

# SAFETY DATA SHEET

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NGHS / English



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## 1. IDENTIFICATION

### Product identifier

**Product Name** Rechargeable Li-ion Battery L22M4PE0 by Simplo

### Other means of identification

**Product Code(s)** 1773294

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

**Recommended Use** Lithium Ion Battery

**Restrictions on use** No information available

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

**Supplier Identification** Lenovo LNB laptops

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### Emergency telephone number

**Company Emergency Phone Number** 18116118603

## 2. HAZARDS IDENTIFICATION

### Classification

|                                   |             |
|-----------------------------------|-------------|
| Skin corrosion/irritation         | Category 2  |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization                | Category 1  |
| Carcinogenicity                   | Category 1B |



This is a battery. In case of rupture: the above hazards exist.

**Appearance** Black

**Physical state** Solid

**Odor** Odorless

**GHS Label elements, including precautionary statements**

**Danger**

**Hazard statements**

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

May cause cancer



**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

Wash face, hands and any exposed skin thoroughly after handling

Avoid breathing dust/fume/gas/mist/vapors/spray

Contaminated work clothing must not be allowed out of the workplace

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

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

If eye irritation persists: Get medical advice/attention

**Skin**

IF ON SKIN: Wash with plenty of water and soap

Take off contaminated clothing and wash it before reuse

If skin irritation or rash occurs: Get medical advice/attention

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other information**

Very toxic to aquatic life with long lasting effects.

**Unknown acute toxicity**

30.81 % of the mixture consists of ingredient(s) of unknown toxicity

27.34 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30.81 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

30.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

30.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

30.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance

Not applicable.

#### Mixture

| Chemical name                                 | CAS No     | Weight-% | Hazardous Material<br>Information Review Act<br>registry number (HMIRA<br>registry #) | Date HMIRA filed and<br>date exemption granted<br>(if applicable) |
|-----------------------------------------------|------------|----------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Lithium Cobalt Oxide<br>(CoLiO <sub>2</sub> ) | 12190-79-3 | 44.65    | -                                                                                     | -                                                                 |
| Graphite                                      | 7782-42-5  | 22.86    | -                                                                                     | -                                                                 |
| Copper                                        | 7440-50-8  | 10.49    | -                                                                                     | -                                                                 |
| Aluminum                                      | 7429-90-5  | 5        | -                                                                                     | -                                                                 |
| Propylene carbonate                           | 108-32-7   | 2.24     | -                                                                                     | -                                                                 |
| Ethylene carbonate                            | 96-49-1    | 2.24     | -                                                                                     | -                                                                 |
| 1,3-Propane sultone                           | 1120-71-4  | 0.5      | -                                                                                     | -                                                                 |
| Nickel                                        | 7440-02-0  | 0.4      | -                                                                                     | -                                                                 |

### 4. FIRST AID MEASURES

#### Description of first aid measures

|                                           |                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>                     | Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention. First aid is upon rupture of sealed battery.                                                                                                                        |
| <b>Inhalation</b>                         | Remove to fresh air. Get medical attention immediately if symptoms occur.                                                                                                                                                                                                           |
| <b>Eye contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area. |
| <b>Skin contact</b>                       | May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician. Wash off immediately with soap and plenty of water for at least 15 minutes.                                                                                              |
| <b>Ingestion</b>                          | Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.                                                                                                                       |
| <b>Self-protection of the first aider</b> | Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).                                                                                                                                                                                       |

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

|                 |                                            |
|-----------------|--------------------------------------------|
| <b>Symptoms</b> | Itching. Rashes. Hives. Burning sensation. |
|-----------------|--------------------------------------------|

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

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| <b>Note to physicians</b> | May cause sensitization in susceptible persons. Treat symptomatically. |
|---------------------------|------------------------------------------------------------------------|

### 5. FIRE-FIGHTING MEASURES



|                                                       |                                                                                                                                    |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>                   | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.                            |
| <b>Large Fire</b>                                     | CAUTION: Use of water spray when fighting fire may be inefficient.                                                                 |
| <b>Unsuitable extinguishing media</b>                 | Do not scatter spilled material with high pressure water streams.                                                                  |
| <b>Specific hazards arising from the chemical</b>     | Product is or contains a sensitizer. May cause sensitization by skin contact.                                                      |
| <b>Hazardous Combustion Products</b>                  | Carbon oxides.                                                                                                                     |
| <b>Explosion Data</b>                                 |                                                                                                                                    |
| <b>Sensitivity to Mechanical Impact</b>               | None.                                                                                                                              |
| <b>Sensitivity to Static Discharge</b>                | None.                                                                                                                              |
| <b>Special protective equipment for fire-fighters</b> | 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

|                             |                                                                                                                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions</b> | 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. |
| <b>Other Information</b>    | Refer to protective measures listed in Sections 7 and 8.                                                                                                                                                 |

