

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Product Name** Li-ion Battery 2M8-22-0023

### Other means of identification

**Synonyms** None

**Nominal Voltage** 3.7V

**Nominal Capacity** 4000mAh

**Watt-hour Rating** 14.8Wh

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

**Recommended Use** LITHIUM ION BATTERIES

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

**Supplier Name** QEE Technology (Shenzhen) Co Ltd

**Supplier Address** Building 17, Hongfa Ind. Park, Tang Tou Road, Shiyan, Bao'an District, Shenzhen, Guangdong, China, 518108

**Supplier Phone Number** +86-755-23032152

**Supplier Email** info@qee.asia

### Emergency telephone number

**Company Emergency Phone Number** +86-755-23032152

## 2. HAZARDS 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.

Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

## GHS Label elements, including precautionary statements

### Emergency Overview

**Signal word**

**Danger**

#### **Hazard Statements**

Harmful in contact with skin  
Causes severe skin burns and eye damage  
Suspected of causing cancer  
Causes damage to organs through prolonged or repeated exposure



This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.

**Appearance** No information available

**Physical state** Solid

**Odor** No information available

#### **Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product

#### **Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor/physician  
Specific treatment (see supplemental first aid instructions on this label)

#### **Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor/physician

#### **Skin**

Call a POISON CENTER or doctor/physician if you feel unwell  
Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

#### **Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Immediately call a POISON CENTER or doctor/physician

#### **Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

## 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 applicable

## Unknown Toxicity

47.5 % of the mixture consists of ingredient(s) of unknown toxicity

## Other information

May be harmful if swallowed

## Interactions with Other Chemicals

No information available.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%	Trade Secret
Cobalt lithium manganese nickel oxide	182442-95-1	35-55	*
Graphite	7782-42-5	15-40	*
Copper	7440-50-8	5-10	*
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1-5	*
Methyl ethyl carbonate	623-53-0	0.5-2	*
Aluminum	7429-90-5	1-10	*

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

## 4. FIRST AID MEASURES

### First aid measures

#### General Advice

First aid is upon rupture of sealed battery.

#### Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

#### Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice.

#### Inhalation

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

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should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.

**Ingestion** Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

**Self-protection of the first aider** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

## **Most important symptoms and effects, both acute and delayed**

**Most Important Symptoms and Effects** Burning sensation.

## **Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

## **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**

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

### **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.

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other Information** Refer to protective measures listed in Sections 7 and 8.

### Environmental precautions

**Environmental precautions** Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

### 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.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Handling** In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

### Conditions for safe storage, including any incompatibilities

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

**Incompatible Products** Acids. Bases. Oxidizing agent.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Cobalt lithium manganese nickel oxide	TWA: 0.02 mg/m <sup>3</sup>	-	

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

182442-95-1

Graphite 7782-42-5	TWA: 2 mg/m <sup>3</sup> respirable fraction all forms except graphite fibers	TWA: 15 mg/m <sup>3</sup> total dust synthetic TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic (vacated) TWA: 2.5 mg/m <sup>3</sup> respirable dust natural (vacated) TWA: 10 mg/m <sup>3</sup> total dust synthetic (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic TWA: 15 mppcf natural TWA: 2.5 mg/m <sup>3</sup> F TWA: 2.5 mg/m <sup>3</sup> dust (vacated) TWA: 2.5 mg/m <sup>3</sup>	IDLH: 1250 mg/m <sup>3</sup> TWA: 2.5 mg/m <sup>3</sup> respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3 Aluminum 7429-90-5	TWA: 2.5 mg/m <sup>3</sup> F TWA: 1 mg/m <sup>3</sup> respirable fraction	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 5 mg/m <sup>3</sup> Al Aluminum	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

**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

## Individual protection measures, such as personal protective equipment

**Eye/face protection** Face protection shield.

**Skin and body protection** Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.

**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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and Chemical Properties

