MATERIAL SAFETY DATA SHEET

Lithium Polymer Rechargeable Battery

Model: Lithium-ion Polymer Battery

Prepared by	Approved by
Jianyong Li	Wangmei Zhang
Date： Jan. 10，2013	Date： Jan. 10，2013

Material Safety Data Sheet

Section 1-Chemical Product and Company Identification

Product Identification

SP Lithium-Ion Polymer battery

Norminal Voltage : 3.7 V

Equivalent Lithium content : ≤20 Wh

Testing Period : Jan. 07，2013 To Jan. 09，2013

Manufacturer

SPRINGPOWER TECHOLOGY SHENZHEN CO.,LTD

Chaoshun Industrial Zone, Renmin Road, Fumin, Guanlan, Baoan, Shenzhen, Guangdong, China

Postcode : 518110

Telephone : +86-755- 61862699-818

Fax : +86-755-29522241

E-mail : jyli@highpowertech.com

Section 2-Composition/Information on Ingredients

Chemical Composition	Molecular Formula	Weight%	CAS No	OSHA(PEL)	ACGIH(TLV)
Lithium Cobalt Oxide	$LiCoO_2$	35～38%	12190-79-3	N/A	N/A
Graphite powder	C	23～25%	7782-42-5	N/A	N/A
Electrolyte	$LiPF_6$ $C_3H_4O_3$ $C_4H_6O_3$ $C_3H_{10}O_3$	12～15%	21324-40-3	N/A	N/A
Polyethylene	（C_2H_4）n	0.5～1%	9002-88-4	N/A	N/A
Cu	Cu	5～10%	7440-50-8	N/A	N/A
Nickel	Nickel	2～3%	7440-02-0	N/A	N/A
Polyvinylidene fluoride	（CH_2CF_2）n	0.5～2%	24937-79-9	N/A	N/A
Polypropylene	（C_3H_6）n	2～5%	9003-07-0	N/A	N/A
Aluminum foil	Al	7～10%	7429-90-5	N/A	N/A

Section 3-Hazards Identification

Preparation hazards and classification	Not dangerous with normal use. Do not dismantle, open or shred Li-ion Battery. Exposure to the ingredients contained within or their ingredients products could be harmful.
Appearance, Color, and Odor	Solid object with no odor, no color.
Primary Route(s) of Exposure	These chemicals are contained in a sealed stainless steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact.
Potential Health Effects:	ACUTE (short term): see Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns. Inhalation: Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation. Ingestion: Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. Skin: Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin. Eye: Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye. CHRONIC (long term): see Section 11 for additional toxicological data
Medical Conditions Aggravated by Exposure	Not applicable
Reported as carcinogen	Not applicable

Section 4-First-aid Measures

Inhalation	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice.
Skin contact	If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention.

	Completely decontaminate clothing, shoes and leather goods before reuse or discard.
Eye contact	If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.
Ingestion	If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

Section 5-Fire Fighting Measures

Flammable Properties	In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.
Suitable extinguishing Media	Use extinguishing media suitable for the materials that are burning.
Unsuitable extinguishing Media	Not available
Explosion Data	Sensitivity to Mechanical Impact: This may result in rupture in extreme cases Sensitivity to Static Discharge: Not Applicable
Specific Hazards arising from the chemical	Fires involving Li-ion Battery can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire
Protective Equipment and precautions for firefighters	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus(SCBA) with full protective gear.
NFPA	Health: 0 Flammability: 0 Instability: 0

Section 6-Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	Restrict access to area until completion of clean-up. Do not touch t he 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.
Methods and materials for Containment	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods and materials for cleaning up	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an 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.

Section 7-Handling and Storage

Handling	Don't handling Li-ion Battery with metalwork. Do not open, dissemble, crush or burn battery. Ensure good ventilation/ exhaustion at the workplace. Prevent formation of dust. Information about protection against explosions and fires: Keep ignition sources away- Do not smoke.
Storage	If the Li-ion Battery are subject to storage for such a long term as more than 3 months, it is recommended to recharge the Li-ion Battery periodically. 3 months: -10℃~+40℃, 45 to 85%RH And recommended at 0℃~+35℃ 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 3.7V~4.2V range.

