Safety Data Sheet

SECTION 1. IDENTIFICATION

Product Identifier

Product Name	Rechargeable Li-ion Battery System WH-BXB5.12 (204.8V 25Ah 5.12kWh)
Applicable Models	WH-SPHA3.6H-5.12kWh, WH-SPHA3.6H-10.24kWh, WH-SPHA4.6H-5.12kWh, WH-SPHA4.6H-10.24kWh, WH-SPHA5.0H-5.12kWh, WH-SPHA5.0H-10.24kWh, WH-SPHA6.0H-5.12kWh, WH-SPHA6.0H-10.24kWh

Other Means of Identification

SDS #	SDS002
Synonyms	Lithium Iron Phosphate (LiFePO4, LFP)
Proper Shipping Name (ADG Code)	LITHIUM ION BATTERIES(including lithium ion polymer batteries)
UN/ID No	UN3480

Recommended Use of the Chemical and Restrictions on Use

Recommended Use	Energy Storage; Battery Packs

Details of the Manufacturer of the Safety Data Sheet

Manufacturer Name	Jiangsu Weiheng Intelligent Technology Co., Ltd.
Manufacturer Address	888 chunliubei road, Yangzhong city, Jiangsu province,
Manufacturer Post Code	214188
Manufacturer Telephone	+86 4008776999

Details of the Importer of the Safety Data Sheet

Importer Name	ECACTUS PTY LTD
Importer Address	SE 103 566 ST KILDA RD MELBOURNE VIC 3004
Manufacturer Telephone	0061417183105

Emergency Phone Number

Emergency Telephone	0061417183105

SECTION 2. HAZARDS IDENTIFICATION

Hazard class and label elements of the product according to GHS (the ninth 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.9 (2021) 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	CAS No.	EC No.	Concentration (weight percent, %)
LiFePO4	15365-14-7	-	38.58
C	7782-42-5	231-955-3	20.51
Cu	7440-50-8	231-159-6	7.7
Al	7429-90-5	231-072-3	6.01
LiPF6	21324-40-3	244-334-7	2.78
(CH2-CF2)n	24937-79-9	200-867-7	0.92
[C6H7O2(OH)2CH2COONa]n	9004-32-4	900-432-4	0.32
C12H14	9003-55-8	-	0.4
CNT	308068-56-6	231-153-3	0.64
C3H2O3	872-36-6	212-825-5	0.4
C3H5O4	96-49-1	202-510-0	5.55
C4H8O3	623-53-0	-	5.55
C5H10O3	105-58-8	203-311-1	5.55

C36H69N3O3X2	24937-16-4	-	0.4
(C3H6)n	9003-07-0	-	4.68

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/m³	ppm	mg/m³
	USA-OSHA	-	15	-	-
	South Korea	-	2	-	-
C	Ireland	-	10	-	-
7782-42-5	Germany (DFG)	-	4	-	-
	Denmark	-	2.5	-	5
	Australia	-	3(4)	-	-
	The Netherlands	-	0.1	-	-
Cu	Poland	-	0.2	-	-
7440-50-8	Latvia	-	0.5	-	1
	Germany (DFG)	-	0.01	-	0.02
	USA -OSHA	-	15	-	-
	South Korea	-	10	-	-
Al	Ireland	-	1	-	-
7429-90-5	Germany (DFG)	-	4	-	-
	Denmark	-	5	-	10
	Australia	-	10	-	

Biological Limit Values

Component	Source	Biological monitoring index	Biological limits value	Sampling time	Remark
LiPF6	SCOEL(EU)	Fluorine/urine	8mg/L	end of shift	

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

Eye Protection Tightly fitting safety goggles (approved by EN 166(EU) or

NIOSH (US).

Hand Protection	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	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.
Skin and Body Protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Lithium ion Battery, individually packaged
Odor Threshold: No information available
Melting Point/Freezing Point (°C): No information available
Flash Point (°C)(Closed Cup): Not applicable
Flammability: No information available
Vapor Pressure (KPa): Not applicable
Relative Density(Water=1): No information available
n-Octanol/Water Partition Coefficient: No information available
Decomposition Temperature (°C): No information available
Particle characteristics: No information available

