SAFETY DATA SHEET

LI-ION BATTERY

Infosafe No.: LQC4R
ISSUED Date : 21/05/2024
ISSUED by: ADVENTURE OPERATIONS AUSTRALIA PTY LTD

Section 1 - Identification

Product Identifier
LI-ION BATTERY

Company Name
ADVENTURE OPERATIONS AUSTRALIA PTY LTD (ABN 43 622 679 887)

Address
71 Charles Ulm Place Eagle Farm
QLD 4009 Australia

Telephone/Fax Number
Tel: 07 31931110

Emergency Phone Number
1800 638 556 (24h)

E-mail Address
info@adventureoperations.com

Recommended use of the chemical and restrictions on use
Lithium Ion Battery

Other Information
Although the information and recommendations set forth in this SDS are presented in good faith and are believed to be correct as of the date of this SDS, ADVENTURE OPERATIONS AUSTRALIA PTY LTD makes no representations as to the completeness or accuracy thereof. Information is supplied on the conditions that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will ADVENTURE OPERATIONS AUSTRALIA PTY LTD or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the SDS.

Section 2 - Hazard(s) Identification

GHS classification of the substance/mixture
Not classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.
Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Section 3 - Composition and Information on Ingredients

Ingredients

Name	CAS	Proportion
Cobalt lithium manganese nickel oxide	182442-95-1	15-25 %
Lithium Manganese Oxide (LiMn2O4)	12057-17-9	10-20 %
Graphite	7782-42-5	10-30 %
Lithium hexafluorophosphate	21324-40-3	10-30 %
Copper	7440-50-8	7-13 %
Aluminium	7429-90-5	5-10 %
Nickel	7440-02-0	1-5 %
Ingredients determined not to be hazardous.		Balance

Section 4 - First Aid Measures

Inhalation
Not considered a potential route of exposure for intact product, when used as intended. However, if the sealed unit is damaged and exposure occurs, remove affected person from contaminated area. Keep at rest until recovered. Seek immediate medical attention.

Ingestion
Not considered a potential route of exposure for intact product, when used as intended. However, if the sealed unit is damaged and exposure occurs, do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

Skin
Not considered a potential route of exposure for intact product, when used as intended.
If the sealed unit is damaged and exposure occurs: Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek immediate medical attention.

Eye
Not considered a potential route of exposure for intact product, when used as intended. If the sealed unit is damaged and exposure occurs: If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical attention.

First Aid Facilities
Eyewash, safety shower and normal washroom facilities.

Advice to Doctor
Treat symptomatically.

Other Information
For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

Section 5 - Firefighting Measures

Suitable Extinguishing Media
Carbon dioxide, dry chemical.

Unsuitable Extinguishing Media
Do not use water jet.

Hazards from Combustion Products
Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including lithium oxide fumes, carbon monoxide, carbon dioxide and oxides of nitrogen.

Specific hazards arising from the chemical
This product will burn and/or decompose under fire conditions. Cell may vent when subjected to excessive heat-exposing battery contents.

Hazchem Code
2Y

Decomposition Temperature
Not available

Precautions in connection with Fire
Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. In case of fire the product may be violently or explosively reactive. Use water spray to disperse vapours. This product should be prevented from entering drains and watercourses.

Section 6 - Accidental Release Measures

Emergency Procedures
If the battery material is released, remove operators from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

Wear appropriate personal protective equipment and clothing to prevent exposure. Collect the material and place into a suitable labelled container. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

It is recommended to discharge the battery to the end. Use up the metal lithium inside the
lithium metal battery, and delivered to professional institutions for further treatment.

Section 7 - Handling and Storage

Precautions for Safe Handling
The battery should not be opened, destroyed or incinerated, as they may leak or rupture and release to the environment, the ingredients contained in the hermetically sealed container. Do not short circuit terminals, over charge the battery, forced over-discharge or throw into fire. Do not crush or puncture the battery, or immerse in liquids.

Conditions for safe storage, including any incompatibilities
Avoid mechanical or electrical 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.

