杭州海关技术中心
国家危险化学品检测重点实验室（浙江）

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正本/ORIGIN

编号：TCH24025797
No：TCH24025797
日期：2024-10-23
Date：2024-10-23

ZAIQ-RF(HH)-01-19

Safety Data Sheet

扫描查看在线报告

Applicant name：Pylon Technologies Co., Ltd.

Product Name: Lithium Iron Phosphate Battery Energy Storage System PowerCube-20H-M7A200C5.015-EU-05 1331.2V 3768Ah 5.015MWh

Edit date: 2024-10-23

Edit institution: Technology Center of Hangzhou Customs District

Approver：

1. Unless other wise stated, this test report is only responsible for the sample(s).
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声　明

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1. Identification of substance

Product Name	Lithium Iron Phosphate Battery Energy Storage System PowerCube-20H-M7A200C5.015-EU-05 1331.2V 3768Ah 5.015MWh
Other Name	None
Chemical Name	None
Recommended Use	Used in Industrial and Commercial energy storage
Manufacturer	Anhui Pylon Technologies Co., Ltd.
Address	Intersection of Daqianshan Road and Gaocheng Road, Economic Development Zone, Feixi County, Hefei, Anhui Province, China
Supplier	Pylon Technologies Co., Ltd.
Address	No.300, Miaoqiao Road, Kangqiao Town, Pudong New Area, Shanghai, China / 201315
Phone Number	+86-021-5131 7699
Fax Number	None
WEB or E-mail	sales@pylontech.com.cn
Emergency Phone Number	+86-021-5131 7699 or Call your nearest poison control centre

2. Hazards identification

GHS classification	The product meets the definition of "article". In the Globally Harmonized system of Classification and Labeling of Chemicals (GHS), the "articles" defined by the US Occupational Safety and Health Administration "Hazard Communication Standard" (29 CFR 1910.1200) or similar definitions do not fall within the scope of this system. [Rev. 10 (2023) Part 1.3.2.1.1]. According to GHS system (10th revised edition), not classified as a hazardous chemical.
GHS Pictograms	—
Signal words	—
Hazard statements	—
Precautionary Statement Prevention	—
Precautionary Statement Response	—
Precautionary Statement Storage	—
Precautionary Statement Disposal	—
Other hazards which do not result in classification	Not available.

3. Composition/information on ingredients

☐**Substances**

√ **Mixtures**

Component Information

Component	**CAS number**	**EINECS number**	**Mass(%wt)**
Lithium Iron Phosphate (LFP)	15365-14-7	604-917-2	40.5
Graphite	7782-42-5	231-955-3	25
Electrolyte (EMC/EC/PC/LiPF6)	——	——	20
Copper	7440-50-8	231-159-6	8.5
Aluminium	7429-90-5	231-072-3	6

4.First-aid measures

NOTE TO PHYSICIAN	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation.
After inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Get immediate medical attention.
After skin contact	In case of contact with substances in the battery, immediately flush skin thoroughly with soap and plenty of water. Remove and isolate contaminated clothing and shoes. If irritation persists, get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
After eye contact	In case of contact with substances in the battery, immediately flush eyes with plenty of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get medical attention immediately.
After ingestion	Rinse mouth. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Loosen tight clothing such as a collar, tie, belt or waistband. Do not use mouth-to-mouth method if victim ingested the substance. Seek immediate medical attention.
Most important symptoms / effects, acute and delayed	The battery's electrolyte can irritate skin, eyes, and mucosal tissues.

5. Fire-fighting measures

Suitable extinguishing agents	Water (cooling), use a HFC (hydrofluorocarbon) clean-agent fire extinguisher or alcohol resistant foam fire extinguishers. Heptafluoropropane and perfluorohexanone have better extinguishing effects.
Special hazards caused by the material, its products of combustion or flue gases	Cell may vent when subjected to excessive heat-exposing battery contents. Can be released in case of fire: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen fluoride, hydrogen cyanide, benzene, toluene, methane, lithium oxide fumes, phosphorus

	oxides, irritating and toxic fumes and gases.
Protective equipment for fire-fighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask, insulating gloves, insulating boots, etc.

