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MATERIAL SAFETY DATA SHEET

Model Name.	:	**LiFePO4 Battery**
Model No.	:	**LPE-LFP12175-200SC**
Applicant	:	**LithiumPro Energy Ltd.**
Report Number	:	**KS2408S3700B04**
Issue Date	:	**November 28, 2024**

Written by: Lezla He _____ **Approved by:** Sam Yu. _____

KSIGN(Guangdong) Testing Co., Ltd.

KSIGN(Guangdong) Testing Co., Ltd. APPROVED

Material Safety Data Sheet

Report No.: KS2408S3700B04

* The MSDS is prepared based on the information provided by client. The contents and formats of this MSDS are revised as per client's request.

1.Chemical and Enterprise Identification

Product Name	LiFePO4 Battery (Model: LPE-LFP12175-200SC)
Product description	Rated: 12.8V, 175Ah, 2240Wh Weight: Approx. 14.9kg Dimensions: L355.0*W175.0*H188.0 (mm)
Trademark	LithiumPro Energy

Details of the factory of the Material safety data sheet

Manufacturing location	China

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2.Hazards identification

Classification LITHIUM ION BATTERIES
Hazard statement No dangerous in normal use & without damage.

Hazards caused by spilled internal cell materials and precautionary statements as following:

Classification			Labelling				
Hazard class	Hazard category		Pictogram		Signal word	Hazard statement	Hazard statement codes
			GHS	UN Model Regulations			
Aspiration hazard	2			Not required	Warning	May be harmful if swallowed and enters airways	H305
Acute toxicity	3	Oral		Not required	Warning	Harmful if swallowed	H302
		Dermal				Harmful in contact with skin	H312
		Inhalation				Harmful if inhaled	H332
Skin corrosion/ irritation	2			Not required	Warning	Causes skin irritation	H315
Serious eye damage/eye irritation	2/2A			Not required	Warning	Causes serious eye irritation	H319
Skin sensitization	1、1A[a]、1B[a]			Not required	Warning	May cause an allergic skin reaction	H317
Skin corrosion/ irritation	1 1A、1B、1C[a]				Danger	Causes severe skin burns and eye damage	H314

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Serious eye damage/eye irritation	1		Not required	Danger	Causes serious eye damage	H318

Note:

a - categories may be applied where data are sufficient and where required by a competent authority.

3.Ingredients/Composition Information

Pure chemical ☐ Mixture ☒

Chemical name	CAS No.	Weight-%	Remark
Lithium iron phosphate ($LiFePO_4$)	15365-14-7	20-40	-
Lithium hexafluorophosphate	21324-40-3	10-20	-
Aluminum	7429-90-5	10-20	-
Graphite	7782-42-5	10-20	-
Copper	7440-50-8	7-13	-
Poly(vinyl chloride)	9002-86-2	1-5	-

4.First aid measures

The lithium ion batteries are not hazardous with eye and skin contact under normal circumstance. In case of internal hazardous substance leaking a hazardous substance, following measures should be taken if body parts contact with these substance:
After Skin Contact: In case of contact, immediately wash skin with soap and copious amounts of water.
After Eye Contact: In case of contact, flush eyes with clean water for 15 minutes while lifting eyelids. Get prompt medical attention.
After Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.
After Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5.Fire-fighting measures

Characteristics of Hazard: Toxic fumes; gases or Vapours may evolve on burning.
Hazardous Combustion Products: CO, CO2, HF, phosphorus fluoride.
Fire-extinguishing Methods and Extinguishing Media: Copious amounts of cold water are an effective extinguishing medium for lithium-ion batteries.
Don' t use warm or hot water. Don' t use Halon type extinguishing material. Dry powder, sand and earth might be used.
Attention in Fire-extinguishing: The Firemen should put on anti-gas masks and full fire-fighting suits.

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6.Accidental release measures

Steps to be Taken in case Material is Released or Spilled
If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and Vapours to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of Vapours. Remove spilled liquid with absorbent and incinerate.

7.Handling and storage

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.
Precautions to be taken in handling and storing
Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.
Other Precautions
The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short circuit or install with incorrect polarity.