### Methods and material for containment and cleaning up

|                                |                                                       |
|--------------------------------|-------------------------------------------------------|
| <b>Methods for containment</b> | Prevent further leakage or spillage if safe to do so. |
| <b>Methods for cleaning up</b> | Pick up and transfer to properly labeled containers.  |

## 7. HANDLING AND STORAGE

### Precautions for safe handling

|                                |                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Advice on safe handling</b> | In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Conditions for safe storage, including any incompatibilities

|                           |                                                                                                                              |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage Conditions</b> | Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------|

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION



### Control parameters

#### Exposure Limits

| Chemical name                               | ACGIH TLV                                                                   | OSHA PEL                                                                                                                                                                                                                                                                                                       | NIOSH IDLH                                                                               |                                |
|---------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | TWA: 0.02 mg/m³                                                             | -                                                                                                                                                                                                                                                                                                              |                                                                                          |                                |
| Graphite<br>7782-42-5                       | TWA: 2 mg/m³ respirable particulate matter all forms except graphite fibers | TWA: 15 mg/m³ total dust synthetic<br>TWA: 5 mg/m³ respirable fraction synthetic<br>TWA: 15 mppcf respirable dust natural<br>(vacated) TWA: 2.5 mg/m³ respirable dust natural<br>(vacated) TWA: 10 mg/m³ total dust synthetic<br>(vacated) TWA: 5 mg/m³ respirable fraction synthetic<br>TWA: 15 mppcf natural | IDLH: 1250 mg/m³<br>TWA: 2.5 mg/m³ respirable dust                                       |                                |
| Copper<br>7440-50-8                         | TWA: 0.2 mg/m³ fume                                                         | TWA: 0.1 mg/m³ fume<br>TWA: 1 mg/m³ dust and mist<br>(vacated) TWA: 0.1 mg/m³ Cu dust, fume, mist                                                                                                                                                                                                              | IDLH: 100 mg/m³ dust, fume and mist<br>TWA: 1 mg/m³ dust and mist<br>TWA: 0.1 mg/m³ fume |                                |
| Aluminum<br>7429-90-5                       | TWA: 1 mg/m³ respirable particulate matter                                  | TWA: 15 mg/m³ total dust<br>TWA: 5 mg/m³ respirable fraction<br>(vacated) TWA: 15 mg/m³ total dust<br>(vacated) TWA: 5 mg/m³ respirable fraction                                                                                                                                                               | TWA: 10 mg/m³ total dust<br>TWA: 5 mg/m³ respirable dust                                 |                                |
| Nickel<br>7440-02-0                         | TWA: 1.5 mg/m³                                                              | TWA: 1 mg/m³<br>(vacated) TWA: 1 mg/m³                                                                                                                                                                                                                                                                         | IDLH: 10 mg/m³<br>TWA: 0.015 mg/m³                                                       |                                |
| Chemical name                               | Alberta                                                                     | British Columbia                                                                                                                                                                                                                                                                                               | Ontario TWA/EV                                                                           | Quebec                         |
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | TWA: 0.02 mg/m³                                                             | TWA: 0.02 mg/m³                                                                                                                                                                                                                                                                                                | TWA: 0.02 mg/m³                                                                          | TWA: 0.02 mg/m³                |
| Graphite<br>7782-42-5                       | TWA: 2 mg/m³                                                                | TWA: 2 mg/m³                                                                                                                                                                                                                                                                                                   | TWA: 2 mg/m³                                                                             | TWA: 2 mg/m³                   |
| Copper<br>7440-50-8                         | TWA: 0.2 mg/m³<br>TWA: 1 mg/m³                                              | TWA: 1 mg/m³<br>TWA: 0.2 mg/m³                                                                                                                                                                                                                                                                                 | TWA: 0.2 mg/m³<br>TWA: 1 mg/m³                                                           | TWA: 0.2 mg/m³<br>TWA: 1 mg/m³ |
| Aluminum<br>7429-90-5                       | TWA: 10 mg/m³                                                               | TWA: 1.0 mg/m³                                                                                                                                                                                                                                                                                                 | TWA: 1 mg/m³                                                                             | TWA: 10 mg/m³                  |
| 1,3-Propane sultone<br>1120-71-4            |                                                                             | TWA:                                                                                                                                                                                                                                                                                                           | TWA:                                                                                     | TWA:                           |
| Nickel<br>7440-02-0                         | TWA: 1.5 mg/m³                                                              | TWA: 0.05 mg/m³                                                                                                                                                                                                                                                                                                | TWA: 1 mg/m³                                                                             | TWA: 1.5 mg/m³                 |

#### Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992). See section 15 for national exposure control parameters.

