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Report No.: I01133064416D~1

MSDS Report

Sample Name & Model	Polymer Li-ion Battery Autec Battery (HY PL357095)
Applicant	SHENZHEN REDSUN ENERGY TECHNOLOGY CO., LTD
Address	6 Floor, Weicheng Industrial Zone, No.171, 1 Road, Gushu, Bao'an District, Shenzhen

No.: I01133064416D
Code: mvac5z



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Material Safety Data Sheet

According to ISO11014:2009 & GB16483-2008

Section 1 - Chemical Product and Company Identification

Chemical product identification

Product Name: Polymer Li-ion Battery Autec Battery

Battery Type: HY PL357095

Company identification

Manufacturer: SHENZHEN REDSUN ENERGY TECHNOLOGY CO., LTD

Address: 6 Floor, Weicheng Industrial Zone, No.171, 1 Road, Gushu, Bao'an District,
Shenzhen

Tel: 0755-26410755

Fax: 0755-26418955

Post code: 518000

Further Information obtainable from

Emergency telephone: 0755-26410755

E-mail: szhygd@163.com

Section 2 - Hazards Identification

No harm at the normal use. If contact the electrolyte in the battery, reference as follows:

Classification of the substance or mixture

Classification according to GHS

Acute toxicity, Oral (Category 4)

Acute toxicity, Dermal (Category 3)

Skin, irritate (Category 1B)

Eyes, irritate (Category 1)

Label elements

Labelling according to Regulation (EC) No 1272/2008[CLP]

Hazard pictogram(s):



Signal word:

Danger

Hazard statement(s):

H311: Toxic in contact with skin.



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H314: Causes severe skin burns and eye damage
 H302: Harmful if swallowed.

Precautionary statement(s):

Prevention: P280: Wear protective gloves/protective clothing/eye protection / face protection.

Response: P312: Call a POISON CENTER or doctor/ physician if you feel unwell.
 P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water
 P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Disposal: P501: Dispose of contents/container in accordance with local/national regulations

Other hazards No information available.

Section 3 - Composition, Information on Ingredients

Chemical characterization: Mixture

Chemical Composition	CAS No.	EC#	Weight (%)
Aluminum Foil	7429-90-5	231-072-3	7
Copper Foil	7440-50-8	231-159-6	11
Nickel	7440-02-0	231-853-9	0.5
Lithium Cobalt Oxide	12190-79-3	235-362-0	38
Carbon	1333-86-4	231-153-3	19.5
PVDF	24937-79-9	200-867-7	1
Laminated Film	---	---	4
Lithium Hexafluorophosphate	21324-40-3	244-334-7	15
EM	109-86-4	231-791-2	
EMC	623-53-0	---	
Organic Solvents	---	---	4



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Section 4 - First Aid Measures

Description of first aid measures

General information No special measures required.

After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

After skin contact

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

After inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After swallowing

Do not induce vomiting. Get medical attention.

Information for doctor:

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

Section 5 - Fire Fighting Measures

Flammability: Not available.

Extinguishing media

Suitable extinguishing agents

Use extinguishing agent suitable for local conditions and the surrounding environment .
Such as dry powder , CO₂.

Special hazards arising from the substance or mixture

Battery may burst and release hazardous 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(302°F)), 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.

Advice for firefighters



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Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Environmental precautions

Do not allow material to be released to the environment without proper governmental permits.

Steps to be taken in case material is spilled or released

Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water.

Waste disposal method

All waste must refer to the United Nations, the national and local regulations for disposal.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7 - Handling and Storage

Handling

Precautions for safe handling

Consumption of food and beverage should be avoided in work areas.

Wash hands with soap and water before eating, drinking.

Ground containers when transferring liquid to prevent static accumulation and discharge.

Information about fire and explosion protection

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles

Store in a cool, dry, well-ventilated place.

Information about storage in one common storage facility



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Keep away from heat, avoiding the long time of sunlight.

Further information about storage conditions

Keep container tightly sealed.

Specific and use

No further relevant information available.

Section 8 - Exposure Controls, Personal Protection

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
12190-79-3 Lithium Cobalt Oxide	
TLV (USA)	0.02mg/m ³ .
MAK(Germany)	0.1mg/m ³ .

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Respiratory Protection

Use suitable respirator when high concentrations are present.

