

# Design Report of Safety Data Sheet

正本/ORIGINAL

<b>*Product Name:</b>	Rechargeable Li-ion Battery FH10050
<b>*Applicant:</b>	Jiangsu Pylon Battery Co., Ltd
<b>Supplier:</b>	Pylon Technologies Co., Ltd.
<b>*Composition of the product :</b>	Lithium Iron phosphate(LFP)(CAS: 15365-14-7): 40.5%; Graphite(CAS: 7782-42-5): 25%; Electrolyte(EMC/EC/PC/LiPF6): 20%; Copper(CAS: 7440-50-8): 8.5%; Aluminium(CAS: 7429-90-5): 6%
<b>Warranty of Design:</b>	GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Tenth revised edition
<b>*Information materials:</b>	HGBZ24041IQ 《Application》、P121614 《Declaration of consistency of components of the sample submitted for inspection》、P121614 《UN 38.3》、P121614-Product Picture
<b>Design Result of SDS please see next page.</b>	
<b>Designer:</b>	江帆
<b>Auditor:</b>	吴珂
<b>Approver:</b>	戎霄
 <p>常州合規思远产品安全技术服务有限公司                  Changzhou Hegui Siyuan Products Safety Technology Service Co., Ltd.</p>	

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



## Terms of the Using of the Report

1. According to the needs of the report, the company requires the commissioner to provide real and complete samples and information (see the report belt ★). The company does not assume any consequences caused by false, misleading, concealment, and major omissions due to the entrusted party. For example, when the chemical information submitted by the commissioner, the changes in authoritative databases and related policies affect the conclusion of this report, this report automatically fails. In this report, the data is only responsible for the commissioner's inspection samples. It is not applicable to products of the same batch, the same specifications or the same brand other than the test sample. , Correction and rationality of the process or process. The accuracy of the information of the sample component information shall be responsible for the commissioner.
2. The data source of this report is based on the relevant materials and information submitted by the client, the test results of international authoritative databases, laboratories and the current relevant knowledge of the company. We try our best to ensure the correctness of all information during the audit. However, due to the diversity of information sources and the limitations of the Company's knowledge, users of this report should make further judgments on the reasonableness of relevant information based on the purpose of use.
3. This report will be effective only after it is signed by the inspector, approver and stamped by our company.
4. Our company 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.
5. This report does not consider the differences between countries and operators.
6. The partly duplicating of this report is prohibited without the written approver.
7. The report is invalid when anything of the following happens-illegal transfer, embezzlement, imposture, modification or tampering in any media form. The inspection report is limited to the use of the commissioner. The client transfer the inspection report to any loss caused by any third party use. The company will not bear any responsibility.
8. If the entrusting party has objections to the inspection report, it shall submit a written objection to the company within 15 days from the date of receiving the report. If there is no written objection if the overdue does not propose a written objection, it shall be deemed to have no objection.
9. Due to force majeure, national legal policies, administrative mandatory behavior or judicial compulsory behavior, the inspection samples provided by the commissioner are damaged and lost, resulting in inspection reports that cannot be issued, or caused any losses and costs of the client, the company will not be liable for compensation.



## Safety Data Sheet

# Rechargeable Li-ion Battery FH10050

Version: V2.0.0.1

Report No.: HGBZ24041IQ2

Creation Date: 2024/05/07

Revision Date: -

\*According to GHS (Tenth Revised Edition)

## 1 Identification

### Product identifier

Product Name	Rechargeable Li-ion Battery FH10050
Product Model	FH10050
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable
Product Picture	 The product picture shows a white rectangular battery. On the left is a detailed view of the battery's label, which includes the PylonTech logo, product name 'Rechargeable Li-ion Battery FH10050', model number 'FH10050', part number '11FH10050ZA-00001', rated energy/capacity '5.12kWh/50Ah', nominal voltage '102.4V', charge voltage '115.2V', date of production '2023-07-10', and serial number 'P230710E41358967'. The label also features a barcode, the company name 'Pylon Technologies Co., Ltd.', website 'www.pylontech.com.cn', and various certification logos including TUV, CE, and a recycling symbol. To the right of the label are three photographs of the battery: a top-down view, a side view, and a front view, all set against a blue background with a yellow measuring tape for scale.