	Do not storage Li-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 Li-ion 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	Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place.
Personal Protective Equipment	Respiratory Protection: Not necessary under normal conditions. Skin and body Protection: Not necessary under normal conditions, Wear neoprene or nitrile rubber gloves if handling an open or leaking battery. Hand protection: Wear neoprene or natural rubber material gloves if handling an open or leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.
Other Protective Equipment	Have a safety shower and eye wash fountain readily available in the immediate work area.
Hygiene Measures	Do not eat, drink, or smoke in work area. Maintain good housekeeping.

Section 9-Physical and Chemical Properties

Physical State	Form: Solid	
	Color: White	
	Odour: Monotony	
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 desity	Not available.
Solubility in Water:	Insoluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	130℃
Decomposition temperature	Not available.
Odout threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	Not available.
Viscosity	Not applicable

Section 10- Stability and Reactivity

Stability	The product is stable under normal conditions.
Conditions to Avoid (e.g. static discharge, shockor vibration)	Do not subject Li-ion Batteryto mechanical shock. Vibration encoutered during transportation does not cause leakage, fire or explosion. Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse.
Incompatible Materials	Not Available
Hazardous Decomposition Products	This material may release toxic fumes if burned or exposed to fire
Possibility of Hazardous Reaction	Not Available

Section 11-Toxicological Information

Irritation	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
Sensitization	Not Available
Neurological Effects	Not Available
Teratoaenicitv	Not Available
Reproductive Toxicity	Not Available
Mutagenicity (Genetic Effects)	Not Available
Toxicologically Synergistic Materials	Not Available

Section 12-Ecological Information

General note:	Water hazard class 1(Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Anticipated behavior of a chemical product in environment/possible environmental impace/ecotoxicity	Not Available
Mobility in soil	Not Available
Persistence and Degradability	Not Available
Bioaccumulation potential	Not Available
Other Adverse Effects	Not Available

Section 13-Disposal Considerations

Product disposal recommendation: Observe local, state and federal laws and regulations. Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

The potential effects on the environment and human health of the substances used in batteries and accumulations; the desirability of not disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.

Section 14-Transport Information

This report applies to by sea, by air and by land;
The Li-ion Battery tested according to the requirements of the 5th revised edition of the UN manual of tests and Criteria, Part Ⅲ, subsection 38.3；
Lithium ion battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;
The LITHIUM ION BATTERY according to Section Ⅱ/Section IB of PACKING INSTRUCTION 965, or Section Ⅱ of PACKING INSTRUCTION 966~967 of the 2013 IATA Dangerous Goods regulations 54th Edition may be transported. and applicable U.S.DOT regulations for the safe transport of Li-ion Battery.
More information concerning shipping, testing, marking and packaging can be obtained from label master at http://www.labelmaster.com/.
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.
The package must be handled with care and that a flammability hazard exists if the package is damaged; Each package must be labeled with a Li-ion Battery handling label or in addition to the Class 9 hazard label. With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations. UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;
UN Classification (Transport hazard class): Non dangerous;
Marine pollutant (Y/N): N;

- The International Maritime Dangerous Goods (IMDG) Code.

For lithium-ion batteries by sea, provided that packaging is strong and prevent the products from short-circuit. UN number of lithium battery: UN3480 or UN3481;
UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;
UN Classification (Transport hazard class): Non dangerous; Marine pollutant (Y/N): Y;
Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 310, 348, 957;

- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA
- The Office of Hazardous Materials Safety within the US Department of Transportations' (DOT) Research and Special Programs Administration (RSPA)

Section 15-Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

_____Hazardous _____V_____Non-hazardous

Section 16-Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, concorde makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration of investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

SYNERGY SCIENTECH CORP. -- Advanced Hybrid Batteries

SAFETY DATA SHEET

Manufacturer's CAGE: SYNERGY

Part No. Indicator: A

Part Number/Trade Name: AHB Series- Lithium ion Polymer batteries.

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1. General Information

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Company's Name: SYNERGY SCIENTECH CORP.

Company's Street: 7F, No. 9, Park Ave. II, Hsinchu Science Park, Hsinchu, Taiwan 30075 R.O.C.

