Safety Data Sheet

Name of Products: Li-ion Battery

Applicant: Jinyun Reypu Electronic Technology Co.,Ltd.

Factory： Jinyun Reypu Electronic Technology Co.,Ltd.

Tester Tracy Xie	**Reviewer** Poppy Fu	**Approver** Sophie Wu
Project Engineer	**Chief Engineer**	**Chief Engineer**

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Identification of the product and supplier	
Name of goods	Li-ion Battery
Type/Model	RPH0018 36V 9.8Ah 352.8Wh 10INR22/71-2
Ratings	36V 9.8Ah 352.8Wh
Commissioned by	Jinyun Reypu Electronic Technology Co.,Ltd.
Commissioner address	No.9 Xinxing Road, Xinbi Street, Jinyun, Lishui, Zhejiang, China.
Factory's name	Jinyun Reypu Electronic Technology Co.,Ltd.
Factory address	No.9 Xinxing Road, Xinbi Street, Jinyun, Lishui, Zhejiang, China.
Inspection according to	OSHA GHS 《A Guide to The Globally Harmonized System of Classification and Labelling of Chemicals》 IATA DGR 《Dangerous Goods Regulations》 IMO IMDG CODE 《INTERNATIONAL MARITIME Dangerous Goods CODE》
Receiving date: 2022-06-16	Issue date: 2022-06-23

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product name： Li-ion Battery

Model：RPH0018 36V 9.8Ah 352.8Wh 10INR22/71-2

Other means of identification

Synonyms：

Recommended use of the chemical and restrictions on use

Recommended Use：

Uses advised against：

a) Do not dismantle, open or shred secondary cells or batteries.

b) Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight.

c) Do not short-circuit a cell or battery. Do not store cells or batteries haphazardly in a box or drawer. where they may short-circuit each other or be short-circuited by other metal objects.

d) Do not remove a cell or battery from its original packaging until required for use.

e) Do not subject cells or batteries to mechanical shock.

f) In the event of a call leaking, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected ares with copious amounts of water and seek medical advice.

g) Do not use any charger other than that specifically provided for use with the equipment.

h) Observe the plus(+) and minus(-) marks on the cell, battery and equipment and ensure correct use.

i) Do not use any cell or battery which is not designed for use with the equipment.

j) Do not mix cells of different manufacturer, capacity, size or type within a device.

k) Battery usage by children should be supervised.

l) Seek medical advice immediately if a cell or a battery has been swallowed.

m) Always purchase the battery recommended by the device manufacturer for the equipment.

n) Keep cells and batteries clean and dry.

o) Wipe the cell or battery terminals with a clean dry cloth if they become dirty.

p) Secondary cells and batteries need to be charged before use. Always use the correct charger and refer to the manufacturer's instructions or equipment manual for proper charging instructions.

q) Do not leave a battery on prolonged charge when not in use.

r) After extended periods of storage, it may be necessary to charge and discharge the cells or batteries several times to obtain maximum performance.

s) Retain the original product literature for future reference.

t) Use only the cell or battery in the application for which it was intended.

u) When possible, remove the battery from the equipment when not in use.

v) Dispose of properly.

Details of the Manufacturer of the safety data sheet：

Name：Jinyun Reypu Electronic Technology Co.,Ltd.

Address**:** NO. No.9 Xinxing Road, Xinbi Street, Jinyun, Lishui, Zhejiang, China.

Telephone number of the supplier：+86-0578-3990590

Fax：N/A Postcode：523000

E-mail address： liudejun@reypu.com

Emergency telephone number

Company Emergency Phone Number: +86-0578-3990590

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Classification of the substance or mixture

Classification according to GHS

ACUTE TOXICITY-ORAL

Hazard category: 4

Signal world: Warning

Hazard statement: Harmful if swallowed

Pictogram: 

Prevention：Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Response：Call a Poison center or doctor/physician if you feel unwel

Storage:

Disposal: Dispose of contents/container in accordance with local/national regulations

ACUTE TOXICITY-DERMAL

Hazard category: 4

Signal world: Warning.

Hazard statement: Harmful in contact with skin

Pictogram: 

Prevention：Wear protective gloves/protective clothing

Response：Call a Poison center or doctor/physician if you feel unwel

Storage:

Disposal: Dispose of contents/container in accordance with local/national regulations

SKIN CORROSION/IRRITATION

Hazard category: 2

Signal world: Warning.

Hazard statement: Causes skin irritation.

Pictogram: 

Prevention：Wash thoroughly after handing. Wear protective gloves.

Response：Take off contaminated clothing and wash it before reuse.

Storage:

Disposal:

SENSITIZATION-SKIN

Hazard category: 1A

Signal world: Warning

Hazard statement: May cause an allergic skin reaction.

Pictogram: 

Prevention：Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves.

Response：If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Storage:

Disposal: Dispose of contents/container in accordance with local/national regulations.

