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正本/ORIGIN

编号: TCH24021831
No: TCH24021831
日期: 2024-08-27
Date: 2024-08-27

ZAIQ-RF(HH)-01-19

Safety Data Sheet

扫描查看在线报告



Applicant name: SolaX Power Network Technology (Zhejiang) Co., Ltd.

Product Name: Forced Air Cooling Lithium ion Rechargeable Battery System
AELIO-B100, 358.4V, 280Ah, 100.4kWh

Edit date: 2024-08-27

Edit institution: Technology Center of Hangzhou Customs District

Approver:

万旺军

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声 明

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The result in this test report is only valid for the tested samples.

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Forced Air Cooling Lithium ion Rechargeable Battery System**AELIO-B100, 358.4V, 280Ah, 100.4kWh**

According to GHS rev 10

1. Identification of substance

Product Name	Forced Air Cooling Lithium ion Rechargeable Battery System AELIO-B100, 358.4V, 280Ah, 100.4kWh
Other Name	None
Chemical Name	None
Recommended Use	Energy storage
Producer Name	SolaX Power Network Technology (Zhejiang) Co., Ltd.
Address	No.278, Shizhu Road, Chengnan Sub-district, Tonglu County, Hangzhou, Zhejiang, China 311500
Supplier Name	SolaX Power Network Technology (Zhejiang) Co., Ltd.
Address	No.278, Shizhu Road, Chengnan Sub-district, Tonglu County, Hangzhou, Zhejiang, China 311500
Phone Number	86-0571-56260011
Fax Number	None
WEB or E-mail	Jason.shen@solaxpower.com
Emergency Phone Number	86-0571-56260011 or Call your nearest poison control centre

2. Hazards identification

GHS classification	The product meets the definition of "article". In the Globally Harmonized system of Classification and Labeling of Chemicals (GHS), the "articles" defined by the US Occupational Safety and Health Administration "Hazard Communication Standard" (29 CFR 1910.1200) or similar definitions do not fall within the scope of this system. [Rev. 10 (2023) Part 1.3.2.1.1]. According to GHS system (10 th revised edition), not classified as a hazardous chemical.
Invasion route	Skin touch: May cause allergy by skin contact with the battery electrolyte. Eyes touch: Risk of serious damage to the eyes when it contacts with organic solution. Inhalation: Harmful if inhaled. Ingestion: Harmful if swallowed.
Health hazards	/
Environment hazards	The components of the battery are harmful to the environment.
Burn & burst hazards	It will explode, flame when it machine impinges, short-circuits and in high-temperature situation.
Other hazards which do not result in classification	Not available.

3. Composition/information on ingredients☐ **Substances**☒ **Mixtures****Component Information**

Component	CAS number	EINECS number	Mass(%wt)
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Forced Air Cooling Lithium ion Rechargeable Battery System
AELIO-B100, 358.4V, 280Ah, 100.4kWh

According to GHS rev 10

Iron	7439-89-6	231-096-4	59.68
Lithium Iron Phosphate	15365-14-7	604-917-2	12.10
Electrolyte	—	—	9.72
Copper	7440-50-8	231-159-6	6.49
Carbon	7782-42-5	231-955-3	5.44
Aluminium	7429-90-5	231-072-3	5.00
Separator	9003-07-0	618-352-4	1.57

4. First-aid measures

NOTE TO PHYSICIAN	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation.
After inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Get immediate medical attention.
After skin contact	In case of contact with substances in the battery, immediately flush skin thoroughly with soap and plenty of water. Remove and isolate contaminated clothing and shoes. If irritation persists, get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
After eye contact	In case of contact with substances in the battery, immediately flush eyes with plenty of running water or normal saline for a few minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get medical attention immediately.
After ingestion	Rinse mouth. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Loosen tight clothing such as a collar, tie, belt or waistband. Do not use mouth-to-mouth method if victim ingested the substance. Seek immediate medical attention.
Most important symptoms/effects, acute and delayed	No data available.

