RivoChem

Material Safety Data Sheet (MSDS) Report

MSDS Number: SDS201712211055

Applicant: Jiangsu Fengchi Green Power Co., Ltd.

No.82 Xinzhong Road, Xinzhuang Street, Yixing City, Jiangsu Province, 214200, China

Sample Description:

Product name	:	Polymer Lithium-Ion Battery Pack
Battery type	:	Polymer lithium-ion batteries
Nominal voltage	:	24V
Nominal capacity	:	6000mAh/144Wh
Battery weight	:	1065g
Product dimension	:	L: 410mm, W: 65mm, T: 26mm
Data reviewed	:	Jan 10, 2019

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Approved By:

Pingo Zhang, Manager

On behalf of Shanghai Ruifu Co., Ltd.

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报告专用章

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Product name	:	Polymer Lithium-Ion Battery Pack
Battery type	:	Polymer lithium-ion batteries
Nominal voltage	:	24V
Nominal capacity	:	6000mAh/144Wh
Battery weight	:	1065g
Physical dimension	:	L: 410mm, W: 65mm, T: 26mm

Recommended use of the chemical and restrictions on use

Identified use : Power supply for electronic device.

Details of the supplier of the safety data sheet

Jiangsu Fengchi Green Power Co.,Ltd
No.82 Xinzhong Road, Xinzhuang Street,
Yixing City, Jiangsu Province, 214200
China

Emergency telephone number

Tel: +86-510-87560105 or contact your local emergency center.

Product Information

Tel: +86-510-87560105
E-mail: Chenpeng422@sina.com

SECTION 2. HAZARDS IDENTIFICATION

This product containing lithium-ion battery is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement(HCS2012). The information contained in this Material Safety Data Sheet contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

As a solid, manufactured article, exposure to hazardous ingredients is not expected with normal use. The potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, electrically or physically abused/damaged. If the battery is compromised and starts to leak, based upon the battery ingredients, the contents are classified as hazardous.

The following GHS hazardous classification are derived based on the internal ingredients of battery under extreme exposure scenarios, such as breakage, leakage or being abused.

GHS-Classification

Hazard classification : Flammable solids, Category 1
Flammable solid.
Substances and mixtures, which in contact with water, emit flammable gases, Category 2
In contact with water releases flammable gases.
Skin sensitisation, Category 1
May cause an allergic skin reaction.
Carcinogenicity, Category 2
Suspected of causing cancer.
Specific target organ toxicity - repeated exposure, Category 2, Inhalation
May cause damage to organs through prolonged or repeated exposure if inhaled.

GHS-Labelling

Symbol(s) :

Signal word : Danger

Hazard statements :

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statements : **Prevention:**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P223	Do not allow contact with water.
P231 + P232	Handle under inert gas. Protect from moisture.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P352	IF ON SKIN: Wash with plenty of water.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P335 + P334 Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P402 + P404 Store in a dry place. Store in a closed container.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No further available information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Product form : Manufactured article

Hazardous components

Component	CAS Number	Percent of Total Weight
Organic Carbonate	Not applicable	13-18%
Carbon(Graphite)	7782-42-5	12-15%
Copper Foil	7440-50-8	7-10%
Lithium Cobalt Oxide	12190-79-3	2-3%
Lithium Salts	Not applicable	1-5%
Nickel	7440-02-0	2-5%
Aluminum Foil	7429-90-5	5%

The materials contained in the batter may only become a hazard if the battery or the cell is disintegrated or if the battery is physically or electrically abused. The battery should not be opened or exposed to heat because exposure of the above ingredients contained within could be harmful under some circumstances.

SECTION 4. FIRST AID MEASURES

Under normal conditions of battery use, internal ingredients/components will not present a health hazard. The following information is provided for exposures that may occur during battery production or container breakage or under extreme heat conditions such as fire.
Burning and disassembly batteries may emit acrid smoke, irritating fumes, and toxic fumes of hazardous oxides of carbons, hydrofluoric acid and other toxic by-products.

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.

Do not leave the victim unattended.

If inhaled	:	Move to fresh air. If breathed in, move person into fresh air. Keep patient warm and at rest. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If on skin, rinse well with water. Wash contaminated clothing before re-use.
In case of eye contact	:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye.
If swallowed	:	Get medical attention immediately. Do NOT induce vomiting. Rinse mouth with water. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	None known
Notes to physician	:	No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray/Foam Carbon dioxide (CO2)/Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	This battery product is considered safe under normal use conditions, but it will burn in case of fire. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Toxic fumes Acrid smoke/irritating fumes
Specific extinguishing	:	Product is compatible with standard fire-fighting agents.

methods

Further information	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Normally not required. In the event of fire and breakage, please ensure that: Use personal protective equipment. Ensure adequate ventilation. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.
Methods and materials for containment and cleaning up	:	If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc.
Other information	:	Comply with all applicable national and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Use only approved chargers and procedures. Improperly charging a cell may cause the cell or battery to flame or damage. Do not drop battery, puncture, or attempt to open battery case. Avoid contact with the internal components of a battery. Do not subject product to open flame or fire and avoid situations that could cause arcing between terminals. For personal protection see section 8.
Conditions for safe storage	:	Store batteries under roof in cool, dry, well-ventilated areas separated from incompatible materials and from activities that may create flames, spark, or heat. Store sealed lead acid batteries at ambient temperature.. Observe label precautions.
Charging	:	Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Charging space should be ventilated. There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Engineering measures : Store sealed batteries at ambient temperature.
Never recharge batteries in an unventilated, enclosed space.
Do not subject product to open flame or fire.
Avoid conditions that could cause arcing between terminals.