EXPLOSIVES (CONTINUED)

Hazard category: Division 1.4

Signal world: Warning

Hazard statement: Fire or project hazard.

Pictogram: 

Prevention：Keep away from heat/sparks/open flames/hot surfaces.-No smoking.

Response：In case of fire: evacuate area. Explosion risk in case of fire. Do NOT fight fire reaches explosives.

Storage: Store in accordance with local/regional/national/international regulations.

Disposal: Dispose of contents/container in accordance with local/national regulations.

FLAMMABLE SOLIDS

Hazard category: 2

Signal world: Warning

Hazard statement: Flammable solid.

Pictogram: 

Prevention：Keep away from heat/sparks/open flames/hot surfaces.-No smoking.

Response：In case of fire: Use to extinguish.

Storage:

Disposal:

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Description:

Product: Consisting of the following components

Chemical Composition	Chemical Formula	Weight(%)	CAS Number
Lithium Manganese Nickel And Cobalt	$LiNi_xCo_yMn_{1-x-y}O_2$	35.2	182442-95-1
Styrene-Butadiene-Rubber	$(C_8H_8.C_4H_6)x$	20.5	9003-55-8
Carbon	C	15.8	7440-44-0
Lithium Hexafluorophosphate	$LiPF_6$	8.3	21324-40-3
Ethylene carbonate	$C_3H_4O_3$	1.2	96-49-1
Ethyl methyl carbonate	$C_4H_8O_3$	0.6	623-53-0
Polypropylene	$C_{22}H_{42}O_3$	1.25	9003-07-0
Dimethyl carbonate	$C_3H_6O_3$	2.8	616-38-6
PVDF	$(CH_2-CF_2)n$	0.25	24937-79-9
Nickel	Ni	4.0	7440-02-0
Copper Foil	Cu	4.0	7440-50-8
Iron	Fe	6.1	7439-89-6

Note: CAS number is Chemical Abstract Service Registry Number.
N/A=Not apply.

4. FIRST-AID MEASURES

First aid measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Remove contaminated clothing and shoes. Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Swallowing Do not induce vomiting. Get medical attention.

Most Important Symptoms/Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Test symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

CO2, dry chemical powder, water spray.

Unsuitable Extinguishing Media: No information available.

Specific Hazards Arising from the Chemical

Formation of toxic gases is possible during heating or case of fire.

In case of fire, the following can be released:

Carbon monoxide (Co)

Carbon dioxide

Other irritating and toxic gases.

Hazardous Combustion Products

Carbon oxides.

Explosion Date

Sensitivity to Mechanical Impact No

Sensitivity to Static Discharge No

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. For example: Wear self-contained respiratory protective device.

Wear suitable protective clothing and eye/face protection.

Special hazards arising from the substance or mixture:

Battery may burst and release hazardus decomposition products when exposed to a fire situation.
Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature (>150°C), When damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes.

Refer to section 8 for personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas.

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning up Use personal protective equipment. Dam up. Cover liquid spill with sand, earth or other Non combustible absorbent material. Pick up and transfer to properly labelled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handing Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Wash thoroughly after handling. Use this material with adequate ventilation.

The Product is not explosive.

Conditions for safe storage, including any incompatibilities

If the Lithium-ion Battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium-ion Battery Periodically.

3 months: -20°C~ +45°C, 45 to 85% RH

And recommended at -20°C~ +25°C for long period storage.

The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more.

The voltage for a long time storage shall be 2.8-4.2V range.

Do not storage Lithium-ion 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 Lithium-ion Polymer Battery to heat or fire. Avoid storage in direct sunlight.

Do not store together with oxidizing and acidic materials.

Keep ignition sources away- Do not smoke.

Store in cool, dry and well-ventilated place.

Incompatible Products None known.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Ingredients with limit values that require monitoring at the workplace:
12190-79-3 Lithium Cobalt Oxide

TLV(USA)	0.02mg/m³
MAK(Germany)	0.1mg/m³

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Measures Showers

Eyewash stations

Ventilation systems

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible Exposure limits. Ensure or adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/Face Protection:

Tightly sealed goggles

Body protection:

Protective work clothing.

Skin protection:

Protective gloves

Material of gloves:

The selection of the suitable gloves does not noly depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is preparation of several substances, the resistance of the glove material can not to be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material:

The exact break trough time has to be found out by manufacturer of the Protective gloves and has to be observed.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good Industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physician State	Form: Quadrate shape	
	Colour: Blue	
	Odour: Odourless	
	Odor Threshold: No information avaliable	
Change in condition:		
pH, with indication of the concentration		Not determined.
Melting Point/freezing point		Not determined.
Initial boiling point and Boiling range:		Not determined.
Flash Point		Not determined.
Evaporation rate		Not determined.
Flammability (solid, gas)		Not determined.
Upper/lower flammability or explosive limits		Not determined.
Vapor Pressure:		Not determined.
Vapor Density:		Not determined.
relative density:		Not determined.
Solubility in Water:		Not determined.
Solubility in other solvents		Not determined.
n-octanol/water partition coefficient		Not determined.
Auto-ignition temperature		Product is not self-igniting.
Decomposition temperature		Not determined.
Odout threshold		Not determined.
Evaporation rate		Not determined.
Viscosity		Not determined.
Other Information		No further relevant information available.