5. Fire-fighting measures

Suitable extinguishing agents	Water (cooling), use dry chemical powder, sandy soil, foam and carbon dioxide. Heptafluoropropane and perfluorohexanone have better extinguishing effects.
Special hazards caused by the material, its products of combustion or flue gases	Cell may vent when subjected to excessive heat-exposing battery contents. Can be released in case of fire: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen fluoride, hydrogen cyanide, benzene, toluene, methane, lithium oxide fumes, phosphorus oxides, irritating and toxic fumes and gases.
Protective equipment for fire-fighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus,

protective clothing and face mask, insulating gloves, insulating boots, etc.

6. Accidental release measures

Person-related safety precautions	If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Avoid skin and eye contact or inhalation of vapors.
Measures for environmental protection	Prevent further leakage or spillage if safe to do so. Do not allow material to be released to the environment without proper governmental permits.
Measures for cleaning/collecting	If batteries show signs of leaking, avoid skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean up. Mix with inert material (e.g. dry sand, vermiculite) and transfer to sealed container for disposal.
Additional information	See Section 7 for information on safe handling See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

7. Handling and storage

Handling	
Information for safe handling	Operators should be trained and strictly abide by the operating procedures. It is recommended that operators wear general protective clothing and safety gloves. Keep away from fire, heat source and direct sunlight. Smoking is strictly prohibited in the workplace. Provide ventilation systems and equipment in the workplace. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse. More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, rubber gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. Store separately from strong oxidizing agents, corrosives.
Information about protection against explosions and fires	Avoid mechanical and electrical abuse. Do not short circuit or install incorrectly. Batteries may explode or cause burns if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions.
STORAGE	
Requirements to be met	Store in a cool and dry place. Avoid mechanical or electrical

by storerooms and containers	abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.
Information about storage in one common storage facility	Store in a cool, well-ventilated area. Keep away from fire, heat source and direct sunlight. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Materials to Avoid: strong oxidizing agents, flammables, explosive material, corrosives, harmful substances.
Further information about storage conditions	The storage area shall be equipped with corresponding types and quantities of fire-fighting equipment, leakage emergency treatment equipment and appropriate materials.

8. Exposure controls/personal protection

Limit Values for Exposure					
Component	CAS number	ACGIH TLV-TWA	ACGIH TLV-STEL	NIOSH REL-TWA	NIOSH REL-STEL
Iron	7439-89-6	N.E.	N.E.	N.E.	N.E.
Lithium Iron Phosphate	15365-14-7	N.E.	N.E.	N.E.	N.E.
Electrolyte	—	N.E.	N.E.	N.E.	N.E.
Copper	7440-50-8	0.2 mg/m ³	N.E.	0.1 mg/m ³	N.E.
Carbon	7782-42-5	2mg/m ³	N.E.	2.5mg/m ³	N.E.
Aluminium	7429-90-5	1mg/m ³	N.E.	10mg/m ³ (total) 5mg/m ³ (resp)	N.E.
Separator	9003-07-0	N.E.	N.E.	N.E.	N.E.
Appropriate engineering controls	Use ventilation system and equipment. In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Provide safety shower and eye wash equipment.				
General protective and hygienic measures	Not necessary under conditions of normal use. Personal protection is recommended for venting battery. No smoking, drinking and eating at working site. Wash thoroughly after handling.				
Personal protective equipment	Personal protection is recommended for venting battery: respiratory protection, protective gloves, protective clothing and safety glass with side shields.				
Breathing equipment	When workers are facing high concentrations they must use appropriate certified respirators. Respiratory protection is not necessary under conditions of normal use.				
Protection of hands	Not necessary under conditions of normal use.				

Eye/Face protection	Use safety glasses with side shields or safety goggles as mechanical barrier for prolonged exposure.
Body protection	Full set of anti chemical reagent overalls, flame retardant antistatic protective clothing, choose body protection according to the amount and concentration of the dangerous substance at the work place.

Note: 1. N.E. means not established.