Personal protective equipment

Respiratory protection : NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT.

Hand protection : NONE REQUIRED FOR NORMAL HANDLING OF THE PRODUCT.

Eye protection : NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT.

Skin and body protection : NONE REQUIRED FOR NORMAL HANDLING OF THE FINISHED PRODUCT.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	Manufactured article
Colour	:	No data available
Odour	:	odorless
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability	:	Non flammable under normal use condition.
Upper explosion limit	:	No data available

Lower explosion limit	:	No data available
Vapour pressure	:	Not applicable
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	No data available
Water solubility	:	Insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Thermal decomposition	:	No data available
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	No applicable
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions. The sealed battery is considered stable.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Incompatible materials	:	None known
Hazardous decomposition products		None under normal operating conditions. Carbon dioxide and hydrogen fluoride gas may be generated during combustion of battery.

SECTION 11. TOXICOLOGICAL INFORMATION

Disposal methods

General advice	:	The battery should be recycled if possible. The battery must be neutralized through an approved secondary treatment facility prior to disposal as a hazardous

waste.
Recycling of battery can be done in authorized facility, through licensed waste carrier.
Dispose of in accordance with all applicable local and national regulations.

Acute toxicity
Not classified based on available information.
Skin corrosion/irritation
Not classified based on available information.
Serious eye damage/eye irritation
Not classified based on available information.
Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.
Germ cell mutagenicity
Not classified based on available information.
Carcinogenicity
Not classified based on available information.
Reproductive toxicity
Not classified based on available information.
STOT - single exposure
Not classified based on available information.
STOT - repeated exposure
Not classified based on available information.
Aspiration toxicity
Not classified based on available information.
Further information
Carcinogenicity:

IARC	Cobalt in lithium cobalt oxide is considered as a class 2B carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	None Known to be human carcinogen

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

When properly used or disposed, the batteries do not present environmental hazards.
Do not let internal components enter marine environment.
Avoid release to waterways, wastewater or groundwater.

Persistence and degradability
No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : Material should be recycled if possible.
The product should not be allowed to enter drains, water courses or the soil.
This material must be disposed of in a safe manner.
Send to a licensed waste management company.
Dispose of in accordance with all applicable national and local regulations.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

Lithium-ion batteries (limited to a maximumof 30% SoC) are subject to the following transport rules:

Method	Technical Guidelines	Packing Instruction and Special
Air	2019-2020 Edition of the ICAO Technical Instruction for the Safe Transport of Dangerous Goods by Air (Technical Instructions) and the 60th Edition of the IATA Dangerous Goods Regulations (DGR).	Packing Instruction 965(PI965, section IA) IMP: RBI Limit per package: Pax A/C = Forbidden/CAO = 35 kg
Sea	IMDG Code 2019(38-16)	Special Provision 188, 230, 310, 348, 376, 377,384

Provisions for the international transportation (pursuant to ICAO-TI/IATA-DGR, IMDG Code):
UN-No.: UN 3480
Proper Shipping Name: Lithium Ion Batteries

IMDG 2019(38-16)

UN Number	UN3480
UN Proper shipping name	Lithium ion batteries
Transport hazard class(es)	9
Packing Group	N/A

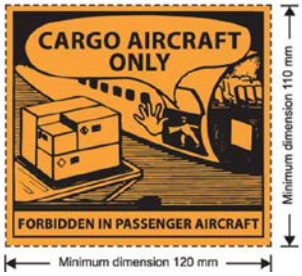
IATA 2018 (60th Edition of the IATA Dangerous Goods Regulations (DGR))

UN Number	UN3480
UN Proper shipping name	Lithium ion batteries
Hazard Class	9
Packing Group	N/A

ADR

UN Number	UN3480

UN Proper shipping name	Lithium ion batteries
Hazard Class	9
Packing Group	N/A



Note: All lithium ion cells and batteries shipped by themselves (UN 3480) are forbidden for transport as cargo on passenger aircraft. All packages prepared in accordance with Packing Instruction 965, Section IA, IB and II, must bear a Cargo Aircraft Only label, in addition to existing marks and/or labels.

SECTION 15. REGULATORY INFORMATION

SARA 302 : Not regulated.

SARA 311/312 Hazards : Not regulated.

SARA 313 Component(s) Cobalt compounds are considered hazardous and are subjected to reporting requirements of section 313 title III of the superfund amendments and reauthorization act of 1986 (SARA) and 40 CFR part 372.

California Prop 65 This product does not contain any chemical known to the State of California to cause cancer.

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 01/10/2019

Disclaimer:
This SDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by us to be dependable and is accurate to the best of our knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.

This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. We assumed no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

End of Report