6. Accidental release measures

Person-related safety precautions	If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Avoid skin and eye contact or inhalation of vapors.
Measures for environmental protection	Prevent further leakage or spillage if safe to do so. Do not allow material to be released to the environment without proper governmental permits.
Measures for cleaning/collecting	If batteries show signs of leaking, avoid skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean up. Mix with inert material (e.g. dry sand, vermiculite) and transfer to sealed container for disposal.
Additional information	See Section 7 for information on safe handling See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

7. Handling and storage

Handling

Information for safe handling	Operators should be trained and strictly abide by the operating procedures. It is recommended that operators wear general protective clothing and safety gloves. Keep away from fire, heat source and direct sunlight. Smoking is strictly prohibited in the workplace. Provide ventilation systems and equipment in the workplace. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse. More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, rubber gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. Store separately from strong oxidizing agents, corrosives.
Information about protection against explosions and fires	Avoid mechanical and electrical abuse. Do not short circuit or install incorrectly. Batteries may explode or cause burns if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in

accordance with equipment instructions.

STORAGE

Requirements to be met by storerooms and containers	The product should be stored in a clean, dry and well-ventilated environment with an ambient temperature of -30 ℃ ~ 60 ℃ and relative humidity ≤75%, and should be away from fire and heat sources (not less than 2m). Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods. Charge and discharge once every 3 months when not used for a long time, and adjust the battery SOC to 30% ~ 50%.
Information about storage in one common storage facility	Store in a cool, well-ventilated area. Keep away from fire, heat source and direct sunlight. The batteries shall be securely attached to the interior structure of the cargo transport unit (e.g. by means of placement in racks, cabinets, etc.) in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Incompatible materials: strong oxidizing agents, flammables, explosive material, corrosives, harmful substances, etc.
Further information about storage conditions	The storage area shall be equipped with corresponding types and quantities of fire-fighting equipment, leakage emergency treatment equipment and appropriate containment materials.

8. Exposure controls/personal protection

Limit Values for Exposure

Component	**CAS number**	**ACGIH TLV-TWA**	**ACGIH TLV-STEL**	**NIOSH REL-TWA**	**NIOSH REL-STEL**
Lithium Iron Phosphate (LFP)	15365-14-7	N.E.	N.E.	N.E.	N.E.
Graphite	7782-42-5	2mg/m^3	N.E.	2.5mg/m^3	N.E.
Electrolyte (EMC/EC/PC/LiPF6)	——	——	——	——	——
Copper	7440-50-8	0.2 mg/m^3	N.E.	1 mg/m^3	N.E.
Aluminium	7429-90-5	1mg/m^3	N.E.	10mg/m^3 (total) 5mg/m^3 (resp)	N.E.

Appropriate engineering controls	Use ventilation system and equipment. In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Provide safety shower and eye wash equipment.
General protective and hygienic measures	Not necessary under conditions of normal use. Personal protection is recommended for venting battery. No smoking,

	drinking and eating at working site. Wash thoroughly after handling.
Personal protective equipment	Personal protection is recommended for venting battery: respiratory protection, protective gloves, protective clothing and safety glass with side shields.
Breathing equipment	When workers are facing high concentrations they must use appropriate certified respirators. Respiratory protection is not necessary under conditions of normal use.
Protection of hands	Not necessary under conditions of normal use.
Eye/Face protection	If necessary, wear safety glasses and safety masks.
Body protection	Full set of anti chemical reagent overalls, flame retardant antistatic protective clothing, choose body protection according to the amount and concentration of the dangerous substance at the work place.

Note: 1. N.E. means not established.

9.Physical and chemical properties

Physical state	Rechargeable Lithium-ion Battery System PowerCube, has a white prismatic appearance and is composed of 12 battery assemblies (PowerCube-M7A-200-166.4/1331.2V-E15) in parallel. The appearance of the Battery assembly (PowerCube-M7A-200-166.4 /1331.2V-E15) is white and black prismatic, consisting of 8 Lithium-ion battery modules HM7A200L connected in series. The appearance of the lithium-ion battery pack HM7A200L is black prismatic. Size (L*W*H), 6058*2438*2896 (mm) Weight, 42T
Colour	No data available
Odour	Odourless
Melting point/freezing point	No data available
Boiling point or initial boiling point and boiling range	No data available
Flammability	No data available
Lower and upper explosion limit/ flammability limit	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
pH	No data available
Kinematic viscosity	No data available

Solubility	No data available
Partition coefficient: n-octanol/water(log value)	No data available
Vapour pressure	No data available
Density and/or relative density (water=1)	No data available
Relative vapour density (air=1)	No data available
Particle characteristics	No data available

10. Stability and reactivity

Reactivity	No data available.
Chemical stability	This is a stable product under recommended storage conditions.
Possibility of hazardous reactions	No polymerization.
Conditions to avoid (e.g. static discharge, shock or vibration)	Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature, direct sunlight, high humidity, immerse in water or overcharge, etc. Avoid excessive vibration, external impact, and falling from heights, etc.
Incompatible materials	Explosives, flammables, strong oxidants and corrosives. If leaked, forbidden to contact with strong oxidising agents, mineral acids, strong alkalis, etc.
Hazardous decomposition products	May include metal oxides, carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen fluoride, hydrogen cyanide, benzene, toluene, methane, phosphorus oxides and other toxic smoke and gas.