9. Physical and chemical properties

Physical state	The sample is a assembled battery with a white prismatic appearance. It is composed of 7 lithium-ion battery modules (TB-HR140) in series, containing 112 series cells. The lithium-ion battery module has a white prismatic appearance. Size (L*W*H), 1020*2300*1140 (mm) Weight, 1455 kg
Colour	No data available
Odour	Odourless
Melting point/freezing point	No data available
Boiling point or initial boiling point and boiling range	No data available
Flammability	No data available
Lower and upper explosion limit/flammability limit	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
pH	No data available
Kinematic viscosity	No data available
Solubility	No data available
Partition coefficient: n-octanol/water(log value)	No data available
Vapour pressure	No data available
Density and/or relative density (water=1)	No data available
Relative vapour density (air=1)	No data available
Particle characteristics	No data available

10. Stability and reactivity

Reactivity	No data available.
Chemical stability	This is a stable product under recommended storage conditions.
Possibility of hazardous reactions	No polymerization.
Conditions to avoid (e.g. static discharge, shock or vibration)	Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature, direct sunlight, high humidity, immerse in water or overcharge, etc.
Incompatible materials	Explosives, flammables, strong oxidants and corrosives. If leaked, forbidden to contact with strong oxidising agents, mineral acids, strong alkalis, etc.
Hazardous decomposition products	May include metal oxides, carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen fluoride, hydrogen cyanide, benzene, toluene, methane, phosphorus oxides and other toxic smoke and gas.

11. Toxicological information

Routes of Entry:	Dermal contact, eye contact, inhalation, ingestion.
Acute Toxicity	LD50 (Oral, rat) N/A LC50 (Inhalation, rat) N/A LD50 (Dermal, rabbit) N/A
Skin corrosion/Irritation	The electrolyte may cause skin irritation.
Serious eye damage/irritation	The electrolyte may cause eye irritation.
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic Effects	Not classified
Further Information	In the event of exposure to internal contents, moderate or severe irritation, burning and dryness of the skin may occur, and may damage the nerves of the target organs. No detailed toxicological study.

12. Ecological information

Ecotoxicity	
Aquatic Toxicity	Test & Species 96 Hr LC50 fish: N/A 48 Hr EC50 Daphnia: N/A 72 Hr EC50 Algae: N/A
Persistence and	Not available

degradability

Bioaccumulative Not available

potential

Mobility in soil Not available

Additional Information May cause water or soil pollution.

13. Disposal considerations

WASTE DISPOSAL INSTRUCTIONS

Contact a qualified professional waste disposal service to dispose of this material.

Dispose of in accordance with local environmental regulations or local authority requirements.

14. Transport information

The Recommendation of Transport of Dangerous Goods(TDG)

UN Number UN 3480

Proper Shipping Name LITHIUM ION BATTERIES

Class/Division Class 9 Miscellaneous Dangerous Substances and Articles

Package Group —

Subsidiary risk —

labeling pictogram



Note: The sample (Type: AELIO-B100) is a assembled battery, which a collection of 7 lithium-ion battery modules (TB-HR140). The battery modules (TB-HR140) have passed UN38.3 each applicable testing. The assembled battery (Type: AELIO-B100) has been verified. The battery modules do not equipped with battery overcharge protection, are only designed as a component in another battery or equipment which affords such protection. Cells and batteries incorporate a safety venting device. Cells and batteries are properly protected to prevent short circuits, and have a high quality management programme can be transported as mentioned above. Lithium cells and batteries must be packed in inner packaging that completely enclose the cell or battery and placed in a strong outer packaging. The completed package must meet the Packing Group II performance requirements.

Maritime transport IMDG Being same with TDG

Marine pollutant (Yes/No): No

EmS No.: F-A, S-I

Each package must be labeled with the Class 9 Lithium Battery hazard label (Model No.9A ,5.2.2.2.2 in IMDG code).