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

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<b>Physical state</b>	Solid		
<b>Appearance</b>	No information available	<b>Odor</b>	No information available
<b>Color</b>	No information available	<b>Odor Threshold</b>	No information available
<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks</u></b>	<b><u>Method</u></b>
<b>pH</b>	No data available	None known	
<b>Melting / freezing point</b>	No data available	None known	
<b>Boiling point / boiling range</b>	No data available	None known	
<b>Flash Point</b>	No data available	None known	
<b>Evaporation Rate</b>	No data available	None known	
<b>Flammability (solid, gas)</b>	No data available	None known	
<b>Flammability Limit in Air</b>			
<b>Upper flammability limit</b>	No data available		
<b>Lower flammability limit</b>	No data available		
<b>Vapor pressure</b>	No data available	None known	
<b>Vapor density</b>	No data available	None known	
<b>Specific Gravity</b>	No data available	None known	
<b>Water Solubility</b>	No data available	None known	
<b>Solubility in other solvents</b>	No data available	None known	
<b>Partition coefficient: n-octanol/water</b>	No data available	None known	
<b>Autoignition temperature</b>	No data available	None known	
<b>Decomposition temperature</b>	No data available	None known	
<b>Kinematic viscosity</b>	No data available	None known	
<b>Dynamic viscosity</b>	No data available	None known	
<b>Explosive properties</b>	No data available		
<b>Oxidizing properties</b>	No data available		
<b><u>Other Information</u></b>			
<b>Softening Point</b>	No data available		
<b>VOC Content (%)</b>	No data available		
<b>Particle Size</b>	No data available		
<b>Particle Size Distribution</b>			

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# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

## 10. STABILITY AND REACTIVITY

### Reactivity

No data available.

### Chemical stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

### Hazardous Polymerization

Hazardous polymerization does not occur.

### Conditions to avoid

Exposure to air or moisture over prolonged periods.

### Incompatible materials

Acids. Bases. Oxidizing agent.

### Hazardous Decomposition Products

Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### **Product Information**

Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:.

#### **Inhalation**

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

#### **Eye contact**

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

#### **Skin contact**

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

#### **Ingestion**

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May



# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

## Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
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## Information on toxicological effects

**Symptoms** Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing.

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

**Sensitization** No information available.

**Mutagenic Effects** No information available.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Cobalt lithium manganese nickel oxide 182442-95-1	A3	Group 2B		X

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 2B - Possibly Carcinogenic to Humans

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

**Chronic Toxicity** Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects.

**Target Organ Effects** Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Central Vascular System (CVS). Lymphatic System. Lungs. Liver.

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

**Aspiration Hazard** No information available.

## Numerical measures of toxicity Product Information

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

**ATEmix (oral)**

3,281.00 mg/kg

**ATEmix (dermal)**

1,969.00 mg/kg (ATE)

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)

### Persistence and Degradability

No information available.

### Bioaccumulation

No information available

### Other adverse effects

No information available.

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

#### Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

#### Contaminated Packaging

Dispose of contents/containers in accordance with local regulations.

#### California Hazardous Waste Codes 141

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

Chemical name	California Hazardous Waste
Aluminum 7429-90-5	Ignitable powder
Cobalt lithium manganese nickel oxide 182442-95-1	Toxic

## 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

Proper Shipping Name

Hazard Class

Emergency Response Guide  
Number

NOT REGULATED

NON-REGULATED

N/A

147

#### TDG

Not regulated

#### MEX

Not regulated

#### ICAO

Not regulated

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

**IATA**  
Proper Shipping Name Not regulated  
Hazard Class NON REGULATED  
N/A

**IMDG/IMO**  
Hazard Class Not regulated  
EmS-No. N/A  
F-A, S-I

**RID** Not regulated

**ADR** Not regulated

**ADN** Not regulated

## 15. REGULATORY INFORMATION

### International Inventories

TSCA Complies  
DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Aluminum - 7429-90-5	7429-90-5	1-10	1.0

#### **SARA 311/312 Hazard Categories**

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

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

### US State Regulations

# SAFETY DATA SHEET

Issuing Date 09-Aug-2016

File Number: 2016080901

## California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name

California Proposition 65

## U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Cobalt lithium manganese nickel oxide 182442-95-1	X		X	X	X
Graphite 7782-42-5	X	X	X		
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X				
Aluminum 7429-90-5	X	X	X	X	

## International Regulations

### Mexico

#### National occupational exposure limits

Chemical name

Graphite

Aluminum

Carcinogen Status

Exposure Limits

Mexico: TWA= 2 mg/m<sup>3</sup>

Mexico: TWA= 10 mg/m<sup>3</sup>

Mexico - Occupational Exposure Limits - Carcinogens

### Canada

#### WHMIS Hazard Class

Non-controlled

## 16. OTHER INFORMATION

NFPA	Health Hazards	1	Flammability	0	Instability	0	Physical and Chemical Hazards	-
HMIS	Health Hazards	0	Flammability	0	Physical Hazard	0	Personal Protection	X

#### Prepared By

QEE Technology (Shenzhen) Co Ltd

#### Issuing Date

09-Aug-2016

#### Revision Date

09-Aug-2016

### 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