝箔: < 10%; 电解液: 15%~25%; 隔离膜: < 5%		
设计依据	联合国《全球化学品统一分类和标签制度》(GHS) 第八修订版		
化学品安全技术说明书(SDS)请参见本报告附件。			
编制		签发	

说明: 本报告有效期至联合国 GHS 第九修订版实施之前。





## 报告书使用约定

1. 本中心依据委托人（托运人或其代理人）提供的化学品信息，出具此报告书。
2. 依据出具报告的需要，本中心要求委托人提供真实、完整的样品及资料。
3. 申请单位提供的信息是正确制定本安全说明书的基础，本中心不承担因申请单位提供错误信息导致的任何后果。
4. 除非特别说明，本报告中数据仅对检测样品负责。
5. 本报告经授权签字人签字并加盖本中心印章后生效。
6. 本中心保证本报告的客观公正性，对委托单位的商业信息、技术文件等商业秘密履行保密义务。
7. 未经本中心书面批准，不得部分复制本报告书。
8. 私自转让、盗用、冒用、涂改、或以任何媒体形式篡改的报告书无效。
9. 报告的真伪性查询可扫描报告上二维码。



## 安全数据单

# 可充电磷酸铁锂电芯 FFH3B3 3.2V 100Ah

## 320Wh

芜湖天弋能源科技有限公司

● 根据 GHS 第八修订版



### 第一部分 化学品及企业标识

#### > 产品标识

产品中文名称	可充电磷酸铁锂电芯 FFH3B3 3.2V 100Ah 320Wh
产品英文名称	Rechargeable Lithium iron Phosphate Cell FFH3B3 3.2V 100Ah 320Wh
别名	-
CAS No.	不适用
EC No.	不适用
分子式	不适用

#### > 产品推荐和限制用途

产品的推荐用途	请咨询生产商。
产品的限制用途	请咨询生产商。

#### > 安全数据单提供者信息

申请单位名称	芜湖天弋能源科技有限公司
申请单位地址	中国安徽省芜湖市弋江区吴梅山路 8 号
申请单位邮编	241000
申请单位联系电话	+86-553-2672266
申请单位传真号码	+86-553-2672251
申请单位电子邮箱	chenchen@etcbattery.com
供应商名称	芜湖天弋能源科技有限公司
供应商地址	中国安徽省芜湖市弋江区吴梅山路 8 号
供应商邮编	241000
供应商联系电话	+86-553-2672266
供应商传真号码	+86-553-2672251
供应商电子邮箱	chenchen@etcbattery.com

#### > 企业应急电话

企业应急电话	+86-553-2672266
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### 第二部分 危险标识

按照联合国 GHS (第八修订版) 规定, 该产品所属危险性类别及标签要素如下:

#### > GHS 危险性类别

该产品符合“物品”的定义。在全球化学品统一分类和标签制度 (GHS) 中, 美国职业安全健康管理署“危险公示标准”(29 CFR 1910.1200) 或类似定义界定的“物品”不属于这一制度的范围。[Rev.8 (2019) Part 1.3.2.1.1]



## > GHS 标签要素

象形图 不适用

信号词 **不适用**

## > 危险性说明

不适用

## > 防范说明

### 预防措施

不要打开或拆卸电池。  
不要暴露于高温或明火。  
不要混合使用不同大小、化学性质或类型的电池。  
避免使用外力撞击电池。

### 事故响应

不适用

### 安全储存

储存在阴凉、干燥、通风的库房中。

### 废弃处置

按照地方/区域/国家/国际规章处置内装物/容器。

## 第三部分 成分/组成信息

组分	含量 (质量分数, %)	CAS No.	EC No.
磷酸铁锂	30~40	15365-14-7	-
石墨	10~30	7782-42-5	231-955-3
铜箔	< 10	7440-50-8	231-159-6
铝箔	< 10	7429-90-5	231-072-3
电解液	15~25	-	-
隔离膜	< 5	-	-

