Safety Data Sheet

Issue Date: 16-Dec-2021 **Revision Date:** 20-Dec-2021 **Version** 1

1. IDENTIFICATION

Product identifier

Product Name Lithium Ion Battery

Other means of identification

SDS # JIR-001-CA

Product Code DVA001
Synonyms None

UN/ID No UN3480

Recommended use of the chemical and restrictions on use

Recommended Use Electrochemical energy storage device: battery cell/module/pack/system

Uses Advised Against No information available

Details of the supplier of the safety data sheet

Initial supplier identifier
Jireh Industries, Ltd.
53158 Range Road 224
Ardrossan, Alberta
Canada
T8E2k4

Emergency telephone number
Initial supplier phone number 780-922-4534
Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Emergency Overview This Article Information Sheet is provided as a courtesy in response to a customer request. A Safety Data Sheet (SDS) has not been prepared for these product(s) because they are articles. Articles are not subject to the WHMIS 2015 legislation. As defined in this standard: Manufactured article means any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that under normal conditions of use, will not release or otherwise cause a person to be exposed to a controlled product

Appearance Battery **Physical state** Solid **Odour** Odourless

Classification

The chemicals listed in section 3 are contained in a sealed container. Risk of exposure only occurs if battery is mechanically, thermally, or electrically abused

Label elements
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Lithium Manganese Oxide	12057-17-9	30-60	-	-
Graphite	7782-42-5	15-40	-	-
Lithium Hexafluorophosphate	21324-40-3	10-30	-	-

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice The following information applies if the battery is mechanically, thermally, or electrically abused.

Eye contact Immediately flush eyes with water for 30 minutes while lifting the upper and lower lids. Get medical attention.

Skin contact Flush affected area with lukewarm water for at least 30 minutes. If skin irritation persists, call a doctor.

Inhalation If symptoms are experienced, remove source of contamination or move victim to fresh air. Get medical attention.

Ingestion Do NOT induce vomiting. Call a physician or Poison Control Center.

Most important symptoms and effects, both acute and delayed

Symptoms A shorted lithium battery can cause thermal and chemical burns upon contact with the skin.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media Water. Dry chemical. Carbon dioxide (CO2). Foam.

Unsuitable extinguishing media Not determined.

Specific hazards arising from the chemical Battery may vent when subjected to excessive heat-exposing, fire, or over voltage condition.

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO2). Decomposition products can include and are not limited to: Aldehydes, hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and oxides of carbon, sulfur and phosphorus.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Ventilate affected area.

Other Information The material contained within the batteries is only expelled under abusive conditions.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use a shovel and cover battery with sand or vermiculite, place in an approved container, and dispose in accordance with section 13.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Do not expose battery or cell to extreme temperatures or fire. Do not disassemble, crush or puncture battery.

Conditions for safe storage, including any incompatibilities

Storage Conditions Insulate positive and negative terminals to avoid short circuit. Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Protect from direct sunlight.

Incompatible materials If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Canada - Alberta - Occupational Exposure Limits - Ceilings	Canada - British Columbia - Occupational Exposure Limits - Ceilings	Canada - Ontario - Occupational Exposure Limits - Ceilings	Quebec
Lithium Manganese Oxide 12057-17-9	TWA: 0.2 mg/m^3	TWA: 0.2 mg/m^3 TWA: 0.02 mg/m^3 Adverse reproductive effect	TWA: 0.02 mg/m^3 TWA: 0.1 mg/m^3	TWA: 0.2 mg/m^3
Graphite 7782-42-5	TWA: 2 mg/m^3	TWA: 2 mg/m^3	TWA: 2 mg/m^3	TWA: 2 mg/m^3
Lithium Hexafluorophosphate	TWA: 2.5 mg/m^3	TWA: 2.5 mg/m^3	TWA: 2.5 mg/m^3	TWA: 2.5 mg/m^3

21324-40-3				

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Not necessary under conditions of normal use. In case of battery rupture or leakage, use safety goggles.

Skin and body protection Not necessary under conditions of normal use. In case of battery rupture or leakage, wear rubber apron and Viton rubber gloves.

Respiratory protection Not necessary under conditions of normal use. In case of battery venting or rupture, use a self contained full face respiratory mask.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Battery
Colour	Not determined
Odour	Odourless
Odour Threshold	Not applicable

Property	**Values**	**Remarks • Method**
pH	Not applicable	
Melting point / freezing point	Not applicable	
Boiling point / boiling range	Not applicable	
Flash point	Not applicable	
Evaporation Rate	Not applicable	
Flammability (Solid, Gas)	Not determined	
Flammability Limit in Air		
Upper flammability or explosive limits	Not applicable	
Lower flammability or explosive limits	Not applicable	
Vapour Pressure	Not applicable	
Vapour Density	Not applicable	
Relative Density	Not applicable	
Water Solubility	Insoluble in water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not applicable	
Autoignition temperature	Not applicable	
Decomposition temperature	Not determined	
Kinematic Viscosity	Not applicable	
Dynamic Viscosity	Not applicable	
Explosive properties	Not determined.	
Oxidising properties	Not determined.	

Other information

Softening Point	Not determined
Molecular weight	Not determined
VOC Content (%)	Not determined
Liquid Density	Not determined
Bulk density	Not determined

10. STABILITY AND REACTIVITY

Reactivity Not reactive under normal conditions.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Hazardous Polymerisation Hazardous polymerisation does not occur.

Conditions to Avoid Heating, mechanical and electrical abuse.

Incompatible materials If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

Hazardous decomposition products Under normal conditions, none known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Inhalation, skin contact and eye contact are possible when the battery is opened. The following is based on exposure to internal contents

Eye contact Corrosive fumes will be very irritating to eyes.

Skin contact Corrosive fumes will be very irritating to skin.

Inhalation Corrosive fumes will be very irritating to mucous membranes.

Ingestion Do not ingest.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

Acute toxicity

Unknown acute toxicity No information available

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite 7782-42-5	-	-	> 2000 mg/m^3 (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

12. ECOLOGICAL INFORMATION

Ecotoxicity This article is expected to present a low environmental risk either because use and disposal are unlikely to result in a significant release of components to the environment or because those components that may be released are expected to have insignificant environmental impact.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Trade Secret	-	100: 96 h Danio rerio mg/L LC50 semi-static	-	-

Persistence/Degradability No information available.

Bioaccumulation No information available.

Other Adverse Effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. TRANSPORT INFORMATION

Note Please see current shipping documents for most up to date shipping information, including exemptions and special circumstances PLEASE NOTE: For transportation, one DVA001 battery is considered to be two 18V batteries each having a rating of 90Wh.

DOT

UN/ID No UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard class 9

TDG

UN/ID No UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard class 9

IATA

UN number UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Transport hazard class(es) 9

IMDG

UN number UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Transport hazard class(es) 9

15. REGULATORY INFORMATION

REGULATORY INFORMATION

International Regulations

Ozone-depleting substances (ODS) Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

Chemical name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Lithium Manganese Oxide	X		X					
Graphite	X	X	X		X	X	X	X
Lithium Hexafluorophosphate	X	X	X	X	X	X	X	X

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	**Health Hazards** Not determined	**Flammability** Not determined	**Instability** Not determined	**Special Hazards** Not determined
HMIS	**Health Hazards** Not determined	**Flammability** Not determined	**Physical hazards** Not determined	**Personal Protection** Not determined

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value
*	Skin designation

Revision Date: 20-Dec-2021

Revision Note: New product.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet