### Safety Data Sheets (SDSs)

**Client**  
JiangXi YuTian Technology Co., Ltd.

**Add. of Client**  
No.98, Fuqian Road, Shanghu Town, gao'an City, Jiangxi Province.

**Add. of Manufacturer**  
No.98, Fuqian Road, Shanghu Town, gao'an City, Jiangxi Province.

**Description**  
Polymer Li-ion Battery

**Model/Type**  
903036

**Manufacturer**  
JiangXi YuTian Technology Co., Ltd.

**Nominal Voltage**  
3.7V, 1050mAh, 3.885Wh

**Date of Receipt**  
2018-05-28

**Laboratory**  
Shenzhen ZRLK Testing Technology Co., Ltd.

**Address**  
6F, Fuxina Industrial Park, Liuxiandong, Xili Street, Nanshan District, Shenzhen, China

**Approved Signatory**  
Maggie.Gao

**Inspected by**  
Ailis.Ma

**Censored by**  
Lahm Peng
1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Identifier**

Product name: Polymer Li-ion Battery  
Model: 903036

**Other means of identification**

Synonyms: none

**Recommended use of the chemical and restrictions on use**

Recommended Use: Used in portable electronic equipments;
Uses advised against:

a) Do not dismantle, open or shred secondary cells or batteries.
b) Keep batteries out of the reach of children.
Battery usage by children should be supervised. Especially keep small batteries out of reach of small children.
c) Seek medical advice immediately if a cell or a battery has been swallowed.
d) Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight.
e) 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.
f) Do not remove a cell or battery from its original packaging until required for use.
g) Do not subject cells or batteries to mechanical shock.
h) 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.
i) Do not use any charger other than that specifically provided for use with the equipment.
j) Observe the plus (+) and minus (–) marks on the cell, battery and equipment and ensure correct use.
k) Do not use any cell or battery which is not designed for use with the equipment.
l) Do not mix cells of different manufacture, capacity, size or type within a device.
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 the cell or battery only 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 supplier of the safety data sheet:**

Supplier Name: JiangXi YuTian Technology Co., Ltd.
Address: No.98, Fuqian Road, Shanghu Town, gao ‘an City, Jiangxi Province, China

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Report No.: ZKS180500243
TRF No. SDS-1A
2. HAZARDS IDENTIFICATION

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

Classification of the substance or mixture
Classification according to GHS
Acute Toxicity, Dermal (Hazard category 3)
Skin irritation (Hazard category 2)
Carcinogenicity (Hazard category 2)
Skin sensitisation (Hazard category 1)
Respiratory sensitisation (Hazard category 1)
Specific target organ toxicity — single exposure; respiratory tract irritation (Hazard category 3)
Specific target organ toxicity — single exposure; narcosis (Hazard category 3)
Eye Irritate (Hazard category 1)
Flammable liquids (Hazard Category 2)

GHS Label elements, including precautionary statements:

![GHS Label elements](image)

Signal word: Danger

Hazard statement(s):
H225: Highly flammable liquid and vapour.
H250: Catches fire spontaneously if exposed to air;
H261: In contact with water releases flammable gases.
H317: May cause an allergic skin reaction
H351: Suspected of causing cancer <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

precautionary statements:

Prevention:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P210: Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P222: Do not allow contact with air.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/…/equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232: Handle under inert gas. Protect from moisture.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P272: Contaminated work clothing should not be allowed out of the workplace.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**
P335+P334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P370+P378: In case of fire: Use water or extinguishers for extinction.
P302 + P334: IF ON SKIN: Immerse in cool water/wrap in wet bandages.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P308 + P313: IF exposed or concerned: Get medical advice/attention.
P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
P321: Specific treatment (see Lithium ion battery on this label).
P363: Wash contaminated clothing before reuse.
P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**Storage:**
P403 + P235: Store in a well-ventilated place. Keep cool.
P402 + P404: Store in a dry place. Store in a closed container.
P405: Store locked up.