10. STABILITY AND REACTIVITY

Reactivity: Stable under recommended storage and handling conditions (see section 7, Handling and storage)
Chemical stability: Stable Under normal conditions of use, storage and transport.
Thermal decomposition/conditions to be avoided: No decomposition if used according to specifications.
Possibility of Hazardous Reactions: None under normal processing.
Hazardous Polymerization: Hazardous polymerization does not occur.
Conditions to avoid: Strong heating, fire, Incompatible materials.
Incompatible materials: Strong oxidizing agents. Strong acids. Base metals.
Hazardous Decomposition Products: Carbon oxides, Other irritating and toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute toxiciy: No data available.

LD/LC50 values relevant for classification:
Not available.

Skin corrosion/irritation: No irritant effect.
Serious eye damage/irritation: Cause serious eye irritation.
Respiratory or skin sensitization: No sensitizing effects known.
Specific target organ system toxicity: No information available.
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction: No information available.

12. ECOLOGICAL INFORMATION

Toxicity:

Acquatic toxicity:
No further relevant information available.

Persistence and degradability: No further relevant information available.
Bioaccumulation potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation: Must not be disposed together with household garbage.
Do not allow product to reach sewage system
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

Land transport

ADR/RID class: Not regulated.

UN-Number: UN3480 or UN3481

Maritime transport

IMDG Class: Class 9.

UN Number: UN3480 or UN3481

Marine pollutant: No

Air transport

ICAO/IATA Class: Class 9

UN/ID Number: UN3480 or UN3481.

Environmental hazards: Not applicable.

Special precautions for user: Not applicable.

Transport/Additional information: Not restricted goods according to the above specifications.

The Li-ion Battery bad been tested according to the requirements of the UN manual of tests and Criteria, Part III, subsection 38.3;

The Li-ion Battery according to SectionⅡ/Section IB of PACKING INSTRUCTION 965, or Section II of PACKING INSTRUCTION 966~967 of the Dangerous Goods regulations 62nd Edition may be transported.

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking.

The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

Meets requirements of DOT Special Provision 188 to be transported as non-dangerous goods

Meets the requirements of 49CFR173.185 to be transported as non-dangerous goods for road, rail, air, and vessel (Effective August 6, 2014 per HM224F)

The package must be handled with care and that a flammability hazard exists if the package is damaged;

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation:

Authorisations: No information available.

Restrictions on use: No information available.

Regulatory information

CAS NO.	EU (EINECS)	US (TSCA)	Japan (ENCS)	Canada (DSL/ NDSL)	Australia (AICS)	Korea (ECL)	China (IECSC)
182442-95-1	Listed	Not listed	Not listed	NDSL	Not listed	Not listed	Not listed
7782-42-5	Listed	Listed	Listed	DSL	Listed	Listed	Listed
7439-89-6	Listed	Listed	Listed	DSL	Listed	Listed	Listed
7440-50-8	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
96-49-1	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
623-53-0	Listed	Listed	Listed	DSL	Listed	Listed	Listed
21324-40-3	Listed	Listed	Listed	DSL	Listed	Listed	Listed
114435-02-8	Listed	Listed	Listed	DSL	Listed	Listed	Listed
14283-07-9	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
7440-02-0	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
1333-86-4	Listed	Listed	Listed	DSL	Listed	Listed	Listed
872-50-4	Listed	Listed	Listed	DSL	Listed	Listed	Listed
7440-47-3	Listed	Listed	Listed	DSL	Listed	Listed	Listed
554-13-2	Listed	Listed	Listed	DSL	Listed	Listed	Listed

Chemical safety assessment A Chemical Safety Assessment has not been carried out

16. OTHER INFORMATION

This information is based on out present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant Phrases:

R20/22: Harmful by inhalation and if swallowed.

R36: Irritating to eyes.

H302: Harmful if swallowed.

H332: Harmful if inhaled.

Important

1. Nobody is allowed to photocopy or partly photocopy this test report without written permission of UTL.

2. The test report is invalid without the signatures of Approver, Reviewer and Tester.

3. The test report is invalid if altered.

4. Objections to the test report must be submitted to UTL within 15 days.

5. Throughout this report a point is used as the decimal separator.

6. The test report is valid for the tested samples only.

7. The test report does not grant applicant the use of UTL name, trademark or label.

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****** **End of Test Report** ******