8.Exposure control and personal protection

Respiratory Protection
In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.
Ventilation
Not necessary under conditions of normal use.
Protective Gloves
Not necessary under conditions of normal use.
Other Protective Clothing or Equipment
Not necessary under conditions of normal use.
Personal Protection is recommended for venting battery
Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

9.Physical and chemical properties

Appearance: Cuboid
Colour: Black
Odours: If leaking, smells of medical ether.
pH: Not applicable as supplied.
Flash Point: Not applicable unless individual components exposed.
Flammability: Not applicable unless individual components exposed.
Relative density: Not applicable unless individual components exposed.
Solubility (water): Not applicable unless individual components exposed.
Solubility (other): Not applicable unless individual components exposed.

10.Stability and reactivity

Stability: Stable under normal temperatures and pressures.
Incompatibility: oxidizing agents
Conditions to Avoid: Heat and open flame, short circuit, and water
Hazardous polymerization: Will not occur
Decomposition Products: CO, CO2, HF, phosphorus fluoride

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11.Toxicological Information

Signs & symptoms: None, unless battery ruptures.
In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.
Inhalation: Lung irritant.
Skin contact: Skin irritant.
Eye contact: Eye irritant
Ingestion: Poisoning if swallowed.
Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur, Target Organs nerves, liver and kidneys.

12.Ecological Information

Mammalian effects: None known at present.
Eco-toxicity: None known at present.
Bioaccumulation potential: Slowly Bio-degradable.
Environmental fate: None known environmental hazards at present.

13.Waste Disposal

Waste disposal should read:
Recycling should be in accordance with the applicable Regional & National regulations which may vary from country to country.
Attention for waste disposal: should read:
Do NOT dispose of batteries as normal waste. Do NOT incinerate, burn or place into a fire. Do NOT pierce, dissect or crush.

14.Transport Information

UN No.	UN 3480，UN 3481
Proper Shipping Name	Lithium ion batteries (Including lithium ion polymer batteries) or; Lithium ion batteries contained in equipment (Including lithium ion polymer batteries) or; Lithium ion batteries packed with equipment (Including lithium ion polymer batteries)
Labels for Package	Class 9
EmS No	F-A, S-I

ICAO / IATA:	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section IA, PI 966 Section I and PI 967 Section I appropriate of IATA DGR 65th (2024 Edition) for transportation.
IMDG CODE:	《International Maritime Dangerous Goods》 Code (IMDG Code 41-22).
ADR:	《European Agreement concerning the International Carriage of Dangerous Goods by Road》 (ADR 2023).
RID:	《Regulations concerning the International Carriage of Dangerous Goods by Rail》 (RID 2023).
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The lithium battery goods described in this report has passed the testing in Section 38.3 of the United Nations Manual of Tests and Standards.	

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15.Regulatory Information

Regulatory information

《Dangerous Goods Regulations》
《Recommendation on the Transport of Dangerous Goods Model Regulations》
《International Maritime Dangerous Goods》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《Classification and code of dangerous Goods》
《Occupational Safety and Health Act》(OSHA)
《Toxic Substance Control Act》(TSCA)
《Consumer Product Safety Act》(CPSA)
《Federal Environmental Pollution Control Act》(FEPCA)
《The Oil Pollution Act》(OPA)
《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》(SARA)
《Resource Conservation and Recovery Act》(RCRA)
《Safety Drinking Water Act》(CWA)
《California Proposition 65》
《Code of Federal Regulations》(CFR)
In according with all Federal, State and local laws.

16.Other Information

Reference: National standard of People's Republic of China. (GB/T 16483-2008) Safety data sheet for chemical products-Content and order of sections, National standard of People's Republic of China. (GB/T 17519-2013) Guidance on the compilation of safety data sheet for chemical products.

The above information is written based on our current knowledge and we strive for its accuracy. However, we make no promises of merchantability or any other express or implied promises regarding this information. We are not responsible for the use of this information, and users are advised to assess its availability based on application requirements.
Users should carefully read this document and use the battery according to the correct method. KSIGN(Guangdong) Testing Co., Ltd. shall not be responsible for any damage or loss caused by improper use of the battery.

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