11.Toxicological information

Routes of Entry: Dermal contact, eye contact, inhalation, ingestion.

Acute Toxicity	LD50 (Oral, rat) N/A LC50 (Inhalation, rat) N/A LD50 (Dermal, rabbit) N/A
Skin corrosion/Irritation	The electrolyte may cause skin irritation.
Serious eye damage/irritation	The electrolyte may cause eye irritation.
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified

Chronic Effects	Not classified
Further Information	In the event of exposure to internal contents, moderate or severe irritation, burning and dryness of the skin may occur, and may damage the nerves of the target organs. No detailed toxicological study.

12. Ecological information

Ecotoxicity	
Aquatic Toxicity	Test & Species 96 Hr LC50 fish: N/A 48 Hr EC50 Daphnia: N/A 72 Hr EC50 Algae: N/A
Persistence and degradability	Not available
Bioaccumulative potential	Not available
Mobility in soil	Not available
Additional Information	May cause water or soil pollution.

13. Disposal considerations

WASTE DISPOSAL INSTRUCTIONS

Contact a qualified professional waste disposal service to dispose of this material.
Dispose of in accordance with local environmental regulations or local authority requirements.

14. Transport information

The Recommendation of Transport of Dangerous Goods (TDG)

UN Number	UN 3536
Proper Shipping Name	LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT
Class/Division	Class 9 Miscellaneous Dangerous Substances and Articles
Package Group	—
Subsidiary risk	—
labeling pictogram	

Note: The sample is a battery system with type PowerCube-20H-M7A200C5.015-EU-05, which contains 4992 cells in 12 parallels and 416 strings, a collection of battery modules with type HM7A200L. The battery modules (HM7A200L) have passed UN 38.3 each applicable testing. The battery modules do not equipped with battery overcharge protection, are only designed as a component in another battery or equipment which affords such protection. The battery assembly

	(PowerCube-20H-M7A200C5.015-EU-05, PowerCube-M7A-200-166.4 /1331.2V-E15) have been verified. Cells and batteries incorporate a safety venting device. Cells and batteries are properly protected to prevent short circuits and reverse currents, and have a high quality management programme can be transported as mentioned above. This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The lithium batteries shall meet the requirements of 2.9.4 (a) to (g) and contain the necessary systems to prevent overcharge and over discharge between the batteries. The batteries shall be securely attached to the interior structure of the cargo transport unit (e.g. by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings and vibrations nommally incident to transport. Dangerous goods necessary for the safe and proper operation of the cargo transport unit (e.g., fire extinguishing systems and air conditioning systems), shall be properly secured to or installed in the cargo transport unit and are not otherwise subject to these Regulations. Dangerous goods not necessary for the safe and proper operation of the cargo transport unit shall not be transported within the cargo transport unit. The batteries inside the cargo transport unit are not subject to marking or labelling requirements. The cargo transport umit shall display the UN number in accordance with 5.3.2.1.2 and be placarded on two opposing sides in accordance with 5.3.1.1.2. The containers have been certified by Lloyd's Register of Classification Society (China) Co., Ltd. The CSC approval number is GB-LR 28301-06/2024. (Accepting the certificate of Lloyd's Register of Classification Society (China) Co., Ltd, NO. SHI2481720).
Maritime transport IMDG	Being same with TDG Marine pollutant (Yes/No): No EmS No.: F-A, S-I According to 2.9.4.7 of IMDG Code (2022 Edition), except for button cells installed in equipment (including circuit boards), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.
Air transport ICAO-TI and IATA-DGR	Forbidden. According to 3.9.2.6.1 (g) of IATA DGR (65th Edition), except for button cells installed in equipment (including circuit boards), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 must make

available the test summary as specified in the UN Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

15. Regulatory information

European/International Regulations

OSHA:	Hazardous by definition of Hazard Communication Standard (29CFR 1910.1200).
EINECS Status:	Graphite, Copper, Aluminium are included in EINECS inventory.
EPA TSCA Status:	Lithium Iron Phosphate (LFP), Graphite, Copper, Aluminium are included in TSCA public inventory.
Canadian DSL/NDSL (Domestic Substances List/ Non-domestic Substances List):	Lithium Iron Phosphate (LFP), Graphite, Copper, Aluminium are included in DSL / NDSL.
HMIS (Hazardous Material Identification System Ratings):	Health: 1 Flammability: 0 Physical hazard: 0 Personal protection: F (4. Severe Hazard; 3. Serious Hazard; 2. Moderate Hazard; 1. Slight Hazard; 0. Minimal Hazard)
WHMIS (Canadian Workplace Hazardous Material Identification System Ratings):	B6 (Aluminium).
List of dangerous goods (GB 12268-2012)	None.

