Safety Data Sheet

Regulation (EC) No 1907/2006 (REACH) &

COMMISSION REGULATION (EU) 2015/830

Applicant	BMZ Company Limited
Address	Room 101, 401, 501， Floor 2-3, 2nd building, No.2 Jinlong Street, Baolong Industry Zone, Longgang, Shenzhen, Guangdong, PR.China
Attn.:	Ms. Jenny Gong
Sample Description:	Li-ion Battery
Model No.:	107513

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
TÜV SÜD Group
Building 12&13, Zhiheng Wisdomland Business Park,
Nantou Checkpoint road 2,
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SECTION 1: Identification of the substance /mixture and of the company/undertaking

1.1. Product identifier

Product Name:	Li-ion Battery
Brand	/
Model No.:	107513
REACH registration No.:	Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use:	Battery
Uses advised against:	No information available

1.3. Details of the supplier of the safety data sheet

Company:	BMZ Company Limited
Address:	Room 101, 401, 501， Floor 2-3, 2nd building, No.2 Jinlong Street, Baolong Industry Zone, Longgang, Shenzhen, Guangdong, PR.China
Telephone:	86-0755-89775803
FAX:	86-0755-89775900
E-mail:	Zhilin.cai@bmz-group.cn

1.4. Emergency telephone number

Emergency Phone:	86-0755-89775803

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Not classified.

2.2. Label elements

Symbols/Pictograms	No pictogram is used.
Signal word	No signal word is used.
Hazard Statements	Not classified.
Precautionary Statements	Not classified.

2.3. Other hazards

No information available

SECTION 3: Composition/information on ingredients

3.1. Mixture

Composition for Lithium ion cell (Model: ICR18650)

Chemical Name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Metal oxide	-	-	40-45	Not classified
Carbon	231-153-3	7440-44-0	10-30	Not classified
Electrolyte	-	-	10-20	Not classified
Copper	231-159-6	7440-50-8	2-10	Not classified
Aluminum foil	231-072-3	7429-90-5	2-10	Flam. Sol. 1 (H228) Water-react. 2 (H261)
Ethylene carbonate	202-510-0	96-49-1	5	Not classified
1,1-Difluoroethylene polymer	-	24937-79-9	<5	Not classified
Polypropylene	618-352-4	9003-07-0	3	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice

No special technical protective measures are necessary. If symptoms persist, call a physician.

Inhalation

Not an expected route of exposure. If symptoms persist, call a physician.

Skin Contact

No special technical protective measures are necessary. If skin irritation persists, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Direct contact of internal electrolyte gel with eyes may cause severe burns or blindness.
Direct contact of internal electrolyte gel with the skin may cause skin irritation or damaging burns.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media:	No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating and toxic gases and vapors

5.3. Advice for firefighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Do not touch or walk through spilled material. Avoid contact with skin, eyes or clothing. Avoid breathing dust/fume/gas/mist/vapors/spray. Use personal protection recommended in Section 8.

6.2. Environmental precautions

Local authorities should be advised if significant spillages cannot be contained. Prevent entry into waterways, sewers, basements or confined areas.

6.3. Methods and material for containment and cleaning up

Pick up and transfer to properly labeled containers.

6.4. Reference to other sections

See Section 7 for more information
See section 8 for more information
See section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Take precautionary measures against static discharges. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Use personal protection recommended in Section 8.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place
Keep away from heat
Keep locked up and out of reach of children
Keep away from food, drink and animal feeding stuffs
Store in accordance with local regulations

7.3. Specific end use(s)

Apart from the uses mentioned in SECTION 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ingredients with limit values that require monitoring at the workplace:

