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DESIGN REPORT OF SAFETY DATA SHEET

No.：250106320162870E
Date：Nov.20,2025

Name of the sample	Rechargeable Lithium Ion Battery Module Mars HV5-01
Applicant	CESC New Energy Technology Co., Ltd.
Supplier	CESC Energy Storage Technology (Suzhou) Co., Ltd.
Composition of the sample	Lithium iron phosphate：24.31~26.09%；Graphite：12.6~14.5%；Ethyl methyl carbonate：7.24~8.02%；Ethylene carbonate：4.9~5.68%；Copper：3.8~4.2%；Aluminum：2.2~2.6%；Lithium hexafluorophosphate：1.5~2.28%；Polyethylene：1.37~2.28%；Polyethylene terephthalate：0.78~1.56%；Propylene carbonate：0.59~0.98%；Polydimethylsiloxane rubber：0.39~0.65%；Carbon black：0.42~0.62%；Steel：25.5~28.6%；Others：1.94~6.8%
Warranty of Design	GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Eleventh revised edition
Design Result of SDS please see next page.	
Designer	孙超超
Approver	For and on behalf of CCIC JIANGSU CO., LTD. 中国检验认证集团江苏有限公司

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授权签字人 Authorized Signature (s)

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

Test is Located on：CCIC Dangerous Goods Identification Center（47 Qingyang North Road, Tianning District, Changzhou, China）
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Rechargeable Lithium Ion Battery Module Mars HV5-01
Warranty of Design：GHS (Eleventh Revised Edition)

SAFETY DATA SHEET

SDS

No.：250106320162870E
Date：Nov.20.2025
Version：1.1

Section 1 Product and Company Identification

> Product Identifier

Product Name	Rechargeable Lithium Ion Battery Module Mars HV5-01

> 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	CESC New Energy Technology Co., Ltd.
Application Address	CESC New Energy Industrial Park, South Taihu New District, Huzhou, Zhejiang Province, China
Applicant Post Code	313001
Applicant Telephone	(86) 0572 2591986
Applicant Fax	——
Applicant E-mail	nicolechen@cescpower.com
Supplier Name	CESC Energy Storage Technology (Suzhou) Co., Ltd.
Supplier Address	#A4 Building, No.2 of Third District, Datong Road #20 SND, Suzhou, China
Supplier Post Code	215000
Supplier Telephone	——
Supplier Fax	——
Supplier E-mail	nicolechen@ceschome.com
Australia Importer	
Company	YINERGYPTYLTD
Address	U1034UnionStreetMcMahonsPointNSW2060Australia
Contact	JudyYao
Tel	0406266770
Email	support.au@yinergy-solar.com

> Emergency Phone Number

Emergency Phone Number	+86-0510-83583180
Tel	0406266770

Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the eleventh 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.11 (2025) 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, %)
Lithium iron phosphate	15365-14-7	-	24.31~26.09
Graphite	7782-42-5	231-955-3	12.6~14.5
Ethyl methyl carbonate	623-53-0	433-480-9	7.24~8.02
Ethylene carbonate	96-49-1	202-510-0	4.9~5.68
Copper	7440-50-8	231-159-6	3.8~4.2
Aluminum	7429-90-5	231-072-3	2.2~2.6
Lithium hexafluorophosphate	21324-40-3	244-334-7	1.5~2.28
Polyethylene	9002-88-4	-	1.37~2.28

Polyethylene terephthalate	25038-59-9	-	0.78~1.56
Propylene carbonate	108-32-7	203-572-1	0.59~0.98
Polydimethylsiloxane rubber	63394-02-5	-	0.39~0.65
Carbon black	1333-86-4	215-609-9	0.42~0.62
Steel	7439-89-6	231-096-4	25.5~28.6
Others	-	-	1.94~6.8