16. other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

This Material Safety Data Sheet was based on the "Globally Harmonized System of Classification and Labelling of Chemicals", "Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations","INTERNATIONAL MARITIME DANGEROUS GOODS CODE"," International Air Transport Association Dangerous Goods Regulations", the National Standards and other related dangerous chemicals management laws, regulations and standards, which are periodically updated and changed. To make dangerous goods / hazardous chemicals comply with the relevant requirements of the latest management, regularly update is recommended.

This Material Safety Data Sheet has been compiled in both English and Chinese. For any discrepancies, the Chinese version shall prevail.

Abbreviations and acronyms	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road RID: Regulations Concerning the International Transport of Dangerous Goods by Rail IMDG: International Maritime Code for Dangerous Goods IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA) ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO) EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent EC50: Effective concentration, 50 percent
Edit Date	23.10.2024
Update and Revise	Original edition
Edit Standard	*Globally Harmonized System of Classification and Labelling of Chemicals* Part 1.5
Revised Institution	Technology Center of Hangzhou Customs District

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化学品安全数据表

扫描查看在线报告

申请单位：上海派能能源科技股份有限公司

产品名称：储能电池系统 PowerCube-20H-M7A200C5.015-EU-05 1331.2V 3768Ah 5.015MWh

编制日期：2024-10-23

编制机构：杭州海关技术中心

批准人：

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1. 标识

产品名称	储能电池系统 PowerCube-20H-M7A200C5.015-EU-05 1331.2V 3768Ah 5.015MWh
英文名称	Lithium Iron Phosphate Battery Energy Storage System PowerCube-20H-M7A200C5.015-EU-05 1331.2V 3768Ah 5.015MWh
其他名称	无
化学名称	无
使用建议	用于工商业储能
生产商	安徽派能能源科技有限公司
地址	安徽省合肥市肥西县经济开发区大潜山路与皋城路交口路
供应商	上海派能能源科技股份有限公司
地址	上海市浦东新区康桥镇苗桥路 300 号/201315
固定电话	+86-21-5131 7699
传真	无
网址或电子邮件地址	sales@pylontech.com.cn
应急电话	+86-21-5131 7699 或向离你最近的解毒中心求助

2. 危险标识

GHS 危险性分类	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，美国职业安全和健康署“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. 10 (2023) Part 1.3.2.1.1]。根据 GHS 制度（第十修订版），未被归类为危险化学品。
GHS 危险标签	—
信号词	—
危险说明	—
防范说明	—
预防	
防范说明	—
反应	
防范说明	—
贮存	
防范说明	—
处置	
不导致分类的其他危险	未知。

3. 成分构成/成分信息

□物质

√混合物

成分信息

成分	**CAS 号**	**EINECS 号**	**含量(%wt)**
磷酸铁锂（专有）	15365-14-7	604-917-2	40.5
石墨	7782-42-5	231-955-3	25
电解液	——	——	20

(EMC/EC/PC/LiPF6)			
铜	7440-50-8	231-159-6	8.5
铝	7429-90-5	231-072-3	6

4.急救措施

对医师的建议	在呼吸急促的情况下，需给受害人输氧。保持受害人温暖。 让受害人处于观察监护下。
吸入后	转移到有新鲜空气的地方。如需要，须输氧或进行人工呼吸。马上就医。
皮肤接触后	若接触到电池内的物质，立即用肥皂和大量清水彻底冲洗皮肤。脱掉被污染的衣服和鞋子。如皮肤刺激仍继续：须求医。如原是小面积的皮肤接触，防止接触面积的扩大。污染的衣服在使用前，须单独清洗。
眼睛接触后	若接触到电池内的物质，立即用大量的水冲洗眼睛至少 15 分钟。用手指分开眼睑以保证充分冲洗眼睛。马上就医。
摄入后	漱口。无医师建议的情况下不要引吐。如果受害人需呕吐，使其前倾以减少倒吸的危险。解松过紧的衣物，如领子、领带、皮带或腰带。不要使用嘴对嘴的方法实施救助。马上就医。
主要的症状和影响，包括急性和迟发效应	电池的电解质会刺激皮肤、眼睛和黏膜组织。