## 第四部分 急救措施

### > 急救措施描述

#### 一般性建议

急救措施通常是需要的, 请将本 SDS 出示给到达现场的医生。

#### 眼睛接触

用大量水彻底冲洗至少 15 分钟。如有不适, 就医。

#### 皮肤接触

立即脱去污染的衣物。用大量肥皂水和清水冲洗皮肤。如有不适, 就医。

#### 食入

禁止催吐, 切勿给失去知觉者从嘴里喂食任何东西。立即呼叫医生或中毒控制中心。

#### 吸入

立即将患者移到新鲜空气处, 保持呼吸畅通。如果呼吸困难, 给予吸氧。如患者食入或吸入本物质, 不得进行口对口人工呼吸。如果呼吸停止。立即进行心肺复苏术。立即就医。

#### 急救人员的防护

确保医护人员了解产品的危害特性, 并采取自身防护措施, 以保护自己和防止污染传播。

> **最重要的症状和影响，急性的和滞后的**

- 1 有限的证据表明反复或长期职业接触可能会产生涉及器官或生化系统累积性的健康影响。

> **紧急医疗处理和特殊处理的说明**

- 1 根据出现的症状进行针对性处理。
- 2 注意症状可能会出现延迟。



## 第五部分 消防措施

> **灭火介质**

**合适的灭火介质** 干粉、二氧化碳或耐醇泡沫。

**不合适的灭火介质** 避免用太强烈的水汽灭火，因为它可能会使火苗蔓延分散。

> **源于此物质或混合物的特别危害**

- 1 加热时，容器可能爆炸。
- 2 暴露于火中的容器可能会通过压力安全阀泄漏出内容物。
- 3 受热或接触火焰可能会产生膨胀或爆炸性分解。

> **对消防人员的建议**

- 1 灭火时，应佩戴呼吸面具（符合 MSHA/NIOSH 要求的或相当的）并穿上全身防护服。
- 2 在安全距离处、有充足防护的情况下灭火。
- 3 防止消防水污染地表和地下水系统。

## 第六部分 泄漏应急处理

> **作业人员防护措施，防护设备和紧急处理程序**

- 1 保证充分的通风。清除所有点火源。
- 2 迅速将人员撤离到安全区域，远离泄漏区域并处于上风方向。
- 3 使用个人防护装备。避免吸入蒸气、烟雾、气体或风尘。

> **环境保护措施**

- 1 在确保安全的情况下，采取措施防止进一步的泄漏或溢出。
- 2 避免排放到周围环境中。

> **泄漏化学品的收容、清除方法及所使用的处置材料**

- 1 少量泄漏时，可采用干砂或惰性吸附材料吸收泄漏物，大量泄漏时需筑堤控制。
- 2 附着物或收集物应存放在合适的密闭容器中，并根据当地相关法律法规废弃处置。
- 3 清除所有点火源，并采用防火花工具和防暴设备。

## 第七部分 操作与储存

> **操作注意事项**

- 1 在通风良好处进行操作。
- 2 穿戴合适的个人防护用具。



- 3 避免接触皮肤和进入眼睛。
- 4 远离热源、火花、明火和热表面。
- 5 采取措施防止静电积累。

#### > 储存注意事项

- 1 保持容器密闭。
- 2 储存在干燥、阴凉和通风处。
- 3 远离热源、火花、明火和热表面。
- 4 存储于远离不相容材料和食品容器的地方。

## 第八部分 接触控制/个人防护

#### > 控制参数

##### 职业接触限值

组分	国家/地区	职业接触限值 (8h)		职业接触限值 (短时间)	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
石墨 7782-42-5	美国-OSHA	-	15	-	-
	韩国	-	2	-	-
	爱尔兰	-	10	-	-
	德国(DFG)	-	4	-	-
	丹麦	-	2.5	-	5
	澳大利亚	-	3 (4)	-	-
铜箔 7440-50-8	荷兰	-	0.1	-	-
	波兰	-	0.2	-	-
	拉脱维亚	-	0.5	-	1
	德国(DFG)	-	0.01	-	0.02
铝箔 7429-90-5	美国-OSHA	-	15	-	-
	韩国	-	10	-	-
	爱尔兰	-	1	-	-
	德国(DFG)	-	4	-	-
	丹麦	-	5	-	10
	澳大利亚	-	10	-	-

##### 生物限值

无资料

##### 监测方法

- 1 EN 14042 工作场所空气 用于评估暴露于化学或生物试剂的程序指南。
- 2 GBZ/T 160 工作场所空气有毒物质测定 (系列有效标准) 以及 GBZ/T 300 工作场所空气有毒物质测定 (系列标准)。