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

### Details of the supplier

Applicant Name	Jiangsu Pylon Battery Co., Ltd
Applicant Address	No.7, Keyan 3rd Road, Yizheng Economic Development Zone, Yangzhou, Jiangsu Province, China
Applicant Post Code	211400
Applicant Telephone	+86-21-51317697
Applicant Fax	021-51317698
Applicant E-mail	sales@pylontech.com.cn
Supplier Name	Pylon Technologies Co., Ltd.
Supplier Address	Plant 8, No.505 Kunkai Road, JinXi Town, Kunshan City, Jiangsu Province, PEOPLE'S REPUBLIC OF CHINA

<b>Supplier Post Code</b>	215324
<b>Supplier Telephone</b>	+86-21-51317697
<b>Supplier Fax</b>	+86-21-51317697
<b>Supplier E-mail</b>	<a href="mailto:sales@pylontech.com.cn">sales@pylontech.com.cn</a>
<b>Australian importer name</b>	Forte Powertech Pty Ltd;
<b>Australian importer address</b>	Unit 1, 47 Ellemtsea Circuit Lonsdale SA 5160
<b>Australian importer Telephone</b>	1300 086 898
<b>Australian importer E-mail</b>	info@fortepowertech.com.au

**Emergency phone number**

Emergency phone number	+86-21-51317699
------------------------	-----------------

**2 Hazard(s) identification****Hazard classification according to GHS**

The product meets the definition of "article". In the Globally Harmonized Chemical Classification and Labeling System (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 Label elements**

Hazard pictograms	Not applicable
Signal word	Not applicable

**Hazard statements**

Hazard statements	Not applicable
-------------------	----------------

**Precautionary statements**

## ◆ Prevention

Prevention	Not applicable
------------	----------------

## ◆ Response

Response	Not applicable
----------	----------------

## ◆ Storage

Storage	Not applicable
---------	----------------

## ◆ Disposal

Disposal	Not applicable
----------	----------------

**Hazard description**

## ◆ Physical and chemical hazards

	When the outer enclosure and safety circuits have been compromised or have been significantly damaged, it is likely to contain substantial electrical charge and can cause injury or death if mishandled. Mechanical damage can lead to danger. Battery products exposed to high temperature conditions, may produce heat out of control, causing fire.
--	---

## ◆ Health hazards

Inhaled	According to the material form, it is not the normal way of contacting.
Ingestion	Accidental ingestion of the product may be harmful to the health of the individual.
Skin Contact	No harm in general situation.
Eye	This product may cause temporary discomfort following direct contact with the eye.

## ◆ Environmental hazards

	Please refer to 12th chapter of SDS.
--	--------------------------------------

### 3 Composition/information on ingredients

#### Substance/mixture

	Mixture
--	---------

Component	CAS No.	EC No.	Concentration (Volume or weight percent, %)
Lithium Iron phosphate(LFP)	15365-14-7	604-917-2	40.5
Graphite	7782-42-5	231-955-3	25
Electrolyte(EMC/EC/PC/Li PF6)	-	-	20
Copper	7440-50-8	231-159-6	8.5
Aluminium	7429-90-5	231-072-3	6

### 4 First-aid measures

#### Description of first aid measures

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
<b>Skin contact</b>	No harm in general situation. First aid is not needed.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Call a physician immediately.
<b>Inhalation</b>	Move victim into fresh air. If breathing is difficult, give oxygen and consult a physician immediately.
<b>Protecting of first-aiders</b>	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

#### Most important symptoms/effects, acute and delayed

1	Please see section 11.
---	------------------------

#### Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

### 5 Fire-fighting measures

#### Extinguishing media

<b>Suitable extinguishing media</b>	Please use lithium battery fire extinguisher.
<b>Unsuitable extinguishing media</b>	No information available.