5. 消防措施

合适的灭火剂	大量水（降温），可用 HFC（氢氟碳化合物）清洁剂灭火器或耐醇泡沫灭火器。七氟丙烷和全氟己酮对锂电池灭火效果较好。
由物质本身或其燃烧产物、烟气产生的特殊危险	当电芯暴露于过热的环境中时，安全阀可能会打开。 在发生火灾时可能释放：一氧化碳、二氧化碳、氮氧化物、氟化氢、氰化氢、苯、甲苯、甲烷、锂氧化物烟气，磷氧化物，刺激性有毒烟雾和气体。
消防人员的特殊防护设备	穿全套防护衣物，包括头盔，自给正压式呼吸器，防护服和面罩，绝缘手套、绝缘靴等。

6. 泄漏应急处理

与人相关的安全防范措施	如果电池内部材料泄露，操作人员应立刻撤离操作区直到烟气消散。将通风设备打开吹散危险性气体。避免皮肤和眼睛接触或吸入有害气体。
环境保护措施	如能做到应防止进一步的泄露和溢出。无相关政府许可，不允许把该物质释放到环境中。
清洁/收集措施	如果电池有泄漏迹象，避免皮肤或眼睛接触电池泄漏的材料。使用耐化学腐蚀的橡胶手套和不易燃的吸收性材料进行清洁。与惰性材料（如干沙，蛭石）混合并转移到密封的容器待处理。
附加说明	关于安全操作的信息见第 7 部分 关于个人防护设备的信息见第 8 部分 关于处置的信息见第 13 部分

7. 操作和存储

操作

安全操作的信息	操作人员应经过培训，严格遵守操作规程。建议操作人员穿一般作

	业防护服，戴安全手套。远离火种、热源，避免阳光直射。工作场所严禁吸烟。工作场所应有通风系统和设备。避免随意拆卸电池和弄错正负极。须牢固在内包装中，以有效防止短路和防止可导致短路的移动。万一电池内的物质泄漏，避免眼睛、皮肤直接接触，避免吸入。应与强氧化剂、腐蚀品分开存放。
防止爆炸和火灾的信息	避免机械和电气的滥用。不要短路或安装错误。 电池如果拆卸、压碎、充电或暴露在高温下，可能会发生爆炸和燃烧。按照设备说明书安装电池。
存储	
对储藏室和容器的要求	产品应贮存在环境温度为-30 ℃ ~ 60 ℃，相对湿度≤75%的清洁、干燥、通风的环境内，产品应远离火源和热源（不得少于 2m）。禁止物理或电滥用，禁止高温储存，最好将电池储存在阴凉、干燥、通风等温度变化较小的环境中。禁止将电池接触加热设备或将电池直接暴露于阳光中。长期不用时每 3 个月进行一次充放电，并将电池 SOC 调整至 30%～50%。
关于储藏在普通存储设施中的信息	储存于阴凉、通风的库房内。远离火种、热源，避免阳光直射。电池组应牢靠地固定于货物运输单元的内部结构物（例如设置在托架上或舱室内等等），以有效防止短路和防止可导致短路的移动。应与强氧化剂、易燃易爆、腐蚀品、有害物质等分开存放。
关于储藏条件进一步的信息	储存区配备相应品种和数量的消防器材、泄漏应急处理设备和合适的收容材料。

8. 暴露控制/人身保护

暴露限值

成分	**CAS 号**	**ACGIH 阈限值-时间加权平均浓度**	**ACGIH 阈限值-短时间接触限值**	**NIOSH 阈限值-时间加权平均浓度**	**NIOSH 阈限值-短时间接触限值**
磷酸铁锂（专有）	15365-14-7	N.E.	N.E.	N.E.	N.E.
石墨	7782-42-5	2mg/m^3	N.E.	2.5mg/m^3	N.E.
电解液 (EMC/EC/PC/LiPF6)	——	——	——	——	——
铜	7440-50-8	0.2 mg/m^3	N.E.	1 mg/m^3	N.E.
铝	7429-90-5	1mg/m^3	N.E.	10mg/m^3 (总尘) 5mg/m^3 (呼尘)	N.E.