#### Appropriate engineering controls

#### Engineering controls

Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

|                                |                                                                                                                                                                                                                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye/face protection            | Wear safety glasses with side shields (or goggles).                                                                                                                                                                                                                                      |
| Hand protection                | Wear suitable gloves. Impervious gloves.                                                                                                                                                                                                                                                 |
| Skin and body protection       | Wear suitable protective clothing. Long sleeved 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 | Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                |                          |
|----------------|--------------------------|
| Physical state | Solid                    |
| Appearance     | Black                    |
| Odor           | Odorless                 |
| Color          | 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 / 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                           |                    |                       |
| 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                                    | Insoluble in water |                       |
| Solubility(ies)                                     | No data available  | None known            |
| Partition coefficient: n-octanol/water <sup>1</sup> |                    |                       |
| 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            |

### Other Information

|                            |                          |
|----------------------------|--------------------------|
| Explosive properties       | No information available |
| Oxidizing properties       | No information available |
| 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 |
| Particle Size              | No information available |
| Particle Size Distribution | No information available |

## 10. STABILITY AND REACTIVITY



|                                           |                                                      |
|-------------------------------------------|------------------------------------------------------|
| <b>Reactivity</b>                         | No information available.                            |
| <b>Chemical stability</b>                 | Stable under normal conditions.                      |
| <b>Possibility of Hazardous Reactions</b> | None under normal processing.                        |
| <b>Hazardous Polymerization</b>           | Hazardous polymerization does not occur.             |
| <b>Conditions to avoid</b>                | None known based on information supplied.            |
| <b>Incompatible materials</b>             | Strong acids. Strong bases. Strong oxidizing agents. |
| <b>Hazardous Decomposition Products</b>   | Carbon oxides.                                       |

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

|                            |                                                                                                                                                                                                                                                     |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Information</b> | Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:                                                                                                                                       |
| <b>Inhalation</b>          | Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.                                                                                                                                        |
| <b>Eye contact</b>         | Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). Irritating to eyes.                                                                                                         |
| <b>Skin contact</b>        | Specific test data for the substance or mixture is not available. May cause sensitization by skin contact. Causes skin irritation. (based on components). Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. |
| <b>Ingestion</b>           | Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.                                                                                                   |

### Symptoms related to the physical, chemical and toxicological characteristics

|                 |                                                                             |
|-----------------|-----------------------------------------------------------------------------|
| <b>Symptoms</b> | Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes. |
|-----------------|-----------------------------------------------------------------------------|

### Numerical measures of toxicity

#### Acute toxicity

|                               |                                                                                                   |
|-------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Unknown acute toxicity</b> | 30.81 % of the mixture consists of ingredient(s) of unknown toxicity                              |
|                               | 27.34 % of the mixture consists of ingredient(s) of unknown acute oral toxicity                   |
|                               | 30.81 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity                 |
|                               | 30.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)       |
|                               | 30.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)     |
|                               | 30.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist) |

#### Product Information

#### Component Information

| Chemical name                 | Oral LD50            | Dermal LD50          | Inhalation LC50                      |
|-------------------------------|----------------------|----------------------|--------------------------------------|
| Lithium Cobalt Oxide (CoLiO2) | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rat ) | > 5.05 mg/L ( Rat ) 4 h              |
| Graphite                      | -                    | -                    | > 2000 mg/m <sup>3</sup> ( Rat ) 4 h |



|                     |                       |                          |                                     |
|---------------------|-----------------------|--------------------------|-------------------------------------|
| Copper              | -                     | -                        | > 5.11 mg/L ( Rat ) 4 h             |
| Aluminum            | -                     | -                        | > 0.888 mg/L ( Rat ) 4 h            |
| Propylene carbonate | = 29000 mg/kg ( Rat ) | > 3000 mg/kg ( Rabbit )  | -                                   |
| Ethylene carbonate  | = 10 g/kg ( Rat )     | > 26420 mg/kg ( Rabbit ) | > 730 mg/m <sup>3</sup> ( Rat ) 8 h |
| 1,3-Propane sultone | = 157 mg/kg ( Rat )   | -                        | -                                   |
| Nickel              | > 9000 mg/kg ( Rat )  | -                        | > 10.2 mg/L ( Rat ) 1 h             |

