	Mica Power CO., Ltd

Safety Data Sheets

For

Mica Power CO., Ltd
3rd Floor of chuangxin kong jian Building, song Hu Yun Gu Meng Industrial park No.153 of she Gui Ling, Chang Tang District, Dalang, Dongguan, China

Li-ion Battery

Model/Type :	MC 352074
Trademark	N/A
Nominal Voltage	3.7V
Typical Capacity	450mAh 1.67Wh
Version Number	V1.0
Preparation Date	Oct. 09, 2020

SAFETY DATA SHEET

According to OSHA GHS 《A Guide to The Globally Harmonized System of Classification and Labelling of Chemicals 》,IATA DGR 《Dangerous Goods Regulations 》,IMO IMDG CODE 《INTERNATIONAL MARITIME Dangerous Goods CODE》

Section 1. Identification

Product Identifier

Product name: Li-ion Battery
Model: MC 352074 (3.7V 450mAh 1.67Wh)
Quality: 10g

Other means of identification

Synonyms: none

Recommended use of the chemical and restrictions on use

Recommended Use: Used in Energy Storage Fields

Uses advised against:

a) Do not dismantle, open or shred secondary cells or batteries.

b) Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight.

c) Do not short-circuit a cell or a battery. Do not store cells or batteries haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.

d) Do not remove a cell or battery from its original packaging until required for use.

e) Do not subject cells or batteries to mechanical shock.

f) In the event of a cell leaking, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice.

g) Do not use any charger other than that specifically provided for use with the equipment.

h) Observe the plus (+) and minus (–) marks on the cell, battery and equipment and ensure correct use.

i) Do not use any cell or battery which is not designed for use with the equipment.

j) Do not mix cells of different manufacture, capacity, size or type within a device.

k) Battery usage by children should be supervised.

l) Seek medical advice immediately if a cell or a battery has been swallowed.

m) Always purchase the battery recommended by the device manufacturer for the equipment.

n) Keep cells and batteries clean and dry.

o) Wipe the cell or battery terminals with a clean dry cloth if they become dirty.

p) Secondary cells and batteries need to be charged before use. Always use the correct charger and refer to the manufacturer’s instructions or equipment manual for proper charging instructions.

q) Do not leave a battery on prolonged charge when not in use.

r) After extended periods of storage, it may be necessary to charge and discharge the cells or batteries several times to obtain maximum performance.

s) Retain the original product literature for future reference.

t) Use only the cell or battery in the application for which it was intended.

u) When possible, remove the battery from the equipment when not in use.
v) Dispose of properly.

Details of the Manufacturer of the safety data sheet:

Name: Mica Power CO., Ltd

Address: 3rd Floor of chuangxin kong jian Building, song Hu Yun Gu Meng Industrial park No.153 of she Gui Ling, Chang Tang District, Dalang, Dongguan, China

Telephone number of the supplier: 0769-82677106

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Emergency telephone number

Company Emergency Phone Number: 0769-82677106

Section 2. Hazard(s) identification

Classification

No harm at the normal use. If contact the Electrolyte in the Lithium-ion Battery, reference as follows:

Classification of the substance or mixture

Classification according to GHS

Toxic if swallowed (Hazard category 3)

Hazard category	Signal word	Hazard statement
3	Danger	Toxic if swallowed

Precautionary statements			
Prevention	**Response**	**Storage**	**Disposal**
Wash … thoroughly after handling. … Chemical manufacturer, importer, or distributor to specify parts of the body to be washed after handling. **Do not eat, drink or smoke when using this product.**	**If swallowed: Immediately call a poison center/doctor/...** … Chemical manufacturer, importer, or distributor to specify the appropriate source of emergency medical advice. **Specific treatment (see ... on this label)** ... Reference to supplemental first aid instruction. - *if immediate administration of antidote is required.* **Rinse mouth.**	**Store locked up.**	**Dispose of contents/container to...** ... in accordance with local/regional/national/international regulations (to be specified).

Causes serious eyes damage (Hazard category 1)

Hazard category	Symbol		Signal word	Hazard statement
1	Corrosion		Danger	H318 Causes serious eye damage

Precautionary statements			
Prevention	**Response**	**Storage**	**Disposal**
P280 **Wear eye protection/face protection.** Manufacturer/supplier or the competent authority may further specify type of equipment where appropriate.	P305 + P351 + P338 **IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.** P310 **Immediately call a POISON CENTER/doctor/...** …Manufacturer/supplier or the competent authority to specify the appropriate source of emergency medical advice.		

Section 3. Composition/Information on Ingredients

Chemical characterization: Mixtures

Description:

Product: Consisting of the following components.

Chemical Name	Concentration%	CAS No.
Ethylenc carbonate	3	96-49-1
Dimethyl carbonate	3	616-38-6
Lithium hexafluorophosphate	4.8	21324-40-3
Lithium cobalt oxides	40	12190-79-3
Copper	8	7440-50-8
Graphite	25	7782-42-5
Polyvinylidene fluoride	2	24937-79-9
Aluminum	8	7429-90-5
Nickel	5	7440-02-0
Polypropylene	1.2	9003-07-0

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

Section 4. First-Aid Measures

First aid measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Remove contaminated clothing and shoes. Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Swallowing Do not induce vomiting. Get medical attention.