减少接触的工程控制方法	有通风系统和设备。当电池排气阀打开时，应尽量使通风设备开至最大，避免将打开排气阀的电芯局限在某一狭窄空间内。提供安全淋浴和洗眼设备。
一般保护和卫生措施	正常使用条件下不需要。电池开阀试验时应做好个人防护。工作场所严禁吸烟、饮水和饮食。工作后，沐浴更衣。
个人防护用品	电池开阀试验时应做好个人防护，呼吸防护，防护手套，防护服和

	有护边的安全玻璃罩。
呼吸设备	当工人在高浓度的环境下工作时，必须使用合适的已认证的呼吸器。正常操作条件下，呼吸保护是不必要的。
双手保护	正常使用条件下不需要。
眼睛/面部保护	如需要，戴安全防护眼镜，安全防护面罩。
身体保护	全套防化学试剂工作服，阻燃防静电防护服，防护设备的类型必须根据特定工作场所中的危险物的浓度和含量来选择。
注:1. N.E. — 未建立。	

9.物理和化学特性

物理状态	该样品为集成电池组，外观为白色棱柱形，由 12 个锂离子电池模组 PowerCube-M7A-200-166.4/1331.2V-E15 并联组成。集成电池组 PowerCube-M7A-200-166.4/1331.2V-E15 外观为白色与黑色棱柱形，由 8 个锂离子电池模组 HM7A200L 串联组成。锂离子电池组 HM7A200L 外观为黑色棱柱形。 尺寸（长宽高）：6058*2438*2896（mm） 重量：42 T
颜色	无数据资料
气味	无味
熔点/凝固点	无数据资料
沸点或初始沸点和沸程	无数据资料
易燃性	无数据资料
上、下爆炸极限/易燃极限	无数据资料
闪点	无数据资料
自燃温度	无数据资料
分解温度	无数据资料
pH 值	无数据资料
运动粘度	无数据资料
溶解性	无数据资料
分配系数：正辛醇/水（对数值）	无数据资料
蒸汽压	无数据资料
密度和/或相对密度（水=1）	无数据资料
相对蒸气密度（空气=1）	无数据资料
颗粒特征	无数据资料

10. 稳定性和反应活性

反应性	无数据资料。
化学稳定性	在要求的贮存条件下，这是个稳定的产品。
有害反应的可能性	不聚合。
需避开的条件（如：静电放电，震动等）	火源、热源、拆卸、外部短路、压碎、变形、高温、阳光直射、高湿度、浸水或过充等。避免电池受到过高幅度的震动、外力冲击、高处跌落等。
不相容的物质	爆炸品、易燃物、强氧化剂和腐蚀剂。如果发生泄漏，避免与强氧

	化剂，无机酸，强碱等接触。
有害分解产物	可能包括金属氧化物，一氧化碳、二氧化碳、氮氧化物、氟化氢、氰化氢、苯、甲苯、甲烷、磷氧化物等有毒烟雾和气体。

11.毒理学信息

进入人体内的途径：皮肤接触、眼睛接触、吸入和摄入。

急性毒性	LD50（口服，大鼠）：未知 LC50（吸入，大鼠）：未知 LD50（皮肤，兔子）：未知
皮肤腐蚀/刺激	其中的电解质对皮肤有刺激性。
严重眼损伤/刺激	其中的电解质对眼睛有刺激性。
呼吸或皮肤敏化作用	未分类
生殖细胞致突变性	未分类
致癌性	未分类
生殖毒性	未分类
特定目标器官毒性-单次接触	未分类
特定目标器官毒性-重复接触	未分类
吸入危险	未分类
慢性影响	未分类
其他信息	万一发生与电芯内部材料接触的事故，轻微或严重的刺激，都可能使皮肤出现干燥和灼烧的感觉，并可能损坏靶器官的神经。无详细的毒理学研究。

12. 生态学信息

生态毒性

水生毒性

测试 & 物种
96 Hr LC50 鱼：未知
48 Hr EC50 溞类：未知
72 Hr EC50 藻类：未知

持久性和降解性	未知
潜在的生物累积性	未知
土壤中的迁移性	未知
其他信息	可能造成水或土壤污染。

13. 废弃处置

废物处置说明

联系一家有资质的专业废物处置机构来处置。
按照当地的环境法规或地方当局的要求来进行处置。

14. 运输信息

联合国《关于危险货物运输的建议书 规章范本》(TDG)