#### > 工程控制

- 1 保持充分的通风, 特别在封闭区内。
- 2 确保在工作场所附近有洗眼和淋浴设施。
- 3 使用防爆电器、通风、照明等设备。
- 4 设置应急撤离通道和必要的泄险区。

#### > 个人防护装备

眼睛防护	佩戴化学护目镜（符合欧盟 EN 166 或美国 NIOSH 标准）。
手部防护	戴化学防护手套（例如丁基橡胶手套）。建议选择经过欧盟 EN 374 或美国 US F739 或 AS/NZS 2161.1 标准测试的防护手套。
呼吸系统防护	如果蒸气浓度超过职业接触限值或发生刺激等症状时，请使用全面罩式多功能防毒面具（US）或 AXBEK 型（EN 14387）防毒面具筒。
皮肤和身体防护	穿阻燃防静电防护服和抗静电的防护靴。



## 第九部分 物化特性

外观与性状：聚合物锂离子电池，单独包装	气味：无资料
气味阈值：无资料	pH 值：无资料
熔点/凝固点(°C)：无资料	初始沸点和沸腾范围(°C)：无资料
闪点(°C)(闭杯)：不适用	蒸发速率：不适用
易燃性（固体或气体）：无资料	爆炸上限 / 下限[%(v/v)]：上限：无资料；下限：无资料
蒸汽压力(KPa)：不适用	相对蒸气密度(空气=1)：不适用
相对密度(水=1)：无资料	可溶性：无资料
正辛醇/水分配系数：无资料	自燃温度(°C)：无资料
分解温度(°C)：无资料	运动粘度(mm <sup>2</sup> /s)：不适用
颗粒特征：无资料	

## 第十部分 稳定性和反应性

反应性	与不相容物质接触可发生分解或其它化学反应。
化学稳定性	在正确的使用和存储条件下是稳定的。
危险反应的可能性	与金属乙炔化合物的混合物在加热时，发生燃烧或白炽化。与卤素、卤间化合物及其他强氧化剂发生猛烈反应，或引起爆炸。超细粉末在空气室温下就会自燃。
应避免的条件	不相容物质，热、火焰和火花。
不相容材料	金属乙炔化合物、卤素及卤间化合物、卤素的氧化物、硝酸、氧化氮、硝酸盐、亚硝酸盐、卤素含氧酸盐、铬酸盐、高锰酸盐、无机过氧化物、金属氧化物和过氧甲酸。卤素、卤间化合物、强氧化剂、非金属、水和酸。氧化剂、卤素、卤间化合物和汞。
危险的分解产物	在正常的储存和使用条件下，不会产生危险的分解产物。

## 第十一部分 毒理学信息

- > 急性毒性  
无资料
- > 皮肤腐蚀/刺激  
无资料
- > 严重眼损伤/刺激  
无资料
- > 皮肤致敏



无资料

## &gt; 呼吸致敏

无资料

## &gt; 生殖细胞致突变性

无资料

## &gt; 致癌性

ID	CAS No.	组分	IARC	NTP
1	15365-14-7	磷酸铁锂	未列入	未列入
2	7782-42-5	石墨	未列入	未列入
3	7440-50-8	铜箔	未列入	未列入
4	7429-90-5	铝箔	未列入	未列入
5	-	电解液	未列入	未列入
6	-	隔离膜	未列入	未列入

## &gt; 生殖毒性

无资料

## &gt; 生殖毒性附加危害

无资料

## &gt; 特异性靶器官系统毒性-单次接触

无资料

## &gt; 特异性靶器官系统毒性-反复接触

无资料

## &gt; 吸入危害

无资料

## 第十二部分 生态学信息

## &gt; 急性水生毒性

组分	CAS No.	鱼类	甲壳纲动物	藻类/水生植物
铝箔	7429-90-5	LC <sub>50</sub> :1.55mg/L (96h)(鱼)	无资料	无资料
铜箔	7440-50-8	LC <sub>50</sub> : 0.665mg/L (96h)(鱼)	EC <sub>50</sub> : 0.02mg/L (48h)	ErC <sub>50</sub> : 7.9mg/L (96h)