#### Specific hazards arising from the substance or mixture

1	Development of hazardous combustion gases or vapor possible in the event of fire.
2	May expansion or decompose explosively when heated or involved in fire.

#### Special protective equipment and precautions for fire-fighters

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.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment, do not breathe dust/fume.

### 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	Cut off the source of the leak as much as possible.
2	Keep leaks in a ventilated place.
3	Isolation of contaminated areas and restrictions on access.
4	It is recommended that emergency personnel wear dust masks.
5	Collect the spill with a clean shovel and place it in a clean, dry, loosely closed container and move the container away from the leak.
6	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## 7 Handling and storage

### Precautions for safe 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.

### Conditions for safe storage, including any incompatibilities

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.

## 8 Exposure controls/personal protection

### Control parameters

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Graphite	USA - OSHA	-	15	-	-
	South Korea	-	2	-	-

	Ireland	-	10	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	2.5	-	5
	Australia	-	3 (4)	-	-
	USA-ACGIH	-	2	-	-
<b>Copper</b>	The Netherlands	-	0.1	-	-
	Poland	-	0.2	-	-
	Latvia	-	0.5	-	1
	Germany (DFG)	-	0.01	-	0.02
<b>Aluminium</b>	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	1	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	5	-	10
	Australia	-	10	-	-
	USA-ACGIH	-	1	-	-

◆ Biological limit values

<b>Biological limit values</b>	No relevant regulations
--------------------------------	-------------------------

◆ 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 300 series standard Determination of toxic substances in workplace air.

### | 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	Set up emergency exit and necessary risk-elimination area.
4	Handle in accordance with good industrial hygiene and safety practice.

### | Personal protection equipment

<b>General requirement</b>	No special requirements, please see the description below.
<b>Eye protection</b>	In general situation, eye protection is not needed. In the production process, when contacting with vapour or dust, tightly fitting safety goggles.
<b>Hand protection</b>	In general situation, hand protection is not needed.
<b>Respiratory protection</b>	In general situation, respiratory protection is not needed. If exposure limits are exceeded or if irritation or other symptoms are experienced, wear dust proof mask or gas defence mask.
<b>Skin and body protection</b>	In general situation, skin and body protection are not needed.

## 9 Physical and chemical properties

### | Physical and chemical properties



<b>Physical state</b>	Solid (see picture for details)
<b>Colour</b>	No information available
<b>Odor</b>	No special odor
<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(Closed cup, °C)</b>	Not applicable
<b>Evaporation rate</b>	Not applicable
<b>Flammability</b>	Not flammable
<b>Upper/lower explosive limits[%(v/v)]</b>	Upper limit: No information available; Lower limit: No information available
<b>Vapor pressure</b>	Not applicable
<b>Relative vapour density(Air = 1)</b>	Not applicable
<b>Relative density(Water=1)</b>	No information available
<b>Solubility</b>	Insoluble in water
<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</b>	Not applicable
<b>Particle characteristics</b>	No information available

## 10 Stability and reactivity

### | 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>	No information available.
<b>Conditions to avoid</b>	Incompatible materials, heat, flame and spark.
<b>Incompatible materials</b>	Oxidants, halogen, interhalogen and mercury.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11 Toxicological information

### | Acute toxicity

<b>Acute toxicity</b>	No information available
-----------------------	--------------------------

### | Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
-----------	--	------------------------------

Lithium Iron phosphate(LFP)	Not Listed	Not Listed
Graphite	Not Listed	Not Listed
Electrolyte(EMC/EC/PC/Li PF6)	Not Listed	Not Listed
Copper	Not Listed	Not Listed
Aluminium	Not Listed	Not Listed

## Others

Rechargeable Li-ion Battery FH10050	
Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