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

Section 8 - Exposure Controls and Personal Protection

Occupational exposure limit values
No exposure standards have been established for the mixture. However, over-exposure to some chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and should be kept to the least possible levels.

Biological Monitoring
No biological limits allocated.

Control Banding
Not available

Engineering Controls
None required, when used as intended.

Respiratory Protection
None required, when used as intended. When handling damaged product, if engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable dust/particulate/vapor filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirement. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye and Face Protection
None required, when used as intended. When handling damaged product, safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 (series) - Eye Protectors for Industrial Applications.

Hand Protection
None required, when used as intended. Gloves of impervious material are recommended when dealing with a leaking or ruptured cell or battery. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Thermal Hazards
No further relevant information available.

Body Protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

Section 9 - Physical and Chemical Properties

Properties	Description	Properties	Description
Form	Article - Battery	**Appearance**	Square, odorless solid-state battery
Colour	Not available	**Odour**	Not applicable
Melting Point	Not applicable	**Boiling Point**	Not applicable
Decomposition Temperature	Not available	**Solubility in Water**	Insoluble
Specific Gravity	Not available	**pH**	Not applicable
Vapour Pressure	Not applicable	**Relative Vapour Density (Air=1)**	Not applicable
Evaporation Rate	Not applicable	**Odour Threshold**	Not applicable
Viscosity	Not applicable	**Volatile Component**	Not applicable
Partition Coefficient: n-octanol/water (log value)	Not available	**Density**	Not applicable
Flash Point	Not applicable	**Flammability**	Not flammable
Auto-Ignition Temperature	Not applicable	**Explosion Limit - Upper**	Not applicable
Explosion Limit - Lower	Not applicable	**Oxidising Properties**	Not applicable
Particle Size	Not applicable	**Particle Characteristics**	Not applicable

Other Information
Nominal voltage: 3.7 V
Rate Capacity: 2000 mAh

Section 10 - Stability and Reactivity

Reactivity
Reacts with incompatible materials.

Chemical Stability
Stable under normal conditions of storage and handling.

Possibility of hazardous reactions
Reacts with incompatible materials.

Conditions to Avoid
Avoid heating, deforming, mutilating, crushing, disassembling, overcharging, short circuiting and exposure to humid conditions over a long period.

Incompatible Materials
If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

Hazardous Decomposition Products
Under fire conditions this product may emit toxic and/or irritating fumes and gases including lithium oxide fumes, oxides of nitrogen, carbon monoxide and carbon dioxide.

Hazardous Polymerization
Not available

Section 11 - Toxicological Information

Toxicology Information
No toxicity data available for this material. Exposure to internal contents, the corrosive fumes will be very irritating to skin, eyes, and respiratory system.

Ingestion
Ingestion unlikely due to form of product. Ingestion of contents of battery may irritate the gastric tract causing nausea and vomiting.

Inhalation
No adverse effects expected. Exposure to contents of battery: May cause irritation of the nose, throat and respiratory system. Vapours of battery contents may be toxic.

Skin
Unlikely due to form of product. Exposure to contents of battery: May be irritating to skin. The symptoms may include redness, itching and swelling.

Eye
Unlikely due to form of product. Exposure to contents of battery: May be irritating to eyes. The symptoms may include redness, itching and tearing.

Respiratory Sensitisation
Not expected to be a respiratory sensitiser.

Skin Sensitisation
Not expected to be a skin sensitiser.

Germ Cell Mutagenicity
Not considered to be a mutagenic hazard.

Carcinogenicity
Not considered to be a carcinogenic hazard.

Reproductive Toxicity
Not considered to be toxic to reproduction.

STOT - Single Exposure
Not expected to cause toxicity to a specific target organ.

STOT - Repeated Exposure
Not expected to cause toxicity to a specific target organ through repeated or prolonged exposure.

Aspiration Hazard
Not expected to be an aspiration hazard.

Section 12 - Ecological Information

Ecotoxicity
The sealed cell or battery does not pose an ecotoxicity hazard under normal use.

Persistence and degradability
Not available

Mobility
Not available

Bioaccumulative Potential
Not available

Other Adverse Effects
Not available

Environmental Protection
Do not discharge this material into waterways, drains and sewers.