Chemical Name	Australia	Austria	Belgium	Denmark	European Union
Carbon (CAS #: 7440-44-0)	-	TWA: 5 mg/m³	-	-	-
Copper (CAS #: 7440-50-8)	1 mg/m³ 0.2 mg/m³	STEL 4 mg/m³ STEL 0.4 mg/m³ TWA: 1 mg/m³ TWA: 0.1 mg/m³	-	TWA: 1.0 mg/m³ TWA: 0.1 mg/m³	-
Aluminum foil (CAS #: 7429-90-5)	10 mg/m³ 5 mg/m³	STEL 20 mg/m³ TWA: 10 mg/m³	-	TWA: 5 mg/m³ TWA: 2 mg/m³	-

Chemical Name	Latvia	France	Finland	Germany	Italy
Copper (CAS #: 7440-50-8)	TWA: 0.5 mg/m³ STEL: 1 mg/m³	TWA: 0.2 mg/m³ TWA: 1 mg/m³ STEL: 2 mg/m³	TWA: 1 mg/m³ TWA: 0.1 mg/m³	TWA: 0.01 mg/m³ Ceiling / Peak: 0.02 mg/m³ Ceiling / Peak: 0.2 mg/m³	-
Aluminum foil (CAS #: 7429-90-5)	TWA: 2 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 1.5 mg/m³	TWA: 4 mg/m³ TWA: 1.5 mg/m³	-
Polypropylene (CAS #: 9003-07-0)	TWA: 5 mg/m³	-	-	-	-

Chemical Name	Poland	Portugal	Spain	Switzerland	Netherlands
Copper (CAS #: 7440-50-8)	-	-	-	-	TWA: 0.1 mg/m³
Aluminum (CAS #: 7429-90-5)	TWA: 2.5 mg/m³ TWA: 1.2 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 3 mg/m³	-

Chemical Name	Norway	United Kingdom	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper (CAS #: 7440-50-8)	TWA: 0.1 mg/m³ TWA: 1 mg/m³ STEL: 0.1 mg/m³ STEL: 1 mg/m³	-	TWA: 0.2 mg/m³ fume TWA: 1 mg/m³ Cu dust and mist	-	IDLH: 100 mg/m³ dust, fume and mist IDLH: 100 mg/m³ Cu dust and mist TWA: 1 mg/m³ dust and mist TWA: 0.1 mg/m³ fume TWA: 1 mg/m³ Cu dust and mist
Aluminum (CAS #: 7429-90-5)	TWA: 5 mg/m³ STEL: 5 mg/m³	STEL: 30 mg/m³ STEL: 12 mg/m³ TWA: 10 mg/m³ TWA: 4 mg/m³	TWA: 1 mg/m³ respirable fraction	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 15 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction (vacated) TWA: 5 mg/m³ Al Aluminum	TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust TWA: 5 mg/m³ Al

Derived No Effect Level (DNEL)

No information available.

Predicted No Effect Concentration (PNEC)

No information available.

8.2. Exposure controls

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection:	No special technical protective measures are necessary.
Hand Protection:	No special technical protective measures are necessary.
Skin and body protection:	No special technical protective measures are necessary.
Respiratory protection:	In case of insufficient ventilation, wear suitable respiratory equipment.

8.3. Environmental exposure controls

Avoid release to the environment.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Solid
Color	Gray
Odor	Odorless
Odor Threshold	Not determined
pH	Not determined
Melting point/freezing point	Not determined
Boiling point / boiling range	Not determined
Flash point	Not determined
Evaporation rate	Not determined
Flammability	Not determined
Flammability Limit in Air	Not determined
Vapor Pressure	Not determined
Vapor density	Not determined
Density	Not determined
Relative density	Not determined
Bulk density	Not determined
Specific gravity	Not determined
Water solubility	Not determined
Partition coefficient	Not determined
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Kinematic viscosity	Not determined
Dynamic viscosity	Not determined
Explosive properties	Not an explosive

Oxidizing properties	Not determined

9.2. Other information

Nominal voltage: 36V	Nominal voltage: 36V
Rated capacity: 12Ah, 432Wh	Rated capacity: 12Ah, 432Wh
Limited charge voltage: 42.2V	Limited charge voltage: 42.2V

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Heat, flames and sparks.