## &gt; 慢性水生毒性

无资料

## &gt; 其他信息

持久性和降解性

无资料

生物富集或生物积累性	无资料
土壤中的迁移性	无资料
PBT 和 vPvB 的结果评价	磷酸铁锂不符合欧盟 (EC) No 1907/2006 法规附件 XIII 中 PBT 和 vPvB 的分类标准。 石墨不符合欧盟 (EC) No 1907/2006 法规附件 XIII 中 PBT 和 vPvB 的分类标准。 铜箔不符合欧盟 (EC) No 1907/2006 法规附件 XIII 中 PBT 和 vPvB 的分类标准。 铝箔不符合欧盟 (EC) No 1907/2006 法规附件 XIII 中 PBT 和 vPvB 的分类标准。



### 第十三部分 废弃处置

废弃化学品 污染包装物	处置之前应参阅国家和地方有关法规。建议用焚烧法处置。 包装物清空后仍可能存在残留物危害，应远离热和火源，如有可能返还给供应商循环使用。
废弃注意事项	请参阅废弃化学品和污染包装物部分。

### 第十四部分 运输信息

运输标签	
海洋污染物	无
联合国危险货物编号 (UN No.)	3480
联合国正确运输名称	锂离子电池组 (包括聚合物锂离子电池)
运输主要危险类别	9
运输次要危险类别	无
包装类别	包装必须符合 II 类包装性能水平
报告备注	根据联合国《关于危险货物运输的建议书 规章范本》规定，锂电池需通过 UN38.3 测试，才能按照本报告分类结论进行运输。

### 第十五部分 法规信息

#### > 国际化学品名录

组分	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
磷酸铁锂	√	√	√	×	×	×	√	×	×
石墨	√	√	√	√	√	√	√	√	×
铜箔	√	√	√	√	√	√	√	√	×
铝箔	√	√	√	√	√	√	√	√	×
电解液	×	×	×	×	×	×	×	×	×
隔离膜	×	×	×	×	×	×	×	×	×

【EINECS】 欧洲现有化学物质名录

【TSCA】 美国 TSCA 化学物质名录

【DSL】 加拿大国内化学物质名录

【IECSC】 中国现有化学物质名录

【NZIoC】 新西兰现有暂用的化学物质名录

【PICCS】 菲律宾化学品和化学物质名录



- 【KECI】 韩国现有化学物质名录
- 【AICS】 澳大利亚现有化学品物质名录
- 【ENCS】 日本现有和新化物质名录

注

- "√" 表示该物质列入法规
- "x" 表示暂无资料或未列入法规

## 第十六部分 其他信息

编制日期	2021/06/16
修订日期	2021/06/16
修订原因	-

### > 免责声明

本安全数据单格式符合联合国 GHS 制度第八修订版要求，数据来源于国际权威数据库和企业提交的数据，其它的信息是基于公司目前所掌握的知识。我们尽量保证其中所有信息的正确性，但由于信息来源的多样性以及本公司所掌握知识的局限性，本文件仅供使用者参考。安全数据单的使用者应根据使用目的，对相关信息的合理性做出判断。我们对该产品操作、存储、使用或处置等环节产生的任何损害，不承担任何责任。



## Design Report of Safety Data Sheet

Report No.: DG2149363E

Date: 2021/06/16

<b>Name of the sample</b>	Rechargeable Lithium iron Phosphate Cell FFH3B3 3.2V 100Ah 320Wh		
<b>Applicant</b>	Wuhu ETC Battery Limited		
<b>Supplier</b>	Wuhu ETC Battery Limited		
<b>Composition of the sample</b>	Lithium Iron Phosphate: 30%~40%; Graphite: 10%~30%; Copper foil: < 10%; Aluminium foil: < 10%; Electrolyte: 15%~25%; Separator: < 5%		
<b>Warranty of Design</b>	GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Eighth revised edition		
Design Result of SDS please see next page.			
<b>Designer</b>	华雯	<b>Approver</b>	王红松

Notes: This SDS is valid before the implementation of the ninth revised edition GHS.