Company's City: HSIN-CHU, TAIWAN

Company's Emerge Ph #: 886-3-564-3700

Company's Info Ph #: 886-3-564-3700

Record No. For Safety Entry: 001

Tot Safety Entries This Sty #: 001

Status: SMJ

Date MSDS Prepared: January 1, 2019 (12th Edition)

Safety Data Review Date: January 1, 2019

MSDS Preparer's Name: Dr. Brian Shen

Preparer's Company: SAME

MSDS Serial Number: LIASN

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2. Hazards Identification

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Signal word

Route of Entry - Inhalation: YES

Route of Entry - Skin: YES

Route of Entry - Ingestion: YES

Health overexposure Acute and Chronic: UNDER NORM CNDTNS OF USE, THESE CHEMICALS ARE CONTAINED IN SEALED CAN. RISK OF EXPOS OCCURS ONLY IF BATTERY IS MECHANICALLY ABUSED. ACUTE: INHAL: CONTENTS OF OPENED BATTERY CAN CAUSE CONTENTS OF OPENED BATTERY CAN CAUSE IRRIT.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

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3. Composition/information on ingredients

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Material Name. (e.g. Sn alloy)	Substance Name (e.g. Copper (Cu))	CAS No.	Percentage (%)
active material	$LiCoO_2$	12190-79-3	32.62
Binder-PVDF	Polyvinylidene difluoride	24937-79-9	1.04
Conductive material	Carbon	1333-86-4	0.78
Conductive material	Carbon	1333-86-4	0.26
Foil	Aluminum	7429-90-5	4.61
active material	Carbon	1333-86-4	15.92
Binder-PVDF	Polyvinylidene difluoride	24937-79-9	1.3
conductive material	Carbon	7440-44-0	0.09
additive	Oxalic acid	144-62-7	0.05
foil	Copper	7440-50-8	7.87
electrolyte-solvent	Ethylene carbonate	96-49-1	5.06
electrolyte-solvent	Diethyl carbonate	105-58-8	3.72
electrolyte-solvent	Ethyl methyl carbonate	623-53-0	3.74
electrolyte-additive	Lithium hexafluorophosphate	21324-40-3	1.82
electrolyte-additive	1,3-propanesultone	1120-71-4	0.09
separator	Polyethylene	9002-88-4	3.62
tape-film	Polyimide	75-55-8	0.1
tape-adhesive	Acrylic	9011-14-7	0.03
tape-film	Polyester	25038-59-9	0.14
tape-adhesive	Acrylic	9011-14-7	0.03
Al bag	Nylon	32131-17-2	3.85
Al bag	Aluminum	7429-90-5	9.75
Al bag	Polypropylene	9003-07-0	2.57
tab lead	Nickel	7440-02-0	0.38
tab lead	polypropylene	9003-07-0	0.05
tab lead	Aluminum	7429-90-5	0.24
tab lead	polypropylene	9003-07-0	0.05
tab	Nickel	7440-02-0	0.22

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4. First Aid Measures

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Explanation Carcinogenicity: NOT RELEVANT.

Signs/Symptoms of Overexposure: SEE HEALTH HAZARDS.

Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.

WASH WITH SOAP AND WATER. EYES: IMMEDIATELY FLUSH THOROUGHLY WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION.

INGESTION: CALL MD IMMEDIATELY (FP N).

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5. Fire Fighting Measures

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Extinguishing Media: IN CASE OF FIRE, USE CARBON DIOXIDE OR DRY CHEMICAL EXTINGUISHERS.
Special Fire Fighting Proc: WEAR NIOSH APPROVED SCBA & FULL PROTECTIVE EQUIPMENT (FPN).
Unusual Fire And Expel Hazards: NONE SPECIFIED BY MANUFACTURER.

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6. Accidental Release Measures

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Wear appropriate personal protective equipment. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

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7. Handling and Storage

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Wear suitable chemical resistant gloves, safety glasses and filtered cartridge respirator. Goggles, full face protection and other protective clothing is required if potential exists for direct exposure to liquid battery electrolyte.
In case Material is released or spilled: Carefully recover spillages with appropriate ladle and transfer to a suitably labeled, sealable container for safe disposal. Wash the spillage area neutralized with calcium hydroxide. Wear suitable personal protection during removal of spillages.
Be stored in clearly labeled, tightly closed exclusive containers in a cool, dry area.

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8. Exposure Controls/Personal Protection

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Ventilation: Use local exhaust.
Protective Gloves: Wear rubber or plastic gloves.
Eye/Face Protection: Wear safety glasses, goggles or full face protections.
Respiratory Protection: Wear filtered cartridge respirator or a respirator of greater protection.

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9. Physical and Chemical Properties

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Product Type: Solid
Appearance: Prismatic
Odor: Odorless

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10. Stability and Reactivity

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Stability: YES

Cond To Avoid (Stability): NONE SPECIFIED BY MANUFACTURER.

Materials To Avoid: NONE SPECIFIED BY MANUFACTURER.

Hazardous Decamp Products: NONE SPECIFIED BY MANUFACTURER.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT RELEVANT.

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11. Toxicological Information

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In case electrolyte is spilled and explored with air, the HF could be released.

May include hydrogen fluoride and carbon oxides gas.

May cause skin and eye irritation when contacted.

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12. Ecological Information

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If the battery scrapped, it should be selected and disposed by professional company.

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13. Disposal Consideration

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Disposal should be in accordance with local, state or national legislation.

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14. Transport Information

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Limit per package

* Shipment Requirements 30%SOC

*Equal to or less than 2.7Wh=2.5kg ; or Greater than 2.7Wh but equal to or less than 20Wh=8 cells , or Greater than 2.7 but equal to less than 100Wh=2 batteries.

*Limit of 8 Cells/ 2 batteries per package or overpack.

*Only 1 package containing Section II batteries Of UN 3480 may be included in any overpack or consignment.

UN 38.3 Lithium Battery		Test results	Remarks
NO	Test item	OK	Test 1 to 5 must be conducted in sequence on the same cell or battery
T1	Altitude simulation	OK	
T2	Thermal test	OK	
T3	Vibration	OK	
T4	Shock	OK	
T5	External short circuit	OK	
T6	Impact	OK	
T7	Overcharge	OK	Only battery do need this test item
T8	Forced discharge	OK	For cell only

The product is not classified as dangerous under the current edition of the 60th Edition IATA dangerous goods regulations. The products are safe for air transportation and not regulated by IATA DGR. Also they comply with the PI-965 to PI-967 Section II accordingly.

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15. Regulatory Information

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See ACGIH exposure limits information as noted in Section 3.

US: This MSDS meets/exceeds OSHA requirements

International: this MSDS conforms to European Union (UN), the International Standards Organization (ISO) and the International Labor Organization (ILO) and as documental in ANSI (American National Standards Institute) Standard Z400.1-1993.

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16. Other Information

Reference:

Chemical substances information: Japan Advanced Information center of Safety and Health

International Chemical Safety Cards (ICSCs): International Occupational Safety and Health Information Centre (CIS)

2002 TLVs and BELs: American Conference of Governmental Industrial Hygienists (ACGIH)

Dangerous Goods Regulations-60th Edition : International Air Transport Association (IATA)

IMDG Code-2014 Edition: International Maritime Organization (IMO)

The European Agreement concerning the International Carriage of Dangerous Goods by Road-2016: The United Nations Economic Commission for Europe (UNECE)

MSDS of raw materials prepared by the manufactures

SYNERGY SCIENTECH CORP. -- Advanced Hybrid Batteries

SAFETY DATA SHEET

Manufacturer's CAGE: SYNERGY

Part No. Indicator: A

Part Number/Trade Name: AHB Series- Lithium ion Polymer batteries.

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Signal word

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Route of Entry - Skin: YES

Route of Entry - Ingestion: YES

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Carcinogenicity - NTP: NO

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Material Name. (e.g. Sn alloy)	Substance Name (e.g. Copper (Cu))	CAS No.	Percentage (%)
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Binder-PVDF	Polyvinylidene difluoride	24937-79-9	1.04
Conductive material	Carbon	1333-86-4	0.78
Conductive material	Carbon	1333-86-4	0.26
Foil	Aluminum	7429-90-5	4.61
active material	Carbon	1333-86-4	15.92
Binder-PVDF	Polyvinylidene difluoride	24937-79-9	1.3
conductive material	Carbon	7440-44-0	0.09
additive	Oxalic acid	144-62-7	0.05
foil	Copper	7440-50-8	7.87
electrolyte-solvent	Ethylene carbonate	96-49-1	5.06
electrolyte-solvent	Diethyl carbonate	105-58-8	3.72
electrolyte-solvent	Ethyl methyl carbonate	623-53-0	3.74
electrolyte-additive	Lithium hexafluorophosphate	21324-40-3	1.82
electrolyte-additive	1,3-propanesultone	1120-71-4	0.09
separator	Polyethylene	9002-88-4	3.62
tape-film	Polyimide	75-55-8	0.1
tape-adhesive	Acrylic	9011-14-7	0.03
tape-film	Polyester	25038-59-9	0.14
tape-adhesive	Acrylic	9011-14-7	0.03
Al bag	Nylon	32131-17-2	3.85
Al bag	Aluminum	7429-90-5	9.75
Al bag	Polypropylene	9003-07-0	2.57
tab lead	Nickel	7440-02-0	0.38
tab lead	polypropylene	9003-07-0	0.05
tab lead	Aluminum	7429-90-5	0.24
tab lead	polypropylene	9003-07-0	0.05
tab	Nickel	7440-02-0	0.22