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

|                                          |                                                                                                                     |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Skin corrosion/irritation</b>         | Classification based on data available for ingredients. Irritating to skin.                                         |
| <b>Serious eye damage/eye irritation</b> | Classification based on data available for ingredients. Causes serious eye irritation.                              |
| <b>Respiratory or skin sensitization</b> | May cause sensitization by skin contact.                                                                            |
| <b>Germ cell mutagenicity</b>            | No information available.                                                                                           |
| <b>Carcinogenicity</b>                   | Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer. |

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

| Chemical name                                               | ACGIH | IARC     | NTP                    | OSHA |
|-------------------------------------------------------------|-------|----------|------------------------|------|
| Lithium Cobalt Oxide<br>(CoLiO <sub>2</sub> )<br>12190-79-3 | A3    | Group 2B | Reasonably Anticipated | X    |
| 1,3-Propane sultone<br>1120-71-4                            | A3    | Group 2A | Reasonably Anticipated | X    |
| Nickel<br>7440-02-0                                         | -     | Group 2B | Reasonably Anticipated | X    |

**Legend**

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

A3 - Animal Carcinogen

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

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

**NTP (National Toxicology Program)**

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

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

X - Present

|                                 |                           |
|---------------------------------|---------------------------|
| <b>Reproductive toxicity</b>    | No information available. |
| <b>STOT - single exposure</b>   | No information available. |
| <b>STOT - repeated exposure</b> | No information available. |
| <b>Aspiration hazard</b>        | No information available. |

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---------------|----------------------|------|----------------------------|-----------|
|---------------|----------------------|------|----------------------------|-----------|

|                     |                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                     |                        |                                                                            |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------|
| Graphite            | No data available                                                                                                                  | 96h LC50: > 100 mg/L (Danio rerio)                                                                                                                                                                                                                                                                                                                                                  | No data available      | No data available                                                          |
| Copper              | 96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata)<br>72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata) | 96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas)<br>96h LC50: < 0.3 mg/L (Pimephales promelas)<br>96h LC50: = 0.052 mg/L (Oncorhynchus mykiss)<br>96h LC50: = 0.112 mg/L (Poecilia reticulata)<br>96h LC50: = 0.2 mg/L (Pimephales promelas)<br>96h LC50: = 0.3 mg/L (Cyprinus carpio)<br>96h LC50: = 0.8 mg/L (Cyprinus carpio)<br>96h LC50: = 1.25 mg/L (Lepomis macrochirus) | No data available      | 48h EC50: = 0.03 mg/L (Daphnia magna)                                      |
| Propylene carbonate | 72h EC50: > 500 mg/L (Desmodesmus subspicatus)                                                                                     | 96h LC50: > 1000 mg/L (Cyprinus carpio)                                                                                                                                                                                                                                                                                                                                             | EC50 > 10000 mg/L 17 h | 48h EC50: > 500 mg/L (Daphnia magna)                                       |
| Ethylene carbonate  | No data available                                                                                                                  | 96h LC50: > 100 mg/L (Oncorhynchus mykiss)                                                                                                                                                                                                                                                                                                                                          | No data available      | No data available                                                          |
| Nickel              | 96h EC50: 0.174 - 0.311 mg/L (Pseudokirchneriella subcapitata)<br>72h EC50: = 0.18 mg/L (Pseudokirchneriella subcapitata)          | 96h LC50: = 1.3 mg/L (Cyprinus carpio)<br>96h LC50: = 10.4 mg/L (Cyprinus carpio)<br>96h LC50: > 100 mg/L (Brachydanio rerio)                                                                                                                                                                                                                                                       | No data available      | 48h EC50: = 1 mg/L (Daphnia magna)<br>48h EC50: > 100 mg/L (Daphnia magna) |

**Persistence and Degradability** No information available.

**Bioaccumulation**

#### Component Information

| Chemical name       | Partition coefficient |
|---------------------|-----------------------|
| Propylene carbonate | 0.48                  |
| Ethylene carbonate  | 0.11                  |

**Mobility** No information available.

**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 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       |
|----------------------------------------------------------|----------------------------------|
| Lithium Cobalt Oxide (CoLiO <sub>2</sub> )<br>12190-79-3 | Toxic                            |
| Aluminum<br>7429-90-5                                    | Ignitable powder                 |
| Nickel<br>7440-02-0                                      | Toxic powder<br>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**