## Terms of the Using of the Report

1. The report is issued by DPTC according to the information of the chemicals and the information of its shipping provided by the applicant (shipper or his agent).
2. According to the demand of this SDS, DPTC requires the applicant to provide true and exact sample and data.
3. Information from applicant is the key of this Label, so the center will not respond for the wrong of applicant.
4. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.
5. This report will be effective only after it is signed by the inspector, approver and stamped by DPTC.
6. Our center guarantees the objectivity and fairness of this report, and carries out confidentiality obligations on business secrets such as business information, technical documents and so on.
7. The partly duplicating of this report is prohibited without the written approver of DPTC.
8. The report is invalid when anything of the following happens-illegal transfer, embezzlement, imposture, modification or tampering in any media form.
9. The authenticity of the certificate can be checked by scanning the QR code of this certificate.



# SAFETY DATA SHEET

## Rechargeable Lithium iron Phosphate

### Cell FFH3B3 3.2V 100Ah 320Wh

Wuhu ETC Battery Limited

SDS



- According to GHS (Eighth Revised Edition)

## Section 1 Product and Company Identification

### > Product Identifier

Product Name	Rechargeable Lithium iron Phosphate Cell FFH3B3 3.2V 100Ah 320Wh
Synonyms	-
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable

### > Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

### > Details of the Supplier of the Safety Data Sheet

Applicant Name	Wuhu ETC Battery Limited
Application Address	No.88 Wumeishan Road, YiJiang District, Wuhu, Anhui, China
Applicant Post Code	241000
Applicant Telephone	+86-553-2672266
Applicant Fax	+86-553-2672251
Applicant E-mail	chenchen@etcbattery.com
Supplier Name	Wuhu ETC Battery Limited
Supplier Address	No.88 Wumeishan Road, YiJiang District, Wuhu, Anhui, China
Supplier Post Code	241000
Supplier Telephone	+86-553-2672266
Supplier Fax	+86-553-2672251
Supplier E-mail	chenchen@etcbattery.com

### > Emergency Phone Number

Emergency Phone Number	+86-553-2672266
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## Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the eighth revised edition):

### > GHS Hazard Class

This product meets the definition of an article. Under the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), "Articles" as defined in the Hazard Communication Standard (29 CFR 1910.1200) of the Occupational Safety and Health Administration of the United States of America, or by similar definition, are outside the scope of the system. [Rev.8 (2019) Part 1.3.2.1.1]



## > GHS Label Elements

**Pictogram** Not applicable

**Signal Word** **Not applicable**

## > Hazard Statements

Not applicable

## > Precautionary Statements

### Prevention

Do not open or disassemble.

Do not expose to high temperatures or open fire.

Do not mix with batteries of varying sizes, chemistries or types.

Avoid using external impact battery.

### Response

Not applicable

### Storage

Store under roof in cool, dry, well-ventilated areas.

### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

## Section 3 Composition/Information on Ingredients

Component	Concentration (weight percent, %)	CAS No.	EC No.
Lithium Iron Phosphate	30~40	15365-14-7	-
Graphite	10~30	7782-42-5	231-955-3
Copper foil	< 10	7440-50-8	231-159-6
Aluminium foil	< 10	7429-90-5	231-072-3
Electrolyte	15~25	-	-
Separator	< 5	-	-

## Section 4 First Aid Measures

### > Description of First Aid Measures

#### General Advice

Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

#### Eye Contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

#### Skin Contact

Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

#### Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.



**Inhalation** Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

**Protecting of First-aiders** Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> **Most Important Symptoms and Effects, both Acute and Delayed**

- 1 Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

> **Indication of Any Immediate Medical Attention and Special Treatment Needed**

- 1 Treat symptomatically.
- 2 Symptoms may be delayed.

## Section 5 Fire Fighting Measures

> **Extinguishing Media**

**Suitable Extinguishing Media** Dry chemical, carbon dioxide or alcohol-resistant foam.

**Unsuitable Extinguishing Media** Do not use a solid water stream as it may scatter or spread fire.

> **Specific Hazards Arising from the Substance or Mixture**

- 1 Containers may explode when heated.
- 2 Fire exposed containers may vent contents through pressure relief valves.
- 3 May expansion or decompose explosively when heated or involved in fire.

> **Advice for Firefighters**

- 1 As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
- 2 Fight fire from a safe distance, with adequate cover.
- 3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Section 6 Accidental Release Measure

> **Personal Precautions, Protective Equipment and Emergency Procedures**

- 1 Ensure adequate ventilation. Remove all sources of ignition.
- 2 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
- 3 Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

> **Environmental Precautions**

- 1 Prevent further leakage or spillage if safe to do so.
- 2 Discharge into the environment must be avoided.

