

SAFETY DATA SHEET

Power Battery System HL-C020-80.50-271 80V 271Ah 21.816kWh

SDS

Eneroc New Energy Technology Co., Ltd.

- According to GHS (Eighth Revised Edition)

Section 1 Product and Company Identification

> Product Identifier

Product Name Power Battery System HL-C020-80.50-271 80V 271Ah 21.816kWh
Synonyms -

> 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 Eneroc New Energy Technology Co., Ltd.
Application Address Room 101, Building 2, No.1 Huishan Road, Lushan Street, Fuyang District, Hangzhou City, Zhejiang Province, China
Applicant Post Code 311400
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Supplier Name Eneroc New Energy Technology Co., Ltd.
Supplier Address Room 101, Building 2, No.1 Huishan Road, Lushan Street, Fuyang District, Hangzhou City, Zhejiang Province, China
Supplier Post Code 311400
Supplier Telephone +86-571-63611360
Supplier Fax —
Supplier E-mail postmaster@eneroc.com.cn

> Emergency Phone Number

Emergency Phone Number +86-571-63611360

Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the eighth 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.8 (2019) 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	Concentration (weight percent, %)	CAS No.	EC No.
Graphite	7~25	7782-42-5	231-955-3
Lithium ironPhosphate	15~40	15365-14-7	604-917-2
Hexafluoropropylene-vinylidene fluoride Copolymer	3~15	9011-17-0	618-470-6
Lithium Hexafluorophosphate	0~5	21324-40-3	244-334-7
Acetylene Black	0~2	1333-86-4	215-609-9
Diethyl Carbonate	0~15	105-58-8	203-311-1
Dimethyl Carbonate	0~15	616-38-6	210-478-4
Ethyl Methyl Carbonate	0~15	623-53-0	613-014-2
Propylene Carbonate	0~15	108-32-7	203-572-1
Ethylene Carbonate	0~15	96-49-1	202-510-0

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/m ³	ppm	mg/m ³
Graphite 7782-42-5	USA - OSHA	-	15	-	-
	South Korea	-	2	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	2.5	-	5
	Australia	-	3 (4)	-	-
Acetylene 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	-	-
Propylene Carbonate 108-32-7	Latvia	-	2	-	-

Biological Limit Values

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

sphate					
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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 (mm²/s): 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.

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.

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)
Acetylene Black	1333-86-4	> 15400mg/kg(Rat)	> 3000mg/kg(Rabbit)	No information available
Dimethyl Carbonate	616-38-6	13000mg/kg(Rat)	> 5000mg/kg(Rabbit)	No information available
Ethylene Carbonate	96-49-1	10000mg/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	7782-42-5	Graphite	Not Listed	Not Listed
2	15365-14-7	Lithium ironPhosphate	Not Listed	Not Listed
3	9011-17-0	Hexafluoropropylene-v inylidene fluoride Copolymer	Not Listed	Not Listed
4	21324-40-3	Lithium Hexafluorophosphate	Not Listed	Not Listed

5	1333-86-4	Acetylene Black	Category 2B	Not Listed
6	105-58-8	Diethyl Carbonate	Not Listed	Not Listed
7	616-38-6	Dimethyl Carbonate	Not Listed	Not Listed
8	623-53-0	Ethyl Methyl Carbonate	Not Listed	Not Listed
9	108-32-7	Propylene Carbonate	Not Listed	Not Listed
10	96-49-1	Ethylene Carbonate	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**

No information available

> **Chronic Aquatic Toxicity**

No information available

> **Others**

Persistence and Degradability
Bioaccumulative Potential
Mobility in Soil

No information available

No information available

No information available

Results of PBT and vPvB Assessment

Graphite does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
 Lithium iron Phosphate does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
 Hexafluoropropylene-vinylidene fluoride Copolymer 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.
 Acetylene Black does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
 Diethyl Carbonate does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
 Dimethyl Carbonate 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.
 Propylene 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.

Section 13 Disposal Considerations

Waste Chemicals Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

Contaminated Packaging Disposal Recommendations 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 section 13.1 and 13.2.

Section 14 Transport Information

Transporting Label



Marine pollutant None

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

Section 15 Regulatory Information

> International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Graphite	✓	✓	✓	✓	✓	✓	✓	✓	✗
Lithium ironPhosphate	✗	✓	✗	✗	✗	✗	✓	✗	✗
Hexafluoropropylene-vinylidene-fluoride Copolymer	✗	✓	✓	✓	✓	✓	✓	✓	✓
Lithium Hexafluorophosphate	✓	✓	✗	✓	✗	✓	✓	✓	✗
Acetylene Black	✓	✓	✓	✓	✓	✓	✓	✓	✗
Diethyl Carbonate	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dimethyl	✓	✓	✓	✓	✓	✓	✓	✓	✓

Carbonate									
Ethyl Methyl Carbonate	×	√	×	√	×	√	√	×	×
Propylene Carbonate	√	√	√	√	√	√	√	√	√
Ethylene Carbonate	√	√	√	√	√	√	√	√	√

【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 2021/08/01

Revision Date 2021/08/01

Reason for Revision -

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 8th 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.