DESIGN REPORT OF SAFETY DATA SHEET

No.: 230100320454964E
Date: Sep.25,2023

Name of the sample	Rechargeable Li-ion Battery System LX D5.0-10
Applicant	GoodWe Technologies Co.,Ltd.
Supplier	Goodwe (Guangde) Power Supply Technology Co.,Ltd.
Composition of the sample	Phosphoric acid,iron(2+) lithium salt (1:1:1) : 49%; Phosphate(1-),hexafluoro,lithium: 3%; Graphite: 24%; Aluminum: 6%; Copper: 13%; Polyethylene: 5%
Warranty of Design	GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Ninth revised edition
Design Result of SDS please see next page.	

Designer	孙越越	**Approver**	*For and on behalf of* CCIC JIANGSU CO., LTD. 中国检验认证集团江苏有限公司 王珍

4 *授权签字人 Authorized Signature (s)*

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

公司：中国检验认证集团江苏有限公司 地址：中国.常州市天宁区青洋北路 47 号 Add：47 Qingyang North Road, Tianning District, Changzhou, China
电话（Tel）：+86-519-83277160 网址：www.ccicjs.com 邮编（P.C.）：213000

Section 1 Product and Company Identification

> Product Identifier

Product Name	Rechargeable Li-ion Battery System LX D5.0-10
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 Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	GoodWe Technologies Co.,Ltd.
Application Address	No.90 Zijin Rd., New District, Suzhou, 215011, China
Applicant Post Code	——
Applicant Telephone	+86-512-69582260
Applicant Fax	——
Applicant E-mail	——
Supplier Name	Goodwe (Guangde) Power Supply Technology Co.,Ltd.
Supplier Address	No.208, Tongrui East Rd., Guangde Economic Development Zone, Anhui Province, P.R.China
Supplier Post Code	——
Supplier Telephone	——
Supplier Fax	——
Supplier E-mail	——

> Australia Importer

Company Name	GoodWe Australia Pty Ltd
Address	2/6 Enterprise Drive, Rowville, Victoria, 3178, Australia
Contact Person Name	Dean Williamson
Contact Person Number	61 402 817 522
Contact Person E-mail	Dean.williamson@goodwe.com

> Emergency Phone Number

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Emergency Phone Number	+86-512-69582260

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

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			percent, %)
Phosphoric acid,iron(2+) lithium salt (1:1:1)	15365-14-7	-	49
Phosphate(1-),hexafluoro,lithium	21324-40-3	244-334-7	3
Graphite	7782-42-5	231-955-3	24
Aluminum	7429-90-5	231-072-3	6
Copper	7440-50-8	231-159-6	13
Polyethylene	9002-88-4	200-815-3	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 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.

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> 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

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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
Graphite 7782-42-5	USA - OSHA	-	15	-	-
	South Korea	-	2	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	2.5	-	5
	Australia	-	3 (4)	-	-
Aluminum 7429-90-5	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	1	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	5	-	10
	Australia	-	10	-	-
Copper 7440-50-8	The Netherlands	-	0.1	-	-
	Poland	-	0.2	-	-
	Latvia	-	0.5	-	1
	Germany (DFG)	-	0.01	-	0.02

Biological Limit Values

Component	Source	Biological monitoring index	Biological limits value	Sampling time	Remark
Phosphate(1-),hexafluoro,lithium	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.Battery parameters:51.2V 100Ah 5KWh

Odor: No information available

Odor Threshold: No information available

pH: No information available

Melting Point/Freezing Point (℃): No information available

Initial Boiling Point and Boiling Range (℃): No information available

Flash Point (℃)(Closed Cup): Not applicable

Evaporation Rate: Not applicable

Flammability: No information available

Upper/lower explosive limits[%(v/v)]: Upper limit: No information available; Lower limit: No information available

Vapor Pressure (KPa): Not applicable

Relative Vapour Density(Air=1): Not applicable

Relative Density(Water=1): No information available

Solubility: No information available

n-Octanol/Water Partition Coefficient: No information available

Auto-Ignition Temperature(℃): No information available

Decomposition Temperature (℃): No information available

Kinematic Viscosity (mm^2/s): Not applicable

Particle characteristics: No information available

Critical Temperature(℃): Not applicable

Section 10 Stability and Reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	Mixtures with metallic acetylene, when heated, cause a fire or incandescence. Ultrafine powder will self-ignite in the air at room temperature. Reacts severely with halogens, interhalogens or other strong oxidants, or causes a fire.

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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. Oxidants, halogen, interhalogen and mercury. Halogen, interhalogen, strong oxidant, water and acids.
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)
Phosphate(1-),hexafluoro,lithium	21324-40-3	50~300mg/kg(Rat)	275mg/kg(Rat)	No information available
Aluminum	7429-90-5	50-300mg/kg(Rat)	275mg/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	Phosphoric acid,iron(2+) lithium salt (1:1:1)	Not Listed	Not Listed
2	21324-40-3	Phosphate(1-),hexafluoro,lithium	Not Listed	Not Listed

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3	7782-42-5	Graphite	Not Listed	Not Listed
4	7429-90-5	Aluminum	Not Listed	Not Listed
5	7440-50-8	Copper	Not Listed	Not Listed
6	9002-88-4	Polyethylene	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
Aluminum	7429-90-5	LC_{50}: 1.55mg/L (96h)(Fish)	No information available	No information available
Copper	7440-50-8	LC_{50}: 0.665mg/L (96h)(Fish)	EC_{50}: 0.02mg/L (48h)	ErC_{50}: 7.9mg/L (96h)

> Chronic Aquatic Toxicity

No information available

> Others

Persistence and Degradability No information available

Bioaccumulative Potential No information available

Mobility in Soil No information available

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Results of PBT and vPvB Assessment	Phosphoric acid,iron(2+) lithium salt (1:1:1) does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Phosphate(1-),hexafluoro,lithium does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Graphite does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Aluminum does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Copper does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Polyethylene does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Section 13 Disposal Considerations

Waste Chemicals	Before disposal should refer to the relevant national and local laws and regulation.
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 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(group) could be transported in accordance with the classification conclusions of this report when meet the requirements of UN38.3 test.

Section 15 Regulatory Information

公司：中国检验认证集团江苏有限公司 地址：中国.常州市天宁区青洋北路47号 Add: 47 Qingyang North Road, Tianning District, Changzhou, China
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> International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Phosphoric acid,iron(2+) lithium salt (1:1:1)	√	√	√	×	×	×	√	×	×
Phosphate(1-),hexafluoro,lithium	√	√	×	√	×	√	√	√	×
Graphite	√	√	√	√	√	√	√	√	×
Aluminum	√	√	√	√	√	√	√	√	×
Copper	√	√	√	√	√	√	√	√	×
Polyethylene	×	√	√	√	√	√	√	√	√

【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	Sep.25,2023
Revision Date	Sep.25,2023
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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2. According to the demand of this SDS, CCIC requires the applicant to provide true and exact sample and data.
3. Information from applicant is the key of this SDS, so CCIC will not respond for the wrong of applicant.
4. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.
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