According to 2.9.4.7 of IMDG Code (2022 Edition), except for

Forced Air Cooling Lithium ion Rechargeable Battery System
AELIO-B100, 358.4V, 280Ah, 100.4kWh

According to GHS rev 10

Road transport ADR

button cells installed in equipment (including circuit boards), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

Being same with TDG

Each package must be labeled with the Class 9 Lithium Battery hazard label (Model No.9A ,5.2.2.2.2 in ADR 2023 edition.). According to 2.2.9.1.7 (g) of ADR (2023 Edition), except for button cells installed in equipment (including circuit boards), Manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

Comment: The Forced Air Cooling Lithium ion Rechargeable Battery System includes a fan and fire suppression system. The fan need to be connected to an external power source in order to work and is in a power off state during transportation. The fire suppression system also requires an external power supply to function, and no fire suppression substances are carried during transportation. The entire system does not contain any other dangerous goods except for batteries, if there is any false information, any deviation in the appraisal results and other consequences shall be borne by the enterprise itself.

15. Regulatory information

European/International Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29CFR 1910.1200).

EINECS Status: Iron, Aluminium, Copper, Carbon are included in EINECS inventory.

EPA TSCA Status: Iron, Aluminium, Copper, Carbon, Lithium Iron Phosphate, Separator are included in TSCA public inventory.

Canadian DSL/NDSL (Domestic Substances List/ Non-domestic Substances List): Iron, Aluminium, Copper, Carbon, Lithium Iron Phosphate, Separator are included in DSL/NDSL.

HMIS (Hazardous Material Identification System Ratings):
 Health: 1
 Flammability: 0
 Physical hazard: 0
 Personal protection: F
 (4. Severe Hazard; 3. Serious Hazard; 2. Moderate Hazard; 1. Slight Hazard; 0. Minimal Hazard)

WHMIS(Canadian Workplace Hazardous Material Identification System Ratings):
 B6 (Aluminium), B4, D2B (Iron).

List of dangerous UN Number: UN3480, Shipping Name: LITHIUM ION

BATTERIES, Packing Group: II.

16. other information

This Material Safety Data Sheet was based on the "Globally Harmonized System of Classification and Labelling of Chemicals", "Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations", "INTERNATIONAL MARITIME DANGEROUS GOODS CODE", "International Air Transport Association Dangerous Goods Regulations", the National Standards and other related dangerous chemicals management laws, regulations and standards, which are periodically updated and changed. To make dangerous goods / hazardous chemicals comply with the relevant requirements of the latest management, regularly update is recommended.

This Material Safety Data Sheet has been compiled in both English and Chinese. For any discrepancies, the Chinese version shall prevail.

Abbreviations and acronyms	<p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>RID: Regulations Concerning the International Transport of Dangerous Goods by Rail</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)</p> <p>ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>CAS: Chemical Abstracts Service</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>EC50: Effective concentration, 50 percent</p>
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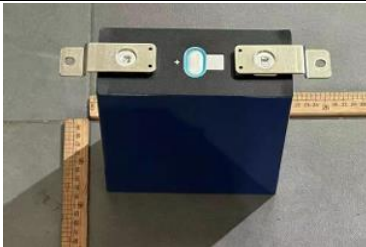

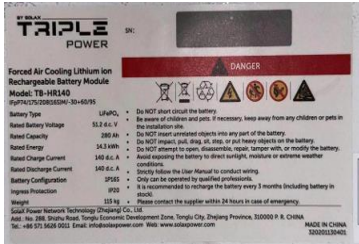





Edit Date 27.08.2024

Update and Revise Original edition

Edit Standard Globally Harmonized System of Classification and Labelling of Chemicals Part 1.5

Revised Institution Technology Center of Hangzhou Customs District

Attachment: Sample Photos

<p align="center">Inner Cell</p> 	
<p>Battery (TB-HR140 51.2V, 280Ah, 14.3kWh)</p> 	<p>Nameplate</p> 
<p align="center">Assembled battery (AELIO-B100, 358.4V, 280Ah, 100.4kWh)</p>	
	 
<p align="center">Package Photos provided by the Applicant</p>	
	

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