Personal Protection

Protection of hands



Protective gloves

Eye protection



Tightly sealed goggles

Section 9 - Physical and Chemical Properties



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Information on basic physical and chemical properties

General information

Appearance:	Silver.
Form:	quadrate.
Odour:	Odorless.
pH:	Not available.
Change in condition	
Melting point:	Not available.
Boiling point:	Not available.
Freezing point	Not available.
Flash point:	Not available.
Flammability:	Not available.
Ignition temperature:	Not available.
Decomposition temperature:	Not available.
Self-igniting:	Not available.
Danger of explosion:	Not available.
Explosion limits	
Lower:	Not available.
Upper:	Not available.
Oxidizing properties:	Not available.
Vapour pressure:	Not available.
Density:	Not available.
Relative density:	Not available.
Vapour density:	Not available.
Evaporation rate:	Not available.
Solubility in/Miscibility with water:	Not available.
n-octanol/water partition coefficient:	Not available.
Viscosity	Not available.
Dynamic:	Not available.
Kinematic:	Not available.
Other information:	
Voltage	3.7V
Electric capacity	2800mAh

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Section 10 - Stability and Reactivity

Reactivity: Data not available.

Chemical stability: Stable.

Possibility of hazardous reactions: Data not available.

Conditions to Avoid

Flames, sparks, and other sources of ignition, incompatible materials.

Incompatibilities

Oxidizing agents, acid, base.

Hazardous Combustible Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

Hazardous Polymerization

N/A.

Section 11 - Toxicological Information

Information on toxicological effects

Acute toxicity

LD/LC50 Values relevant for classification:

Not available.

Primary irritant effect

No further relevant information available.

Sensitization:

No further relevant information available.

Additional toxicological information:

Toxicological, metabolism and distribution:

No further relevant information available.

Acute effects (acute toxicity, irritation and corrosivity):

No further relevant information available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):

No further relevant information available.

Section 12 - Ecological Information

Toxicity

Aquatic toxicity: No further relevant information available.



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Persistence and degradability: No further relevant information available.

Behaviour in environmental systems

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Ecological effects

Additional ecological information

General notes:

Do not allow material to be released to the environment without proper governmental permits.

Other adverse effects: No further relevant information available.

Section 13 - Disposal Considerations

Waste treatment methods

Recommendation:

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packaging

Recommendation: Disposal must be made according to official regulations.

Section 14 - Transport Information

UN Number	
IATA	UN3481
IMDG	None
Model Regulation	None
UN Proper shipping name	
IATA	Lithium Ion Batteries Contained In Equipment
IMDG	None
Model Regulation	None
Transport hazard class(es)	
IATA	9
IMDG	None
Model Regulation	None
Packing group	
IATA	None
IMDG	None
Model Regulation	None



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Environmental hazards

Marine pollutant:	No
Special precautions for user	Not applicable.

Transport information: The Polymer Li-ion Battery Autec Battery (HY PL357095) has passed the test UN38.3, according to the report ID: H07163032021D and H07163032021D~1.

According to the Packing Instruction 967 section II of IATA DGR 55th Edition for transportation.

According to the special provision 188 of IMDG (36-12) or the <<Recommendations On The Transport Of Dangerous Goods-Model Regulations>> (18th). The products are not subject to dangerous goods.

More information concerning shipping, testing, marking and packaging can be obtained from Label master at <http://www.labelmaster.com>.

Separate Lithium-ion batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain.

Note: Batteries weight in the package <5kg(By air, Batteries installed in equipment).

Transport Fashion: By air, by sea, by railway, by road.

Section 15 - Regulatory Information

This Material Safety Data Sheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

Composition	CAS#	TSCA	EC#	EINECS
Aluminum Foil	7429-90-5	Listed	231-072-3	Listed
Copper Foil	7440-50-8	Listed	231-159-6	Listed
Nickel	7440-02-0	Listed	231-853-9	Listed
Lithium Cobalt Oxide	12190-79-3	Listed	235-362-0	Listed
Carbon	1333-86-4	Listed	231-153-3	Listed



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PVDF	24937-79-9	Listed	200-867-7	Listed
Lithium Hexafluorophosphate	21324-40-3	Listed	244-334-7	Listed
EM	109-86-4	Listed	231-791-2	Listed
EMC	623-53-0	Listed	---	Not Listed

Section 16 - Additional Information

Abbreviations and acronyms

CLP:	EU regulation (EC) No 1272/2008 on classification, labelling and packaging of chemical substances and mixtures.
CAS:	Chemical Abstracts Service (Division of the American Chemical Society).
ACGIH:	American Conference of Governmental Industrial Hygienists
TLV:	Threshold Limit Value
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods
LC50:	lethal concentration, 50 percent kill
LD50:	lethal dose, 50 percent kill
TWA	Time Weighted Average
TSCA	United States Toxic Substances Control Act Section 8(b) Inventory
EINECS	European Inventory of Existing Commercial Chemical Substances
Model Regulation	Recommendations on the Transport of Dangerous Goods Model Regulations

Declare to reader

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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End of report