**Disposal**
P501: Dispose of contents/container in accordance with local/national regulations

**Hazards not otherwise classified (HNOC)**
Not Applicable

**Other information**
No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical characterization:** Mixtures

**Description:**
Product: Consisting of the following components.

<table>
<thead>
<tr>
<th>Common Chemical Name</th>
<th>Concentration (%)</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt Lithium Oxide</td>
<td>34</td>
<td>12190-79-3</td>
</tr>
<tr>
<td>Aluminum</td>
<td>15</td>
<td>7429-90-5</td>
</tr>
</tbody>
</table>
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  No information available.

Notes to Physician  Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
CO₂, dry chemical powder, water spray.

Unsuitable Extinguishing Media: No information available.

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 hazardous 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.

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 Precautions  Refer 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 item 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.

7. HANDLING AND STORAGE

Precautions for safe handling
Handling  Handle 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 Battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium ion 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 3.7V~4.2V 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 out of reach of children. Do not expose Lithium ion 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**  None known.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Control parameters

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt Lithium Manganese Nickel Oxide 182442-95-1</td>
</tr>
<tr>
<td>TLV (USA)</td>
</tr>
<tr>
<td>MAK (Germany)</td>
</tr>
</tbody>
</table>

**Other Exposure Guidelines**  Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962(11th Cir., 1992).

**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.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Form: Prismatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>Silver</td>
</tr>
<tr>
<td>Odour:</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>No information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change in condition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH, with indication of the concentration</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
</tr>
<tr>
<td>Initial boiling point and Boiling range:</td>
</tr>
<tr>
<td>Flash Point</td>
</tr>
<tr>
<td>Evaporation rate</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
</tr>
<tr>
<td>Vapor Density:</td>
</tr>
<tr>
<td>relative density:</td>
</tr>
<tr>
<td>Solubility in Water:</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
</tr>
<tr>
<td>n-octanol/water partition coefficient</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
</tr>
<tr>
<td>Odout threshold</td>
</tr>
<tr>
<td>Evaporation rate</td>
</tr>
<tr>
<td>Viscosity</td>
</tr>
<tr>
<td>Other Information</td>
</tr>
</tbody>
</table>
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.

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(carcinogenicity, mutagenicity and toxicity for reproduction):** No information available.

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.

13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

Recommendation: Must not be disposed together with household garbage.
Do not allow product to reach sewage system

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

Land transport
ADR/RID class: Not regulated.
UN-Number: UN3481.

Maritime transport
IMDG Class: Class 9.
UN Number: UN3481.
Marine pollutant: No

Air transport
ICAO/IATA Class: Class 9
UN/ID Number: UN3481
Environmental hazards: Not applicable.
Special precautions for user: Not applicable.
Transport/Additional information: Not restricted goods according to the above specifications.
The Lithium-ion Battery had been tested according to the requirements of the UN manual of tests and Criteria, Part III, subsection 38.3;
The lithium ion batteries according to Section II of PACKING INSTRUCTION 966 of the Dangerous Goods regulations 59th Edition may be transported.
The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.
Meets requirements of DOT Special Provision 188 to be transported as non-dangerous goods
Meets the requirements of 49 CFR 173.185 to be transported as non-dangerous goods for road, rail, air, and vessel (Effective October 1, 2016)
The package must be handled with care and that a flammability hazard exists if the package is damaged;

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
EU Regulation:
Authorisations: No information available.
Restrictions on use: No information available.

Regulatory information

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>EU (EINECS)</th>
<th>US (TSCA)</th>
<th>Japan (ENCS)</th>
<th>Canada (DSL/NDSL)</th>
<th>Australia (AICS)</th>
<th>Korea (ECL)</th>
<th>China (IECSC)</th>
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</table>

Report No.: ZKS180500243
TRF No. SDS-1A
### Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

### 16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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**End of SDS**

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**Notes:**
- Listed: Listed in the database.
- Not listed: Not listed in the database.
- DSL: Data from the DSL database.
- NDSL: Data from the NDSL database.

<table>
<thead>
<tr>
<th>Chemical Name</th>
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<th>Not listed</th>
<th>NDSL</th>
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