> **Methods and Materials for Containment and Cleaning Up**

- 1 Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
- 2 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
- 3 Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## Section 7 Handling and Storage

### > Precautions for Handling

- 1 Handling is performed in a well ventilated place.
- 2 Wear suitable protective equipment.
- 3 Avoid contact with skin and eyes.
- 4 Keep away from heat/sparks/open flames/ hot surfaces.
- 5 Take precautionary measures against static discharges.

### > Precautions for Storage

- 1 Keep containers tightly closed.
- 2 Keep containers in a dry, cool and well-ventilated place.
- 3 Keep away from heat/sparks/open flames/ hot surfaces.
- 4 Store away from incompatible materials and foodstuff containers.



## Section 8 Exposure Controls/Personal Protection

### > Control Parameters

#### Occupational Exposure Limit Values

Component	Country/Region	Limit Value - Eight Hours		Limit Value - Short Term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Graphite 7782-42-5	USA - OSHA	-	15	-	-
	South Korea	-	2	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	2.5	-	5
	Australia	-	3 (4)	-	-
Copper foil 7440-50-8	The Netherlands	-	0.1	-	-
	Poland	-	0.2	-	-
	Latvia	-	0.5	-	1
	Germany (DFG)	-	0.01	-	0.02
Aluminium foil 7429-90-5	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	1	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	5	-	10
	Australia	-	10	-	-

#### Biological Limit Values

No information available

#### Monitoring Methods

- 1 EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
- 2 GBZ/T 160 Determination of toxic substances in workplace air (Series effective standard) and GBZ/T 300 Determination of toxic substances in workplace air (Series standard).

### > Engineering Controls



- 1 Ensure adequate ventilation, especially in confined areas.
- 2 Ensure that eyewash stations and safety showers are close to the workstation location.
- 3 Use explosion-proof electrical/ventilating/lighting/equipment.
- 4 Set up emergency exit and necessary risk-elimination area.

### > Personal Protection Equipment

<b>Eye Protection</b>	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
<b>Hand Protection</b>	Wear protective gloves ( such as butyl rubber ) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
<b>Respiratory protection</b>	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
<b>Skin and Body Protection</b>	Wear fire/flame resistant/retardant clothing and antistatic boots.

## Section 9 Physical and Chemical Properties

<b>Appearance:</b> Polymer Lithium Battery, individually packaged	<b>Odor:</b> No information available
<b>Odor Threshold:</b> No information available	<b>pH:</b> No information available
<b>Melting Point/Freezing Point (°C):</b> No information available	<b>Initial Boiling Point and Boiling Range (°C):</b> No information available
<b>Flash Point (°C)( Closed Cup):</b> Not applicable	<b>Evaporation Rate:</b> Not applicable
<b>Flammability:</b> No information available	<b>Upper/lower explosive limits[%(v/v)]:</b> Upper limit : No information available ; Lower limit : No information available
<b>Vapor Pressure (KPa):</b> Not applicable	<b>Relative Vapour Density(Air = 1):</b> Not applicable
<b>Relative Density(Water=1):</b> No information available	<b>Solubility:</b> No information available
<b>n-Octanol/Water Partition Coefficient:</b> No information available	<b>Auto-Ignition Temperature(°C):</b> No information available
<b>Decomposition Temperature (°C):</b> No information available	<b>Kinematic Viscosity (mm<sup>2</sup>/s):</b> Not applicable
<b>Particle characteristics:</b> No information available	

## Section 10 Stability and Reactivity

<b>Reactivity</b>	Contact with incompatible substances can cause decomposition or other chemical reactions.
<b>Chemical Stability</b>	Stable under proper operation and storage conditions.
<b>Possibility of Hazardous Reactions</b>	Mixtures with metallic acetylene, when heated, cause a fire or incandescence.
<b>Hazardous Reactions</b>	Reacts severely with halogens, interhalogens or other strong oxidants, or causes a fire. Ultrafine powder will self-ignite in the air at room temperature.
<b>Conditions to Avoid</b>	Incompatible materials, heat, flame and spark.
<b>Incompatible Materials</b>	Metal acetylide, halogen, interhalogen, halogen oxides, nitric acid, nitrous oxide, nitrates, nitrites, halogen oxyacid salts, chromates, permanganates, inorganic peroxides, metal oxides and peroxyformic acid. Halogen, interhalogen, strong oxidant, water and acids. Oxidants, halogen, interhalogen and mercury.
<b>Hazardous</b>	Under normal conditions of storage and use, hazardous decomposition