UN 编号	UN 3536
正式运输名称	装在货运装置中的锂电池组
危险类/项别	第 9 类 杂项危险物质和物品
包装类别	—
次要危险性	—

危险性标签	
	注：样品为型号 PowerCube-20H-M7A200C5.015-EU-05 的电池系统，内含 12 并 416 串共 4992 个电芯，是锂离子电池组 HM7A200L 的集合体，电池模组（HM7A200L）已通过 UN38.3 相应测试。该模组未安装过充电保护装置，按设计要求只用于作为另一带过充电保护装置电池组或设备的部件。集合电池组（PowerCube-M7A-200-166.4/1331.2V-E15, PowerCube-20H- M7A200C5.015-EU-05）已通过验证。锂电池需装有安全排气、防止外部短路以及防止反向电流造成危险所需的有效装置，并有高质量的管理方案才可按上述条目运输。 本条目仅适用于安装在货物运输单元内、设计上仅用作该货物运输单元外接电源的锂离子电池组或锂金属电池组。锂电池应满足 2.9.4（a）至（g）的要求，并带有能和防止过度充电和各电池组之间过度放电的必要系统。 电池组应牢靠地固定于货物运输单元的内部结构物（例如设置在托架上或舱室内等等），须能在运输中正常发生的冲击、装卸和震动条件下防止短路、意外启动，以及相对于货物运输单元的较大位移。货物运输单元安全和正常运行所必要的危险品（例如灭火系统和空调系统），应牢靠固定或安装在货物运输单元内，不再另受本规章限制。非货物运输单元安全和正常运行所必需的危险品，不得装在货物运输单元内运输。 货物运输单元内的电池组没有标志或标签要求。货物运输单元应按照 5.3.2.1.2 的规定显示联合国编号，并按照 5.3.1.1.2 的规定在相对的两侧挂菱形标志牌。 集装箱通过英国劳氏船级社（中国）有限公司认证，CSC 安全公约批准号为 GB-LR 28301-06/2024。（采信英国劳氏船级社（中国）有限公司集装箱证书，证书编号 NO.SHI2481720）。
国际海运危规 IMDG	与 TDG 的分类相同 海洋污染物（是/否）：否 EmS 编号：F-A，S-I 根据 IMDG Code(2022 版)的 2.9.4.7，除了安装在设备（包括电路板）中的纽扣电池，2003 年 06 月 30 日之后生产的锂电池或电池组的制造商和出厂后的销售商应提供联合国《试验和标准手册》第 III 部分第 38.3 小节第 38.3.5 段规定的 UN38.3 试验概要。
国际空运危规 IATA-DGR 和 ICAO-TI	禁运。 根据 IATA DGR (65 版)的 3.9.2.6.1(g)，除了安装在设备（包括电路板）中的纽扣电池，2003 年 06 月 30 日之后生产的锂电池或电池组的制造商和出厂后的销售商必须提供联合国《试验和标准手册》第 III 部分第 38.3 小节第 38.3.5 段规定的 UN38.3 试验概要。

15. 法规信息

欧洲/国际法规

OSHA (美国职业安全和健康管理法):	危险性根据危害通讯标准来编写 (29CFR 1910.1200).
EINECS (欧洲现有商业化学物质名录):	石墨，铜，铝已被列入 EINECS 目录中。
EPA TSCA (有毒物质控制法):	磷酸铁锂（专有），石墨，铜，铝已被列入 TSCA 公开目录中。
加拿大 DSL/NDSL (国内物质清单)/ (非国内物质清单):	磷酸铁锂（专有），石墨，铜，铝已被列入 DSL/NDSL 目录中。
HMIS (危险品识别系统):	健康危害：1 易燃性：0 物理危害：0 个人防护：F (4. 极其严重危害; 3. 严重危害; 2. 中度危害; 1. 轻度危害; 0. 极小危害)
WHMIS(加拿大工作场所有害物质识别系统):	B6（铝）。
危险货物品名表（GB 12268-2012）	无。

16. 其他信息

雇主只能把本化学品安全数据表的信息当作他们所获其他信息的补充信息，并能独立判断此信息的适用性，以确保正确使用并保护雇员的健康和安全。此化学品安全数据表提供的信息并不具担保作用，任何未按本化学品安全数据表使用产品、或与其他产品和操作过程同时使用本产品时产生的后果由用户自行承担。

本化学品安全数据表是根据《全球化学品统一分类和标签制度》，《联合国关于危险货物运输的建议书》，《国际海运危规》，国际航空运输协会《危险货物规则》和国家标准等相关危险化学品管理法律法规和标准进行编制，而上述法律法规和标准均会定期进行更新和变化。为使危险货物/危险化学品符合相关最新的管理要求，建议定期审核更新化学品安全数据表。