Hazardous to the Ozone Layer
This product is not expected to deplete the ozone layer.

Section 13 - Disposal Considerations

Disposal Considerations
Do not dispose in household or commercial waste bin. Return whole scrap batteries to the distributor, manufacturer or a licensed battery recycler. Do not dispose in landfill.

DO NOT INCINERATE. The batteries must be neutralized prior to disposal as a hazardous waste.

The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.
To minimise personal exposure, refer to Section 8 - Exposure Controls and Personal Protection.

Other Information
Overexposure to internal contents can cause symptoms of non-fibrotic lung injury and membrane irritation.

Section 14 - Transport Information

Transport Information
Road and Rail Transport:
This material is classified as Dangerous Goods Class 9 Miscellaneous Dangerous Goods
Class 9: Miscellaneous substances Dangerous Goods are incompatible in a placard load with any of the following:
Class 1: Explosives (when the class 9 substance is a fire risk substance) Division 5.1: Oxidising substances (when the class 9 substance is a fire risk substance) and
Division 5.2: Organic peroxides (when the class 9 substance is a fire risk substance)

Marine Transport (IMO/IMDG):
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
UN No.: 3481
Proper Shipping Name: LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT
DG Class: 9
Packaging Group: N/A
EMS No.: F-A, S-I
Special Provisions: 188, 230, 310, 348, 360, 376, 377, 384, 387, 300

Air Transport (ICAO/IATA) (note: product may be exempt from IATA requirements):
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.
UN No: 3481

Proper Shipping Name: Lithium ion batteries contained in equipment or lithium ion batteries packed with equipment
Class: 9
Packing Group: N/A
Hazard Labels: Miscellaneous Lithium batt
Packing Instruction (lithium ion batteries contained in equipment): 967(For passenger and cargo aircraft & For cargo aircraft only)
Packing Instruction (lithium ion batteries packed with equipment): 966(For passenger and cargo aircraft & For cargo aircraft only)

Special Provisions: A48, A88, A99, A154, A164, A181, A185, A213, A220 (Lithium ion batteries contained in equipment)
Special Provisions: A88, A99, A154, A164, A181, A185, A213, A802 (lithium ion batteries packed with equipment)

UN Number
3481

Proper Shipping Name
LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT

Transport Hazard Class
9

Hazchem Code
2Y

IERG Number
26

Special Precautions for User
Not available

IMDG Marine pollutant
No

Transport in Bulk
Not available

Additional Information
Lithium-ion batteries have passed the corresponding test requirement of the United Nation Manual of Tests and Criteria, Part III, subsection 38.3.

Section 15 - Regulatory Information

Regulatory Information
Not classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.
Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule
Not Scheduled

Montreal Protocol
Not listed

Stockholm Convention
Not listed

Rotterdam Convention
Not listed

International Convention for the Prevention of Pollution from Ships (MARPOL)
Not available

Agricultural and Veterinary Chemicals Act 1994
Not available

Basel Convention
Not listed

Section 16 - Any Other Relevant Information

Date of Preparation
SDS Created: May 2024

Version Number
1.0

Literature References
Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
Standard for the Uniform Scheduling of Medicines and Poisons.
Australian Code for the Transport of Dangerous Goods by Road & Rail.
Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Code of Practice for Supply Diversion into Illicit Drug Manufacture.
National Code of Practice for Chemicals of Security Concern.
Agricultural Compounds and Veterinary Chemicals Act.
International Agency for Research on Cancer (IARC) Monographs.
Montreal Protocol on Substances that Deplete the Ozone Layer.
Stockholm Convention on Persistent Organic Pollutants (POPs).
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.
International Air Transport Association (IATA) Dangerous Goods Regulations.
International Maritime Dangerous Goods (IMDG) Code.
Workplace exposure standards for airborne contaminants.
Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).
Globally Harmonised System of Classification and Labelling of Chemicals (7th revised edition).
Code of Practice: Managing Noise and Preventing Hearing Loss at Work.

END OF SDS