**Decomposition products** products should not be produced.

## Section 11 Toxicological Information

### > Acute Toxicity

No information available

### > Skin Corrosion/Irritation

No information available

### > Serious Eye Damage/Irritation

No information available

### > Skin Sensitization

No information available

### > Respiratory Sensitization

No information available

### > Germ Cell Mutagenicity

No information available

### > Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	15365-14-7	Lithium Iron Phosphate	Not Listed	Not Listed
2	7782-42-5	Graphite	Not Listed	Not Listed
3	7440-50-8	Copper foil	Not Listed	Not Listed
4	7429-90-5	Aluminium foil	Not Listed	Not Listed
5	-	Electrolyte	Not Listed	Not Listed
6	-	Separator	Not Listed	Not Listed

### > Reproductive Toxicity

No information available

### > Reproductive Toxicity (Additional)

No information available

### > STOT-Single Exposure

No information available

### > STOT-Repeated Exposure

No information available

### > Aspiration Hazard

No information available



## Section 12 Ecological Information

### > Acute Aquatic Toxicity

Component	CAS No.	Fish	Crustaceans	Algae
Aluminium foil	7429-90-5	LC <sub>50</sub> : 1.55mg/L (96h)(Fish)	No information available	No information available
Copper foil	7440-50-8	LC <sub>50</sub> : 0.665mg/L (96h)(Fish)	EC <sub>50</sub> : 0.02mg/L (48h)	ErC <sub>50</sub> : 7.9mg/L (96h)

### > Chronic Aquatic Toxicity

No information available

### > Others

#### Persistence and Degradability

No information available

#### Bioaccumulative Potential

No information available

#### Mobility in Soil

No information available

#### Results of PBT and vPvB Assessment

Lithium Iron Phosphate does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Graphite does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Copper foil does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Aluminium foil does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

## Section 13 Disposal Considerations

#### Waste Chemicals

Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

#### Contaminated Packaging Disposal Recommendations

Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible. Refer to Waste chemicals and Contaminated packaging.

## Section 14 Transport Information

#### Transporting Label



#### Marine pollutant

None

#### UN Number

3480

#### UN Proper Shipping Name

LITHIUM ION BATTERIES(including lithium ion polymer batteries)



<b>Transport Hazard Class</b>	9
<b>Transport Subsidiary Hazard Class</b>	NONE
<b>Packing Group</b>	Packagings shall conform to the packing group II performance level
<b>Report remarks</b>	According to United Nations Recommendations on the Transport of Dangerous Goods•Model Regulations, Lithium batteries could be transported in accordance with the classification conclusions of this report when meet the requirements of UN38.3 test.

## Section 15 Regulatory Information

### > International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Lithium Iron Phosphate	√	√	√	×	×	×	√	×	×
Graphite	√	√	√	√	√	√	√	√	×
Copper foil	√	√	√	√	√	√	√	√	×
Aluminium foil	√	√	√	√	√	√	√	√	×
Electrolyte	×	×	×	×	×	×	×	×	×
Separator	×	×	×	×	×	×	×	×	×

【EINECS】 European Inventory of Existing Commercial Chemical Substances.

【TSCA】 United States Toxic Substances Control Act Inventory.

【DSL】 Canadian Domestic Substances List.

【IECSC】 China Inventory of Existing Chemical Substances.

【NZIoC】 New Zealand Inventory of Chemicals.

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances.

【KECI】 Existing and Evaluated Chemical Substances.

【AICS】 Australia Inventory of Chemical Substances.

【ENCS】 Existing And New Chemical Substances.

#### Note

"√" Indicates that the substance included in the regulations

"×" That no data or included in the regulations

## Section 16 Additional Information

**Creation Date** 2021/06/16

**Revision Date** 2021/06/16

**Reason for Revision** -

### > Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 8th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user' s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.