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	Use water spray to extinguish fire. Cool surrounding Lithium batteries with water spray.
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
Graphite 7782-42-5	USA - OSHA	-	15	-	-
	South Korea	-	2	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	2.5	-	5
	Australia	-	3 (4)	-	-
Copper 7440-50-8	The Netherlands	-	0.1	-	-
	Poland	-	0.2	-	-
	Latvia	-	0.5	-	1
	Germany (DFG)	-	0.01	-	0.02
Aluminum 7429-90-5	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	1	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	5	-	10
	Australia	-	10	-	-
Polyethylene terephthalate 25038-59-9	Latvia	-	5	-	-
Propylene carbonate 108-32-7	Latvia	-	2	-	-
Carbon black 1333-86-4	USA - OSHA	-	3.5	-	-
	South Korea	-	3.5	-	-
	Ireland	-	3.5	-	7
	France	-	3.5	-	-
	Denmark	-	3.5	-	7
	Australia	-	3	-	-

Biological Limit Values

Component	Source	Biological monitoring index	Biological limits value	Sampling time	Remark
Lithium hexafluorophosphate	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: 102.4V 52Ah 5.3kWh

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. 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)
Lithium hexafluorophosphate	21324-40-3	50~300mg/kg(Rat)	275mg/kg(Rat)	No information available
Ethylene carbonate	96-49-1	10000mg/kg(Rat)	> 3000mg/kg(Rabbit)	No information available
Steel	7439-89-6	30000mg/kg(Rat)	No information available	No information available
Carbon black	1333-86-4	> 15400mg/kg(Rat)	> 3000mg/kg(Rabbit)	No information available
Propylene carbonate	108-32-7	20700mg/kg(Mouse)	No information available	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	Lithium iron phosphate	Not Listed	Not Listed
2	7782-42-5	Graphite	Not Listed	Not Listed
3	623-53-0	Ethyl methyl carbonate	Not Listed	Not Listed
4	96-49-1	Ethylene carbonate	Not Listed	Not Listed

5	7440-50-8	Copper	Not Listed	Not Listed
6	7429-90-5	Aluminum	Not Listed	Not Listed
7	21324-40-3	Lithium hexafluorophosphate	Not Listed	Not Listed
8	9002-88-4	Polyethylene	Category 3	Not Listed
9	25038-59-9	Polyethylene terephthalate	Not Listed	Not Listed
10	108-32-7	Propylene carbonate	Not Listed	Not Listed
11	63394-02-5	Polydimethylsiloxane rubber	Not Listed	Not Listed
12	1333-86-4	Carbon black	Category 2B	Not Listed
13	7439-89-6	Steel	Not Listed	Not Listed
14	-	Others	Not Listed	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
Copper	7440-50-8	LC_{50}: 0.665mg/L (96h)(Fish)	EC_{50}: 0.02mg/L (48h)	ErC_{50}: 7.9mg/L (96h)
Steel	7439-89-6	LC_{50}: 1.29mg/L (96h)(Fish)	No information available	No information available
Aluminum	7429-90-5	LC_{50}: 1.55mg/L (96h)(Fish)	No information available	No information available

> 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	Lithium iron phosphate 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. Ethyl methyl carbonate does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Ethylene carbonate 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. Aluminum does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Lithium hexafluorophosphate 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. Polyethylene terephthalate does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Propylene carbonate does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Polydimethylsiloxane rubber does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Carbon black does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII. Steel 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

> International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIIC	ENCS
Lithium iron phosphate	×	√	√	√	×	×	√	×	×
Graphite	√	√	√	√	√	√	√	√	×
Ethyl methyl carbonate	√	√	×	√	×	√	√	×	√
Ethylene carbonate	√	√	√	√	√	√	√	√	√
Copper	√	√	√	√	√	√	√	√	×
Aluminum	√	√	√	√	√	√	√	√	×
Lithium hexafluorophosphate	√	√	×	√	×	√	√	√	×
Polyethylene	×	√	√	√	√	√	√	√	√
Polyethylene terephthalate	×	√	√	√	√	√	√	√	√
Propylene carbonate	√	√	√	√	√	√	√	√	√
Polydimethylsiloxane rubber	×	×	√	×	√	√	×	√	×
Carbon black	√	√	√	√	√	√	√	√	×
Steel	√	√	√	√	√	√	√	√	×
Others	×	×	×	×	×	×	×	×	×

【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.
【KECL】 Korea Existing Chemicals List.
【AIIC】 Australian Inventory of Industrial Chemicals.
【ENCS】 Japan List of 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	Nov.20,2025
Revision Date	Nov.20,2025
Reason for Revision	-

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 11th 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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