Most Important Symptoms/Effects No information available.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Section 5. Fire-Fighting Measures

Suitable Extinguishing Media

When the scale of the fire is small, use a HFC (hydrofluorocarbon) clean-agent fire extinguisher or alcohol resistant foam fire extinguishers. (In case of battery overheating, wear protective gear and

immerse heated battery in water)
In case of large fire, use large amount of water to extinguish.

Specific Hazards Arising from the Chemical

Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Carbon monoxide(CO)
Carbon dioxide
Other irritating and toxic gases.

Hazardous Combustion Products

Carbon oxides.
Explosion Data
Sensitivity to Mechanical Impact No
Sensitivity to Static Discharge No

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. For example: Wear self-contained respiratory protective device. Wear suitable protective clothing and eye/face protection.

Special hazards arising from the substance or mixture:

Battery may burst and release hazardus decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150℃), When damaged or abused(e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes.
Refer to section 8 for personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.
Evacuate personnel to safe areas.

Environmental precautions

Environmental PrecautionsRefer to protective measures listed in Sections 7 and 8.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to Sections 13.

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 personal protective equipment. Dam up. Cover liquid spill with sand, earth or other Non combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

Section 7. Handling and Storage

Precautions for safe handling

HandlingHandle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Wash thoroughly after handling. Use this material with adequate ventilation.

The product is not explosive.

Conditions for safe storage, including any incompatibilities

If the Lithium-ion Cell or Battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium-ion Polymer Battery periodically.

3 months: -10℃~+40℃, 45 to 85%RH

And recommended at 0℃~+35℃ for long period storage.

The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more.

The voltage for a long time storage shall be 3.2V~3.65V range. Do not storage Lithium-ion Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.

Keep in closed original container.

Keep out of reach of children.

Do not expose Lithium-ion Polymer Battery to heat or fire. Avoid storage in direct sunlight.

Do not store together with oxidizing and acidic materials**.**

Keep ignition sources away- Do not smoke.

Store in cool, dry and well-ventilated place.

Incompatible Products Not available

Section 8. Exposure Controls/Personal Protection

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
12190-79-3 Lithium cobalt oxides	
TLV (USA)	N/A
MAK (Germany)	N/A

Appropriate engineering controls

Engineering Measures Showers

Eyewash stations

Ventilation systems

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/Face Protection:

Tightly sealed goggles

Body protection:
Protective work clothing.
Skin protection:

Protective gloves

Material of gloves:
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material:
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Section 9. Physical and Chemical Properties

Physical State	Form: Prismatic
	Odor: Odorless
	Odor Threshold: Not available
pH, with indication of the concentration	Not available
Melting point/freezing point	Not available
Initial boiling point and Boiling range:	Not available
Flash Point	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	Not available
Vapor Pressure:	Not available
Vapor Density:	Not available
relative density:	Not available
Solubility in Water:	Not available
Solubility in other solvents	Not available
n-octanol/water partition coefficient	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Odout threshold	Not available

Evaporation rate	Not available
Viscosity	Not available
Other Information	Not available

Section 10. Stability and Reactivity

Reactivity: Stable under recommended storage and handling conditions (see section 7, Handling and storage).

Chemical stability: Stable under normal conditions of use, storage and transport.

Thermal decomposition/conditions to be avoided: No decomposition if used according to specifications.

Possibility of Hazardous Reactions: None under normal processing.

Hazardous Polymerization: Hazardous polymerization does not occur.

Conditions to avoid: Strong heating, fire, Incompatible materials.

Incompatible materials: Strong oxidizing agents. Strong acids.Base metals.

Hazardous Decomposition Products: Carbon oxides, Other irritating and toxic gases.

Section 11. Toxicological Information

Acute toxicity: No data available.

LD/LC50 values relevant for classification:
Not available.

Skin corrosion/irritation: No irritant effect.

Serious eye damage/irritation: Cause serious eye irritation.

Respiratory or skin sensitization: No sensitizing effects known.

Specific target organ system toxicity: No information available.

CMR effects(carcinogenetic, mutagenicity and toxicity for reproduction): No information available.

Section 12. Ecological Information

Toxicity:

Acquatic toxicity:
No further relevant information available.

Persistence and degradability: No further relevant information available.

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects: No information available.

Section 13. Disposal Considerations

Safe handling and methods of disposal

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.
Product disposal recommendation: Observe local, state and federal laws and regulations.
Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations. The potential effects on the environment and human health of the substances used in batteries and accumulators;
the desirability of not disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.

Section 14. Transport Information

According to PACKING INSTRUCTION 965 ~ 967 of IATA DGR 61st Edition for transportation, the special provision 188 of IMDG (inc Amdt 39-18). The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrate and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle and ship should be cleaned and sterilized before transport. During transport, the vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area.

UN number

3480&3481

UN Proper shipping name

LITHIUM ION BATTERIES (including lithium ion polymer batteries) or; LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries)

Transport hazard class(es)

Class 9

Packing Instruction (if applicable)

965 II/ IB/ IA, 966 II/ I, 967 II/ I

Marine pollutant (Yes/No)

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No information available.

Special precautions

No information available.

Section 15. Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

_____ Hazardous **V Non-hazardous**

Section 16. Other Information

Preparation and revision information

Date of previous revision: Not applicable.

Revision summary: The first New SDS

Abbreviations and acronyms

TSCA: Toxic Substances Control Act, The American chemical inventory.
DSL: Domestic Substances List
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Japanese Existing and New Chemical Substances
ECL: Existing Chemicals List, the Korean chemical inventory
IECSC: Inventory of existing chemical substances in China..

-- End of SDS --