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3. Composition/information on ingredients

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Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.
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7. Handling and Storage

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Wear suitable chemical resistant gloves, safety glasses and filtered cartridge respirator. Goggles, full face protection and other protective clothing is required if potential exists for direct exposure to liquid battery electrolyte.
In case Material is released or spilled: Carefully recover spillages with appropriate ladle and transfer to a suitably labeled, sealable container for safe disposal. Wash the spillage area neutralized with calcium hydroxide. Wear suitable personal protection during removal of spillages.
Be stored in clearly labeled, tightly closed exclusive containers in a cool, dry area.

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8. Exposure Controls/Personal Protection

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Ventilation: Use local exhaust.
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9. Physical and Chemical Properties

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Product Type: Solid
Appearance: Prismatic
Odor: Odorless

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10. Stability and Reactivity

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Stability: YES
Cond To Avoid (Stability): NONE SPECIFIED BY MANUFACTURER.
Materials To Avoid: NONE SPECIFIED BY MANUFACTURER.
Hazardous Decamp Products: NONE SPECIFIED BY MANUFACTURER.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT.

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13. Disposal Consideration

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Disposal should be in accordance with local, state or national legislation.

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14. Transport Information

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With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions, Packing Instruction 965, Section ⅠB or Ⅱ (2018-2019 Edition),

The International Air Transport Association (IATA) Dangerous Goods Regulations, Packing Instruction 965, Section ⅠB or Ⅱ (60^{th} Edition, 2019)

- The International Maritime Dangerous Goods (IMDG) Code (2016 Edition),
[Special provision 188, 230]

- US Hazardous Materials Regulations 49 CFR(Code of Federal Regulations)
Sections 173.185 Lithium batteries and cells,

- The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries, Revision 3, Amendment 1 or any subsequent revision and amendment applicable at the date of the type (latest version is Revision 5, Amendment 2)

- UN No. 3480
If those lithium-ion batteries are packed with or contained in an equipment, then it is the responsibility of the shipper to ensure that the consignment are packed in compliance to the latest edition of the IATA Dangerous Goods Regulations section Ⅱ of either Packing Instruction 966 or 967 in order for that consignment to be declared as NOT RESTRICTED (non-hazardous/non-Dangerous). If those lithium-ion batteries are packed with or contained in an equipment, UN No. is UN3481

Our products are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in accordance with UN Recommendations (T1 – T8) on the Transport of Dangerous Goods Model Regulations and the Manual of Testes and Criteria.

UN 38.3 Lithium Battery		Test results	Remarks
NO	Test item	OK	Test 1 to 5 must be conducted in sequence on the same cell or battery
T1	Altitude simulation	OK	
T2	Thermal test	OK	
T3	Vibration	OK	
T4	Shock	OK	
T5	External short circuit	OK	
T6	Impact	OK	
T7	Overcharge	OK	Only battery do need this test item
T8	Forced discharge	OK	For cell only

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15. Regulatory Information

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See ACGIH exposure limits information as noted in Section 3.
US: This MSDS meets/exceeds OSHA requirements
International: this MSDS conforms to European Union (UN), the International Standards Organization (ISO) and the International Labor Organization (ILO) and as documental in ANSI (American National Standards Institute) Standard Z400.1-1993.

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16. Other Information

Reference:

Chemical substances information: Japan Advanced Information center of Safety and Health

International Chemical Safety Cards (ICSCs): International Occupational Safety and Health Information Centre (CIS)

2002 TLVs and BELs: American Conference of Governmental Industrial Hygienists (ACGIH)

Dangerous Goods Regulations-60th Edition : International Air Transport Association (IATA)

IMDG Code-2016 Edition: International Maritime Organization (IMO)

The European Agreement concerning the International Carriage of Dangerous Goods by Road-2015: The United Nations Economic Commission for Europe (UNECE)

MSDS of raw materials prepared by the manufactures