

SAFETY DATA SHEET

Issuing Date 25-Apr-2017

Revision Date 25-Apr-2017

Revision Number 1

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier

Product Name 103030PL-3.7V-1000mAh

Other means of identification

UN/ID no UN3480

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Li-ion polymer battery

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address

Shenzhen huayou macro industry new energy technology co.Ltd.
No.12, tianxi Road, Longhua new District, Shenzhen
Guangdong, China 518110
Telephone: 86-755-28020102

Emergency telephone number 86-755-28020102

2. HAZARD IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Carcinogenicity	Category 1A
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Label Elements

Danger

Hazard statements

May cause cancer



Appearance No information available	Physical state Solid	Odor No information available
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Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applied

Additional information

May be harmful in contact with skin

3. Composition/information on Ingredients

Substance

Chemical name	CAS No.	Weight-%	Trade secret
cobalt lithium dioxide	12190-79-3	20 - 30	*
lithium hexafluorophosphate(1-)	21324-40-3	20 - 30	*
Graphite	7782-42-5	20 - 30	*
Copper	7440-50-8	NF	*
Aluminum foil	7429-90-5	NF	*
Aluminum Packing Foil	12042-91-0	1 - 5	*
PE Separator	90989-93-8	1 - 5	*
Polyvinylidene fluoride	24937-79-9	1 - 5	*
Nickel	61788-71-4	0.1 - 1	*
Styrene, butadiene copolymer	9003-55-8	0.1 - 1	*

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

4. First aid measures

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical No information available.

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 Ensure adequate ventilation.

Additional information Refer to protective measures listed in Sections 7 and 8.

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 Pick up and transfer to properly labeled containers.

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 Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
cobalt lithium dioxide 12190-79-3	TWA: 0.02 mg/m ³ Co	-	-
lithium hexafluorophosphate(1-) 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	-
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ natural respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ Al Aluminum	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust TWA: 5 mg/m ³ Al
Aluminum Packing Foil 12042-91-0	TWA: 1 mg/m ³ respirable particulate matter	-	-
Nickel 61788-71-4	-	TWA: 1 mg/m ³ Ni (vacated) TWA: 0.1 mg/m ³ Ni (vacated) TWA: 1 mg/m ³ Ni	IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ except Nickel carbonyl Ni

Appropriate engineering controls

Engineering controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection No special protective equipment required.

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

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.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	No information available
Color	No information available
Odor	No information available
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

Additional information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Information on toxicological effects

Symptoms No information available.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	9,187.00 mg/kg
ATEmix (dermal)	2,002.00 mg/kg

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum Packing Foil 12042-91-0	= 9187 mg/kg (Rat)	> 2000 mg/kg (Rat)	-

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

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Classification based on data available for ingredients. Contains a known or suspected carcinogen.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
cobalt lithium dioxide 12190-79-3	A3	Group 2B	-	X
Nickel 61788-71-4	-	Group 1	Known	X
Styrene, butadiene copolymer 9003-55-8	-	Group 3	-	-

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target organ effects Respiratory system, Eyes, Skin, Central Vascular System (CVS).

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Copper 7440-50-8	0.0426 - 0.0535: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.031 - 0.054: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	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 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	-	0.03: 48 h Daphnia magna mg/L EC50 Static
Aluminum Packing Foil 12042-91-0	-	100 - 500: 96 h Brachydanio rerio mg/L LC50 static	-	-

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Other adverse effects No information available.

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.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
cobalt lithium dioxide 12190-79-3	Toxic
Copper 7440-50-8	Toxic
Aluminum foil 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

Note: The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT
 UN/ID no UN3480
 Proper shipping name LITHIUM ION BATTERIES
 Hazard Class 9
 Special Provisions A51
 Description UN3480, Lithium ion batteries, 9, II
 Emergency Response Guide Number 147

TDG
 Description UN3480, Lithium ion batteries, 9, II

MEX
 Description UN3480, Lithium ion batteries, 9, II

ICAO (air)
 Description UN3480, Lithium ion batteries, 9, II

IATA
 ERG Code 9F
 Description UN3480, Lithium ion batteries, 9, II

IMDG
 Description UN3480, Lithium ion batteries, 9, II

RID
 Description UN3480, Lithium ion batteries, 9, II

ADR
 Description UN3480, Lithium ion batteries, 9, II

ADN

Description UN3480, Lithium ion batteries, 9, II

15. Regulatory Information

International Inventories

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

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

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper 7440-50-8	-	X	X	-
Nickel 61788-71-4	-	X	-	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Copper 7440-50-8	5000 lb	-

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Nickel - 61788-71-4	Carcinogen

U.S. State Right-to-Know Regulations

US State Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
cobalt lithium dioxide 12190-79-3	X	-	X
lithium hexafluorophosphate(1-) 21324-40-3	X	-	-
Graphite 7782-42-5	X	X	X
Copper 7440-50-8	X	X	X
Aluminum foil 7429-90-5	X	X	X
Nickel 61788-71-4	X	-	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applied

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

<u>NFPA</u>	Health hazards 0	Flammability 0	Instability 0	Physical and Chemical Hazards -
<u>HMIS</u>	Health hazards 1*	Flammability 0	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>	* = Chronic Health Hazard			

Revision Date 25-Apr-2017

Revision Note No information available.

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