Material Safety Data Sheet

Name of Sample: Rechargeable Li-ion Battery System

Product Model： Pi LV1-1;Pi LV1-2;Pi LV1-3;Pi LV1-4;Pi LV1-5;Pi LV1-6

Commissioner： Shanghai PYTES Energy Co., Ltd

Material Safety Data Sheet

Chemical product and company identification		
Name of Sample	Rechargeable Li-ion Battery System	
Type/Model	Pi LV1-1;Pi LV1-2;Pi LV1-3;Pi LV1-4;Pi LV1-5;Pi LV1-6	
Commissioned by	Shanghai PYTES Energy Co., Ltd	
Commissioner address	NO.3492 Jinqian Road, Qingcun Town, Fengxian District, Shanghai	
Manufacturer	Shanghai PYTES Energy Co., Ltd	
Manufacturer address	NO.3492 Jinqian Road, Qingcun Town, Fengxian District, Shanghai	
Inspection according to	GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS, Rev.10)	
Emergency telephone call	021-57475847	
Importer information	Company name	K2 Battery Pty Ltd
	Address	12A Redland Drive, Mitcham VIC 3132 Australia
	Phone	+61 431 440 390
	Email	gary@k2battery.com.au
	Emergency contact person	Gary White, CEO
-	Seal of PYTES Date of issue: 2024-05-09	

2. Composition information			
Common Chemical Name	Chemical Formula	CAS No.	Wt %
Lithium iron phosphate	$LiFePO_4$	15365-14-7	38.3
Graphite	C	7782-42-5	19.4
Separator	$(C_2H_4)_n$	9002-88-4	2.20
Copper foil	Cu	7440-50-8	6.70
Aluminium alloy	Al	7429-90-5	13.30
Styrene-butadiene rubber （SBR）	$(C_8H_8.C_4H_6)_n$	9003-55-8	0.80
Carbon Black	C	1333-86-4	0.40
Polyvinylidene fluoride（PVDF）	$C_2H_2F_2$	24937-79-9	0.80
Lithium hexafluorophosphate	$LiPF_6$	21324-40-3	2.30
Ethylene carbonate(EC)	$C_3H_4O_3$	96-49-1	5.60
Ethyl methyl carbonate(EMC)	$C_4H_8O_3$	623-53-0	4.60
Dimethyl carbonate（DMC）	$C_3H_6O_3$	616-38-6	5.60
Lead	Pb	7439-92-1	Not Detected
Cadmium	Cd	7440-43-9	Not Detected
Mercury	Hg	7439-97-6	Not Detected

3. Hazards identification	
Explosive risk	This article does not belong to the explosion dangerous goods

Flammable risk	This article does not belong to the flammable material
Oxidation risk	This article does not belong to the oxidation of dangerous goods
Toxic risk	This article does not belong to the toxic dangerous goods
Radioactive risk	This article does not belong to the radiation of dangerous goods
Mordant risk	This article does not belong to the corrosion of dangerous goods
Other risk	The watt-hour rate of the battery is 5.12kWh, which belong to the Lithium-ion batteries.

4. First aid measures

Once battery shell rupture, content contact with the human body will produce harm, once contact, should take the following emergency measures:

Eye:

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

Skin:

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

Inhalation:

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

Ingestion:

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

5. Fire-fighting measures

Flash Point: N/A.

Auto-Ignition Temperature: N/A.

Extinguishing Media: Water, CO2.

Special Fire-Fighting Procedures

Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards

Cell may vent when subjected to excessive heat-exposing battery contents.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

6. Accidental release measures

Steps to be taken in case Material is Released or Spilled

If the battery material is released, remove operators from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

Waste Disposal Method

It is recommended to discharge the battery to the end. Use up the metal lithium inside the lithium metal battery, and delivered to professional institutions for further treatment.

7. Handling and storage

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

Precautions to be taken in handling and storing

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.

Other Precautions

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

8. Exposure controls/personal protection

Respiratory Protection

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

Ventilation

Not necessary under conditions of normal use.

Protective Gloves

Not necessary under conditions of normal use.

Other Protective Clothing or Equipment

Not necessary under conditions of normal use.

Personal Protection is recommended for venting battery

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

9. Physical and chemical properties

Appearance: Prismatic
Odour: If leaking, smells of medical ether.
PH: Not applicable as supplied.
Flash Point: Not applicable unless individual components exposed.
Flammability: Not applicable unless individual components exposed.
Relative density: Not applicable unless individual components exposed.
Solubility (water): Not applicable unless individual components exposed.
Solubility (other): Not applicable unless individual components exposed.

10. Stability and reactivity

Stability: Product is stable under conditions described in Section 7.
Conditions to Avoid : Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.
Materials to avoid: Oxidising agents, alkalis, water.
Hazardous Decomposition Products : Toxic Fumes, and may form peroxides.
Hazardous Polymerization : N/A.
If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

11. Toxicological information

Signs & symptoms: None, unless battery ruptures.
In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.
Inhalation: Lung irritant.
Skin contact: Skin irritant.
Eye contact: Eye irritant.
Ingestion: Poisoning if swallowed.
Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

12. Ecological information

Mammalian effects: None known at present.
Eco-toxicity: None known at present.
Bioaccumulation potential: Slowly Bio-degradable.
Environmental fate: None known environmental hazards at present.

13. Disposal consideration

Do not incinerate, or subject cells to temperature in excess of 70°C, such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

14. Transport information

Label for conveyance: class 9 lithium battery hazard label

UN Number:UN3480

Packaging Group: II

EmS No: F-A ,S-I

Marine pollutant: No

Proper Shipping name: Lithium-ion batteries

Hazard Classification: The goods are complied with Packing Instruction P903 of IMDG CODE (Amdt. 41-22）(2022 Edition), including the passing of the UN38.3 test.

15. Regulation information

Law information

《Dangerous Goods Regulations》
《Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations》
《INTERNATIONAL MARITIME DANGEROUS GOODS CODE》
《List of dangerous goods》
《Agreement concerning the International Carriage of Dangerous Goods by Road》
《Technical Instructions for the Safe Transport of Dangerous Goods by Air》
《Classification and code of dangerous goods》
《Occupational Safety and Health Act》(OSHA)
《Toxic Substance Control Act》(TSCA)
《Consumer Product Safety Act》(CPSA)
《Federal Environmental Pollution Control Act》(FEPCA)
《The Oil Pollution Act》(OPA)
《Superfund Amendments and Reauthorization Act TitleIII (302/311/312/313)》(SARA)
《Resource Conservation and Recovery Act》(RCRA)
《Safety Drinking Water Act》(CWA)
《California Proposition 65》
《Code of Federal Regulations》(CFR)
In accordance with all Federal, State and local laws.

16. Other information

This file is only effective to the batteries（Pi LV1 BMU） provided by commissioner Shanghai PYTES Energy Co., Ltd, which manufactured by Shanghai PYTES Energy Co., Ltd.

The commissioner provides the composition information of batteries, and promises its integrity and accuracy. Users should read this file carefully, and use the batteries in correct method.