## 12 Ecological information

### Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
Copper	LC <sub>50</sub> : 0.665mg/L (96h)(Fish)	EC <sub>50</sub> : 0.02mg/L (48h)(Daphnia magna)	ErC <sub>50</sub> : 7.9mg/L (96h)(Freshwater algae)
Graphite	LC <sub>50</sub> : 100mg/L (96h)(Fresh water fish)	No information available	No information available
Aluminium	LC <sub>50</sub> : 1.55mg/L (96h)(Fish)	No information available	No information available
Lithium Iron phosphate(LFP)	LC <sub>50</sub> : > 28mg/L (96h)(Fresh water fish)	EC <sub>50</sub> : > 28mg/L (48h)(Aquatic invertebrates)	ErC <sub>50</sub> : > 24mg/L (72h)(Algae)

### Chronic aquatic toxicity

Chronic aquatic toxicity	No information available
--------------------------	--------------------------

### Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Graphite	Low	Low

### Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Graphite	Low	Log Kow=0.5294

### Mobility in soil

Component	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
Graphite	Low	23.74

### | Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Lithium Iron phosphate(LFP)	No information available
Graphite	Not applicable
Copper	Not applicable
Aluminium	Not applicable


## 13 Disposal considerations

### | 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	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

## 14 Transport information

### | Label

Transporting Label	
--------------------	---

### | IMDG-CODE

UN number	3480
UN proper shipping name	LITHIUM ION BATTERIES (including lithium ion polymer batteries)
Transport hazard class	9
Transport subsidiary hazard class	None
Packing group	Packagings shall conform to the packing group II performance level
Marine pollutant (Yes or no)	No

### | ICAO/IATA-DGR

UN number	3480
UN proper shipping name	LITHIUM ION BATTERIES (including lithium ion polymer batteries)
Transport hazard class	9
Transport subsidiary hazard class	None
Packing group	Packagings shall conform to the packing group II performance level

### | UN-ADR

<b>UN number</b>	3480
<b>UN proper shipping name</b>	LITHIUM ION BATTERIES(including lithiumion 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

## 15 Regulatory information

### International chemical inventory

Component	EC inventory	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIICS	ENCS
Lithium Iron phosphate(LFP)	×	√	√	√	×	×	√	×	√
Graphite	√	√	√	√	√	√	√	√	×
Electrolyte(EMC/EC/PC/LiPF6)	×	×	×	×	×	×	×	×	×
Copper	√	√	√	√	√	√	√	√	√
Aluminium	√	√	√	√	√	√	√	√	√

[EC inventory] 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] Korea Existing Chemicals Inventory

[AIICS] Australian. Inventory of Industrial Chemical (AIICS)

[ENCS] Japan Inventory of Existing & New Chemical Substances

Note:

“√” Indicates that the substance included in the regulations.

“×” No data or not included in the regulations.

## 16 Other information

### Information on revision

<b>Creation Date</b>	2024/05/07
<b>Revision Date</b>	-
<b>Reason for revision</b>	-

### Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>

## | Abbreviations and acronyms

UN	The United Nations	ACGIH	American Conference of Governmental Industrial Hygienists
OECD	Organization for Economic Co-operation and Development	NFPA	National Fire Protection Association
IMDG- CODE	International Maritime Dangerous Goods CODE	NTP	National Toxicology Program
IARC	International Agency for Research on Cancer	PBT	Persistent, Bioaccumulative, Toxic
ICAO	International Civil Aviation Organization	vPvB	very Persistent, very Bioaccumulative
IATA	International Air Transportation Association	CMR	Carcinogens, mutagens or substances toxic to reproduction
CAS	Chemical Abstracts Service	RPE	Respiratory Protective Equipmen
PC-STEL	Short term exposure limit	LD <sub>50</sub>	Lethal Dose 50%
PC-TWA	Time Weighted Average	EC <sub>50</sub>	Effective Concentration 50
MAC	Maximum Allowable Concentration	EC <sub>X</sub>	Effective Concentration X%
DNEL	Derived No Effect Level	P <sub>OW</sub>	Partition coefficient Octanol: Water
PNEC	Predicted No Effect Concentration	BCF	Bioconcentration factor
NOEC	No Observed Effect Concentration	ED	Endocrine disruptor
LC <sub>50</sub>	Lethal Concentration 50%		

## | Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 10th 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.