Proper Shipping Name  
Hazard Class  
Emergency Response Guide  
Number

NOT REGULATED  
NON-REGULATED  
N/A  
147

**TDG****MEX**

Not applicable

**ICAO**

Not applicable

**IATA**

UN-No.  
Proper Shipping Name  
Hazard Class  
ERG Code  
Description

UN3480  
LITHIUM ION BATTERIES  
9  
12FZ  
UN3480, LITHIUM ION BATTERIES, 9

**IMDG/IMO**

Proper Shipping Name  
Hazard Class  
EmS-No.  
Marine Pollutant

Not applicable  
NON-REGULATED PER SP 188  
N/A  
F-A, S-I  
This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

**RID**

Not applicable

**ADR**

Not applicable



ADN

Not applicable

## 15. REGULATORY INFORMATION

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

### International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

### International Inventories

|               |                                                   |
|---------------|---------------------------------------------------|
| TSCA          | Contact supplier for inventory compliance status. |
| DSL/NDL       | Contact supplier for inventory compliance status. |
| EINECS/ELINCS | Contact supplier for inventory compliance status. |
| ENCS          | Contact supplier for inventory compliance status. |
| KECL          | Contact supplier for inventory compliance status. |
| PICCS         | Contact supplier for inventory compliance status. |
| AICS          | Contact supplier for inventory compliance status. |

### Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDL - 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  
 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 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 % |
|---------------------------------------------------------|------------|----------|-------------------------------|
| Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) - 12190-79-3 | 12190-79-3 | 44.65    | 0.1                           |
| Copper - 7440-50-8                                      | 7440-50-8  | 10.49    | 1.0                           |
| Aluminum - 7429-90-5                                    | 7429-90-5  | 5        | 1.0                           |
| 1,3-Propane sultone - 1120-71-4                         | 1120-71-4  | 0.5      | 0.1                           |
| Nickel - 7440-02-0                                      | 7440-02-0  | 0.4      | 0.1                           |

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

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

#### **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 | CWA - Toxic Pollutants | CWA - Priority | CWA - Hazardous |
|---------------|------------------|------------------------|----------------|-----------------|
|---------------|------------------|------------------------|----------------|-----------------|



|                     | Quantities |   | Pollutants | Substances |
|---------------------|------------|---|------------|------------|
| Copper<br>7440-50-8 |            | X | X          |            |
| Nickel<br>7440-02-0 |            | X | 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 | RQ                                         |
|----------------------------------|--------------------------|------------------------------------|--------------------------------------------|
| Copper<br>7440-50-8              | 5000 lb                  |                                    | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |
| 1,3-Propane sultone<br>1120-71-4 | 10 lb                    |                                    | RQ 10 lb final RQ<br>RQ 4.54 kg final RQ   |
| Nickel<br>7440-02-0              | 100 lb                   |                                    | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ  |

**US State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals.

| Chemical name                   | California Proposition 65        |
|---------------------------------|----------------------------------|
| 1,3-Propane sultone - 1120-71-4 | carcinogen, 1/1/1988             |
| Nickel - 7440-02-0              | carcinogen, 10/1/1989 (metallic) |

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

This product may contain substances regulated by state right-to-know regulations.

| Chemical name                                  | New Jersey | Massachusetts | Pennsylvania | Rhode Island | Illinois |
|------------------------------------------------|------------|---------------|--------------|--------------|----------|
| Lithium Cobalt Oxide<br>(CoLiO2)<br>12190-79-3 | X          |               | X            | X            | X        |
| Graphite<br>7782-42-5                          | X          | X             | X            |              |          |
| Copper<br>7440-50-8                            | X          | X             | X            | X            | X        |
| Aluminum<br>7429-90-5                          | X          | X             | X            | X            |          |
| Ethylene carbonate<br>96-49-1                  |            | X             | X            |              |          |
| 1,3-Propane sultone<br>1120-71-4               | X          | X             | X            | X            | X        |
| Nickel<br>7440-02-0                            | X          | X             | X            | X            | X        |

**16. OTHER INFORMATION**

|             |                  |                |                    |                                    |
|-------------|------------------|----------------|--------------------|------------------------------------|
| <b>NFPA</b> | Health hazards 1 | Flammability 0 | Instability 0      | Physical and Chemical Properties - |
| <b>HMIS</b> | Health hazards 0 | Flammability 0 | Physical hazards 0 | Personal Protection X              |

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**Disclaimer**

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**End of Safety Data Sheet**