10.5. Incompatible materials

None known based on information supplied.

10.6. Hazardous decomposition products

None under normal use conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Copper (CAS #: 7440-50-8)	> 2500 mg/kg bw(rat)	> 2000 mg/kg bw(rat)	=1.03 mg/L/4 h(rat)
Carbon (CAS #: 7440-44-0)	> 10000 mg/kg (Rat)	-	-
Aluminum (CAS #: 7429-90-5)	> 15900 mg/kg bw(rat)	-	> 0.888 mg/L/4 h(rat)
Ethylene carbonate (CAS #: 96-49-1)	= 10 g/kg (Rat)	> 3 g/kg (Rabbit)	-
Polypropylene (CAS #: 9003-07-0)	>5 g/kg	-	-

Skin corrosion/irritation

Non-irritating to the skin.

Serious eye damage/eye irritation

No eye irritation.

Sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

Chemical name	European Union	IARC
Polypropylene (CAS #: 9003-07-0)	-	Group 3

Reproductive toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Aspiration hazard

No information available.

SECTION 12: Ecological information

12.1. Toxicity

Chemical Name	Algae/aquatic plants EC50	Fish LC50	Crustacea EC50
Copper (CAS #: 7440-50-8)	0.031 - 0.054 mg/L/96h Pseudokirchneriella subcapitata static 0.0426 - 0.0535 mg/L/72h Pseudokirchneriella subcapitata static	1.25: 96 h Lepomis macrochirus mg/L LC50 static 0.3: 96 h Cyprinus carpio mg/L LC50 semi-static 0.8: 96 h Cyprinus carpio mg/L LC50 static 0.112: 96 h Poecilia reticulata mg/L LC50 flow-through 0.0068 - 0.0156: 96 h Pimephales promelas mg/L LC50 0.3: 96 h Pimephales promelas mg/L LC50 static 0.2: 96 h Pimephales promelas mg/L LC50 flow-through 0.052: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

No information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14: Transport information

14.1. UN Number	3480
14.2. UN Proper shipping name	LITHIUM ION BATTERIES (including lithium ion polymer batteries)
14.3. Transport hazard class(es)	9
14.4. Packing Group	II
14.5. Environmental hazards	Not regulated
14.6. Special precautions for user	No information available
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code	Does not apply

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

European Union

Component	EINECS/ELINCS	SVHC candidates	RESTRICTIONS - REACH TITLE VIII
Carbon 7440-44-0 (10-30)	X	-	-
Copper 7440-50-8 (2-10)	X	-	-
Aluminum foil 7429-90-5 (2-10)	X	-	-
Ethylene carbonate 96-49-1 (5)	X	-	-

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
Take note of Directive 94/33/EC on the protection of young people at work
Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

International inventories

Component	TSCA	DSL/NDSL	ENCS	IECSC	KECL	PICCS	AICS
Carbon 7440-44-0 (10-30)	X	X	-	X	X	X	X
Copper 7440-50-8 (2-10)	X	X	-	X	X	X	X
Aluminum foil 7429-90-5 (2-10)	X	X	-	X	X	X	X
Ethylene carbonate 96-49-1 (5)	X	X	X	X	X	X	X
1,1-Difluoroethylene polymer 24937-79-9 (5)	X	X	X	X	X	X	X
Polypropylene 9003-07-0 (3)	X	X	X	X	X	X	X

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Key or legend to abbreviations and acronyms used in the safety data sheet

TWA - TWA (time-weighted average)

STEL - STEL (Short Term Exposure Limit)

Ceiling - Maximum limit value

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

Test result according to Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria, Part III, subsection 38.3 (ST/SG/AC.10/11/Rev.5 Amendment 1 and Amendment 2)

The battery samples pass all of the requirement test items.

Full text of H-Statements referred to under section 3

H228 - Flammable solid.

H261 - In contact with water releases flammable gases.

Disclaimer

The information provided in this Material 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.

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