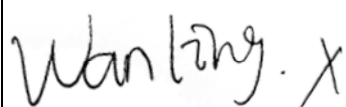



Material Safety Data Sheet

Name of Products: Rechargeable Li-ion Battery Pack

Applicant: Dongguan Hinen New Energy Technology Co., Ltd

Factory: Dongguan Hinen New Energy Technology Co., Ltd

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Dongguan Hinen New Energy Technology Co., Ltd

Section 1 - Product and Company Identification

> Product Identifier

Product Name	Rechargeable Li-ion Battery Pack
Model	B5000
Rating	51.2V, 100Ah, 5.12KWh
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	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	Dongguan Hinen New Energy Technology Co., Ltd
Application Address	No.24 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong Province, China
Applicant Post Code	-

Address: No.24 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong Province, China

Applicant Fax	-
Applicant Telephone	+86-769-89920666
Applicant E-mail	info@hinensolar.com
Supplier Name	Dongguan Hinen New Energy Technology Co., Ltd
Supplier Address	No.24 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong Province, China
Supplier Post Code	-
Supplier Telephone	+86-769-89920666
Supplier Fax	-
Supplier E-mail	info@hinensolar.com

> Australia Importer

Company Name	HINEN AUSTRALIA PTY LTD
Address	Level 5, Tenancy 3, 107 Mount Street, North Sydney.
Contact Person Name	Steve
Contact Person Number	+61 0478175078
Contact Person Email	service@hinen.com.au

> Emergency Phone Number

Emergency +61 478175078

Phone Number

Section 2 - Hazards Identification

> 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
Store	Storage 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

Chemical Composition	Chemical Formula	Weight(%)	CAS Number
Lithium Iron Phosphate	LiFePO ₄	38.86	15365-14-7
Graphite	C	18.20	7782-42-5
Ethylene Carbonate	C ₃ H ₄ O ₃	6.86	96-49-1
Ethyl Methyl Carbonate	C ₄ H ₈ O ₃	1.14	623-53-0
Diethyl Carbonate (DEC)	C ₅ H ₁₀ O ₃	9.15	105-58-8
Propylene Carbonate (PC)	C ₄ H ₆ O ₃	2.86	108-32-7
Lithium Hexafluorophosphate	LiPF ₆	2.29	21324-40-3
Polypropylene	(C ₃ H ₆) _n	4.20	9003-07-0

Copper	Cu	1.68	7440-50-8
Aluminium	Al	14.76	7429-90-5

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	Ensure that medical personnel are aware of the

First-aiders 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 Measures

> **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

> Personal protective equipment

Respiratory protection	Respirator with air cylinder, dust mask
Hand protection	Protective gloves
Eye protection	Goggle or protective glasses designed to protect against liquid splashes
Skin and body protection	Working clothes with long sleeve and long trou

Section 9 - Physical And Chemical Properties

Appearance

Physical state : Solid,

Form: Geometric solid

Color: Silvery

Odor: Odorless

• **pH:** NA

• Specific temperatures/temperature ranges at which changes in physical state occur. There is no useful information for the product as a mixture.

• **Flash point:** NA

• **Explosion properties:** NA

• **Density:** NA

• **Solubility, with indication of the solvent(s):** Insoluble in water

Section 10 - Stability and Reactivity

Stability: Stable under normal conditions of use

- **Conditions to avoid:** Hazardous reactions occurring under specific conditions
- **Conditions to avoid:** When cell is exposed to an external short-circuit, crushes, deformation, high temperature above 100 degree C, it will cause heat generation and ignition. Avoid direct sunlight and high humidity.
- **Materials to avoid:** Conductive materials, water, seawater, strong oxidizers and strong acids.
- **Hazardous decomposition products:** Acrid or harmful gas is emitted during fire.

Section 11 - Toxicological Information

Lithium Iron Phosphate

- **Acute toxicity:** No applicable data.

Reference: cobalt: LDLo, oral - Guinea pig 20mg/kg

- **Local effects:** Unknown.
- **Sensitization:** The nervous system of respiratory organs may be stimulated sensitively.
- **Chronic toxicity/Long term toxicity:**

By the long-term inhalation of coarse particulate or vapor of cobalt, it is possible to cause the serious respiratory-organs disease. Skin reaction or a lung disease for allergic or hypersensitive person may be caused.