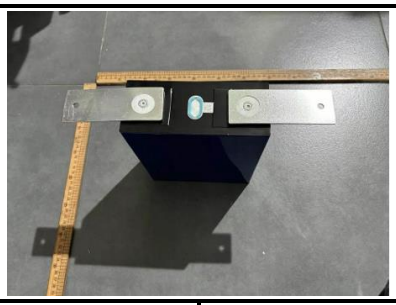
本化学品安全数据表分别以中、英文编制，在对中、英文本的理解上发生歧义时，以中文文本为准。

缩略语	ADR:《关于危险货物道路国际运输的欧洲协议》 RID:《关于危险货物铁路国际运输的规则》 IMDG: 国际海运危规 IATA-DGR: 国际航空运输协会《危险货物规则》(IATA) ICAO-TI: 国际民用航空组织《国际民航公约》(ICAO) EINECS: 欧洲现有商业化学物质名录 CAS: 化学文摘号 LC50: 半数致死浓度 LD50: 半数致死剂量 EC50: 半数效应浓度
编制日期	2024.10.23
更新和修改	第 1 版
编制标准	*全球化学品统一分类和标签制度* 第 1.5 部分

编制机构	杭州海关技术中心

附：样品照片 Sample Photos

内部电芯/Inner Cell



模组/Module
(锂离子电池模块 HM7A200L / 166.4V 314Ah 52.249kWh)

铭牌/ Nameplate

集成电池组/Assembled Battery
(锂离子电池系统 PowerCube-M7A-200-166.4/1331.2V-E15 / 1331.2V 314Ah 417.9kWh)

铭牌/ Nameplate
(锂离子电池系统 PowerCube-M7A-200-166.4/1331.2V-E15)


PYLONTECH

Name	Rechargeable Li-ion Battery System				
No.	Type	Nominal Voltage/Recommended Voltage Range	Battery Designation	Rated Power	Rated Energy
□1	PowerCube-M7A-200-166.4/166.4V-E15	166.4V/135.2~187.2V	IFpP73/176/208([525]15)M/ -20~50/95	26.1kW	52.2kWh
□2	PowerCube-M7A-200-166.4/332.8V-E15	332.8V/270.4~374.4V	IFpP73/176/208([525]25)M/ -20~50/95	52.2kW	104.4kWh
□3	PowerCube-M7A-200-166.4/499.2V-E15	499.2V/405.6~561.6V	IFpP73/176/208([525]35)M/ -20~50/95	78.3kW	156.7kWh
□4	PowerCube-M7A-200-166.4/665.6V-E15	665.6V/540.8~748.8V	IFpP73/176/208([525]45)M/ -20~50/95	104.4kW	208.9kWh
□5	PowerCube-M7A-200-166.4/832V-E15	832V/676~936V	IFpP73/176/208([525]55)M/ -20~50/95	130.6kW	261.2kWh
□6	PowerCube-M7A-200-166.4/998.4V-E15	998.4V/811.2~1123.2V	IFpP73/176/208([525]65)M/ -20~50/95	156.7kW	313.4kWh
□7	PowerCube-M7A-200-166.4/1164.8V-E15	1164.8V/946.4~1310.4V	IFpP73/176/208([525]75)M/ -20~50/95	182.8kW	365.7kWh
■8	PowerCube-M7A-200-166.4/1331.2V-E15	1331.2V/1081.6~1497.6V	IFpP73/176/208([525]85)M/ -20~50/95	208.9kW	417.9kWh
Rated Capacity		314Ah	IP Rating/ Protection Class		IP20 / Class I
Max Input Current		200A	Max Short Circuit Current/Duration		13.61kA/2ms
Chemistry		LiFePO4/LiFP6/Graphite	Critical Raw Materials		Li>0.1%
Usable Extinguishing Agent		A/B/C/F	Hazardous Substances		/
Date of Manufacture					

SN:

Pylon Technologies Co. Ltd | www.pylontech.com.cn | Address: No.300, Miaoqiao Road, Kangqiao Town, Pudong New Area, Shanghai 201315. China
The place of manufacture: Intersection of Daqianshan Road and Gaocheng Road, Economic Development Zone, Feixi County, Hefei 231299, Anhui Province, China

集成电池组/Assembled Battery

(储能电池系统 PowerCube-20H-M7A200C5.015-EU-05 1331.2V 3768Ah 5.015MWh)




铭牌/ Nameplate

（储能电池系统 PowerCube-20H-M7A200C5.015-EU-05 1331.2V 3768Ah 5.015MWh）

报告结束