Odor: No information available
pH: No information available
Initial Boiling Point and Boiling Range (°C): No information available
Evaporation Rate: Not applicable
Upper/lower explosive limits[%(v/v)]: Upper limit: No information available; Lower limit: No information available
Relative Vapour Density(Air=1): Not applicable
Solubility: No information available
Auto-Ignition Temperature(°C): No information available
Kinematic Viscosity (mm^2/s): Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	Contact with incompatible substances can cause decomposition or other chemical
Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	Mixtures with metallic acetylene, when heated, cause a fire or incandescence. Reacts severely with halogens, interhalogens or other strong oxidants, or causes a fire. Ultrafine powder will self-ignite in the air at room temperature.
Conditions to Avoid	Incompatible materials, heat, flame and spark.
Incompatible Materials	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.
Hazardous Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component	CAS No.	LD_{50}(Oral)	LD_{50}(Dermal)	LC_{50}(Inhalation, 4h)
C3H5O4	96-49-1	10000mg/kg(Rat)	> 3000mg/kg (Rabbit)	No information available
Al	7429-90-5	50-300mg/kg(Rat)	275mg/kg (Rat)	No information available
[C6H7O2(OH)2CH2COONa]n	9004-32-4	27000mg/kg(Rat)	> 2000mg/kg (Rabbit)	> 5.8mg/L (Rat)
LiPF6	21324-40-3	1702mg/kg(Rat)	275mg/kg (Rat)	No information available
C4H8O3	623-53-0	695mg/kg(Rat)	> 20000mg/kg (Rabbit)	47.702mg/L (Rat)
C3H2O3	872-36-6	300~500mg/kg(Rat)	200~2000mg/kg (Rat)	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	LiFePO4	Not Listed	Not Listed
2	7782-42-5	C	Not Listed	Not Listed

3	7440-50-8	Cu	Not Listed	Not Listed
4	7429-90-5	Al	Not Listed	Not Listed
5	21324-40-3	LiPF6	Not Listed	Not Listed
6	24937-79-9	(CH2-CF2)n	Not Listed	Not Listed
7	9004-32-4	[C6H7O2(OH)2CH2 COONa]n	Not Listed	Not Listed
8	9003-55-8	C12H14	Category 3	Not Listed
9	308068-56-6	CNT	Category 2B or 3	Not Listed
10	872-36-6	C3H2O3	Not Listed	Not Listed
11	96-49-1	C3H5O4	Not Listed	Not Listed
12	623-53-0	C4H8O3	Not Listed	Not Listed
13	105-58-8	C5H10O3	Not Listed	Not Listed
14	24937-16-4	C36H69N3O3X2	Not Listed	Not Listed
15	9003-07-0	(C3H6)n	Category 3	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
Al	7429-90-5	LC_{50}: 1.55mg/L (96h)(Fish)	No information available	No information available
[C6H7O2(OH)2CH2COONa]n	9004-32-4	No information available	EC_{50}: 87.3mg/L (48h)	No information available
Cu	7440-50-8	LC_{50}: 0.665mg/L	EC_{50}: 0.02mg/L (48h)	ErC_{50}: 7.9mg/L (96h)

(96h)(Fish)

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	LiFePO4 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. C does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Cu does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Al does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. LiPF6 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. (CH2-CF2)n does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. [C6H7O2(OH)2CH2COONa]n does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. C12H14 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. CNT does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. C3H2O3 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. C3H5O4 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. C4H8O3 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. C5H10O3 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. C36H69N3O3X2 does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. (C3H6)n does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Chemicals Contaminated Packaging Disposal Recommendations	Before disposal should refer to the relevant national and local laws and regulation. 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	No
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
Report remarks	According to United Nations Recommendations on the Transports 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
LiFePO4	√	√	√	×	×	×	√	×	×
C	√	√	√	√	√	√	√	√	×
Cu	√	√	√	√	√	√	√	√	×
Al	√	√	√	√	√	√	√	√	×
LiPF6	√	√	×	√	×	√	√	√	×
(CH2-CF2)n	×	√	√	√	√	√	√	√	√
[C6H7O2(OH)2CH2COONa]n	×	√	√	√	√	√	√	√	√
C12H14	×	√	√	√	√	√	√	√	√
CNT	×	×	×	×	×	×	×	×	×
C3H2O3	√	√	×	√	×	×	√	×	×
C3H5O4	√	√	√	√	√	√	√	√	√

C4H8O3	√	√	×	√	×	√	√	×	×
C5H10O3	√	√	√	√	√	√	√	√	√
C36H69N3O3X2	×	×	×	√	√	√	√	√	√
(C3H6)n	×	√	√	√	√	√	√	√	√

[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	Jan.17,2024
Revision Date	Jul.04,2024
Reason for Revision	-

Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 9th 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.

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