



Shenzhen Toby Technology Co., Ltd.

1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang
Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China
Tel: (86) 755-26509301/02 Fax: (86) 755-26509195 Http: //www.tobylab.cn

MATERIAL SAFETY DATA SHEETS

SAMPLE INFORMATION:

1. Sample Description: LFP Battrey System
2. Brand Name: ----
3. Sample Model: DP-VW614315-01
4. Typical Capacity: 315Ah
5. Manufacturer: Shanghai DU-POWER New Energy Technical Co.,Ltd.
6. Manufacturer Address: Building18, 1000 Jinhai Road, Pudong, Shanghai
7. Suggest use and restricted: Storage energy

CLIENT INFORMATION

1. Applicant: Shanghai DU-POWER New Energy Technical Co.,Ltd.
2. Applicant Address: Building18, 1000 Jinhai Road, Pudong, Shanghai
3. Applicant Post Code: 201206

TEST INFORMATION:

1. Applicant No: 190923005
2. Test Items and Request: MATERIAL SAFETY DATA SHEETS
3. Date of Receipt: Aug. 30, 2019
4. Date of Test: Aug. 30-Sep. 05, 2019

SUMMARY:

As per request, the contents and formats of the MSDS are prepared in accordance with European Commission Directives 67/548/EEC, 1999/45/EC, Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 and Regulation (EU) No 453/2010, and is provided per attached.

REMARKS:

1. Report on important information is provided by the applicant.
2. This MSDS report for your reference.

Signed for Shenzhen TOBY

Justin Zhang
Manager



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Section 1 - Identification of the substance /preparation and of the company/ undertaking

Identification of the preparation	:	LFP Battrey System
Company Identification	:	Shanghai DU-POWER New Energy Technical Co., Ltd.
Company Address	:	Building18, 1000 Jinhai Road, Pudong, Shanghai
Tel	:	021-50476766
Fax	:	021-50476798
Emergency Contact No.	:	+8615825573669
e-mail	:	ping.shen@du-power.com

Section 2 - Hazards Identification

Preparation hazards and classification	Not dangerous with normal use. The battery should not be disassembled or incinerated. Exposure to the ingredients contained within or their combustion products could be harmful.
Primary Route(s) of Exposure	Inhalation, Ingestion, Skin contact and Eye contact.
Potential Health Effects:	Inhalation: Vapors or mists from a ruptured battery may cause respiratory irritation. Ingestion: The battery ingredients contained within or their ingredients products can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. Skin: Skin contact with contents of an open battery can cause severe irritation on burns to the skin. Eye: Eye contact with contents of an open battery can cause severe irritation or burms to the eye.

Section 3 - Composition/ Information on Ingredients

Hazardous Ingredients (Chemical Name)	Concentration or concentration ranges (%)	CAS Number
Lithium iron phosphate	35-37%	15365-14-7
Graphite	15-18%	7782-42-5
Aluminium	13-14%	7429-90-5
Ethyl methyl carboxylic acid	10-12%	623-53-0
Thin ethyl carbonate	8-10%	96-49-1
Copper	6-7%	7440-50-8
Lithium hexaflourophosphate	2-3%	21324-40-3



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Polyethylene	2-3%	9002-88-4
Polyvinylidene fluoride resin	0.7-1.1%	24937-79-9

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

Section 4 - First Aid Measures

Inhalation	Move victim to fresh air and remove source of contamination from area. Seek medical attention.
Skin contact	Wash skin thoroughly with water and remove contaminated clothing and shoes. Get medical help in serious cases.
Eye contact	Rinse your eyes thoroughly for at least 15 minutes with plenty of water, occasionally lifting the eyelids and getting medical help.
Ingestion	Rinse your mouth thoroughly and drink plenty of water. get medical help.

Section 5 - Fire-Fighting Measures

Special extinguishing procedure	As with any fire, wear self-contained breathing apparatus to avoid breathing in harmful decomposition products.
Characteristics of Hazard	Toxic fumes, gases or vapors may evolve on burning.
Fire extinguishing methods and extinguishing Media	Please use water, dry sand and other proper fire extinguishing media.

Section 6 - Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.
Environmental Precautions	Prevent material from contaminating soil and from entering sewers or waterways. Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an



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	acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.
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Section 7 – Handling and Storage

Handling	Don't handling the batteries in manner that allows terminals to short circuit. Do not open, disassemble, crush or burn battery.
Storage	If the battery is subject to storage for such a long term as more than 3 months. it is recommended to recharge the battery periodically. And recommended at -10°C ~ +45°C for long period storage. Do not storage the battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep out of reach of children. Do not expose the battery to heat or fire. Avoid storage in direct sunlight. Do not store together with oxidizing and acidic materials.

Section 8 – Exposure Controls/ Personal Protection

Engineering Controls	No engineering controls are required for handling batteries that have not been damaged. Personal protective equipments for damaged batteries should include chemical resistant gloves and safety glasses.
Personal Protective Equipment	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. 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



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Clothing and safety glass with side shields.

Section 9 – Physical and Chemical Properties

Physical State	Form: Solid
	Color: Black
	Odour: Odourless
Change in condition:	
pH, with indication of the concentration	Not applicable
Melting point/freezing point	Not available.
Boiling Point, initial boiling point and Boiling range	Not available.
Flash Point	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor Pressure	Not applicable
Vapor Density(Air = 1)	Not applicable
Density/relative density	Not available.
Solubility in Water	Insoluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Odour threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	Not available.
Viscosity	Not applicable
Voltage	153.6V

Section 10 – Stability and Reactivity

Stability	The product is stable under normal conditions.
Conditions to Avoid (e.g. static discharge, shock or vibration)	Do not subject lithium battery to mechanical shock. Vibration encountered during



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	transportation does not cause leakage, fire or explosion. Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse.
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Section 11 - Toxicological Information

Irritation	In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin.
Sensitization	Not Available
Neurological Effects	Not Available
Reproductive Toxicity	Not Available
Toxicologically Synergistic Materials	Not Available

Section 12 - Ecological Information

Environmental impact:	Proper use and disposal of batteries will not damage the environment. Battery treatment, away from water, rain and snow.
Environmental pollution	Heavy metal pollution environment, please properly dispose of waste batteries.

Section 13 - Disposal Considerations

Waste Treatment: Recycle or dispose of in accordance with government, state & local regulations.

Attention for Waste Treatment: Deserted batteries couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. Best way is recycling.

Section 14 - Transport Information

This report applies to by sea, by air and by land;

The lithium battery tested according to the requirements of the UN manual of tests and Criteria, Part III, subsection 38.3;

The lithium battery according to Section II/Section IB of PACKING INSTRUCTION 965, or Section II of PACKING INSTRUCTION 966-967 of the 2019 IATA Dangerous Goods regulations 60th Edition may be transported. And applicable U.S. DOT regulations for the safe transport of lithium battery.



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the handling, storage, use, or disposal of this product.

All information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable.

***** (END OF REPORT) *****