SYNERGY SCIENTECH CORP. -- Advanced Hybrid Batteries

SAFETY DATA SHEET

Manufacturer's CAGE: SYNERGY

Part No. Indicator: A

Part Number/Trade Name: AHB472625PLT

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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, 2017 (10th Edition)

Safety Data Review Date: January 1, 2017

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

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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 58th 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-58th 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