- **Skin causticity:** Although it is very rare, the rash of the skin and allergic erythema may result.

Manganese:

- When manganese's concentration is 0.1 mg/L in water, make BOD5 reduced
- Mainly for chronic poisoning,damage to the central nervous system especially

Extrapyramidal system

LD50: 9000 mg/kg(through the rats mouth),LC50: No data

Aluminum

- **Local effects:** Aluminum itself has no toxicity. When it goes into a wound, dermatitis may be caused.

▪ Chronic toxicity/Long term toxicity: By the long-term inhalation of coarse particulate or fume, it is possible to cause lung damage (aluminum lungs).

Copper

▪ Acute toxicity: 60-100mg sized coarse particulate causes a gastrointestinal disturbance with nausea and inflammation. TDLo, hypodermic - Rabbit 375mg/kg

▪ **Local effects:**

Coarse particulate stimulates nose and tracheal. When it goes into one's eyes, reddening and pain may occur.

▪ **Sensitization:** Sensitization of the skin may be caused by long-term or repetitive contact.

▪ **Reproductive toxicity:** TDLo, oral - Rat 152mg/kg

Nickel

▪ **Local effects:** Through the pores and sebaceous glands penetrate into the skin, causing skin allergies inflammation, Its clinical manifestations is dermatitis and eczema

Graphite

▪ **Acute toxicity:** Unknown.

▪ **Local effects:** When it goes into one's eyes, it stimulates one's eyes; conjunctivitis, thickening of corneal epithelium or edematous inflammation palpebra may be caused.

▪ Chronic toxicity/Long term toxicity: Long-term inhalation of high levels of graphite coarse particulate may cause lung disease or a tracheal disease.

Carcinogenicity:

Graphite is not recognized as a cause of cancer.

Organic Electrolyte

Acute toxicity:

LD50, oral - Rat 2,000mg/kg or more HLD(half lethal dose), 2,000mg/kg or more (take orally) ;60-100mg copper particles can cause stomach sicchasia and inflammation.

- **Local effects:** Unknown.
- **Skin irritation study:** Rabbit – Mild
- **Eye irritation study:** Rabbit - Very severe

Section 12 - Ecological Information

Marine Pollutant: Not Determined

No data for Polymer Lithium-ion Battery.

Kindly Reminder:

- Disallow material discharge or abandon a natural environment that have no government's permission .
- The lithium ion battery disposal must, in accordance with professional treatment: Enterprise treat hazardous waste and transport the waste must accord with the

government and local government requirements, Don't allow individuals to burn the battery.

Section 13 - Disposal Consideration

Waste disposal must be in accordance with the applicable regulations. Disposal of the lithium ion battery/cell should be performed by permitted, professional disposal Page: firms knowledgeable in State or Local requirements of hazardous waste treatment and hazardous waste transportation. Incineration should never be performed by battery eventually by trained professional in authorized facility with proper gas and fume but users, treatment.

Section 14 - Transport Information

Label for conveyance: The Class 9—Lithium Battery hazard label, the

Cargo aircraft Only Label

UN Number: UN3480 or UN3481

Packing Group: Group II

EmS No: F-A, S-I

Marine pollutant: No

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises: No further information.

UN Proper Shipping name:. 1) Lithium ion batteries; 2) Lithium ion batteries packed with equipment

Transport hazard class: The goods shall be complied with the requirements of Section IA (or Section I) of Packing Instructions 965~966 of 64th DGR Manual of IATA (2023 Edition) and IMDG CODE (Amdt. 40-20) 2020 Edition, including the passing of the UN38.3 test.

Manual of Test and Criteria(38.3 Lithium battery)

No.	Test Item	Test Results	Remark
T1	Altitude Simulation	Passed	
T2	Thermal Test	Passed	
T3	Vibration	Passed	
T4	Shock	Passed	
T5	External Short Circuit	Passed	
T6	Impact/Crush	Passed	for cell only
T7	Overcharge	Passed	for pack only
T8	Forced Discharge	Passed	for cell only

Section 15 - Regulatory information

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous Non- hazardous

Section 16 -Additional information

Creation Date Feb.16,2023

Revision Date Feb.16,2023

Reason for Revision -

> Disclaimer

This Material Safety Data Sheet (MSDS) 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.