

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.**

1. General Information

Company's Name: SYNERGY SCIENTECH CORP.

Company's Street: 6F-3, No. 9, Prosperity 1st Rd, Hsinchu Science Park, Hsinchu, Taiwan 300091 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, 2025(19th Edition)

Safety Data Review Date: January 1, 2025

MSDS Preparer's Name: Dr. Robert Luo

Preparer's Company: SAME

MSDS Serial Number:

Battery Capacity:

Nominal Voltage:

Watt-hour:

Report NO:

2. Hazards Identification

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

3. Composition/information on ingredients

Material Name. (e.g. Sn alloy)	Substance Name (e.g. Copper (Cu))	CAS No.	Percentage (%)
active material	LiCoO ₂	12190-79-3	33.460
Binder-PVDF	Polyvinylidene difluoride	24937-79-9	1.053
Conductive material	Carbon	7782-42-5	0.789
Conductive material	Carbon	1333-86-4	0.265
Foil	Aluminum	7429-90-5	4.610
active material	Carbon	1333-86-4	15.762
CMC	Sodium Carboxymethyl Cellulose	90004-32-4	0.188
SBR	Styrene-Butadiene Roubber	9003-55-8	0.283
conductive material	Carbon	7440-44-0	0.158
foil	Copper	7440-50-8	7.870
electrolyte-solvent	Ethylene carbonate	96-49-1	5.015
electrolyte-solvent	Diethyl carbonate	105-58-8	3.720
electrolyte-solvent	Ethyl methyl carbonate	623-53-0	3.740
electrolyte-additive	Lithium hexafluorophosphate	21324-40-3	1.820
electrolyte-additive	1,3-propanesultone	1120-71-4	0.090
electrolyte-additive	Vinylene carbonate	872-36-6	0.045
separator	Polyethylene	9002-88-4	1.759
additive	Aluminium Oxide	1344-28-1	1.477
Binder-PVDF	Polyvinylidene difluoride	24937-79-9	0.486
tape-film	Poly (ethylene terephthalate)	25038-59-9	0.240
tape-adhesive	Acrylic acid	79-10-7	0.060
Al bag	Nylon	32131-17-2	3.850
Al bag	Aluminum	7429-90-5	9.750
Al bag	Polypropylene	9003-07-0	2.570
tab lead	Nickel	7440-02-0	0.380
tab lead	polypropylene	9003-07-0	0.050
tab lead	Aluminum	7429-90-5	0.240
tab lead	polypropylene	9003-07-0	0.050
tab	Nickel	7440-02-0	0.220

4. First Aid Measures

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).

5. Fire Fighting Measures

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.

6. Accidental Release Measures

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

7. Handling and Storage

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.

8. Exposure Controls/Personal Protection

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.

9. Physical and Chemical Properties

Product Type: Solid

Appearance: Prismatic

Odor: Odorless

10. Stability and Reactivity

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.

11. Toxicological Information

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.

12. Ecological Information

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

13. Disposal Consideration

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

14. Transport Information

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

- The package of battery should be complied with the requirements of 188 of IMDG (42-24) or the

<<Recommendations On The Transport Of Dangerous Goods-Model Regulations>>

- 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

- 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

15. Regulatory Information

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.

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-66th Edition : International Air Transport Association (IATA)

IMDG Code-2020 Edition: International Maritime Organization (IMO)

- The package of battery should be complied with the requirements of 188 of IMDG (42-24) or the <<Recommendations On The Transport Of Dangerous Goods-Model Regulations>>

Latest covered modification of the European Battery Directive 2006/66/EC and Amendment 2013/56/EU

The United Nations Economic Commission for Europe (UNECE)

MSDS of raw materials prepared by the manufactures