

# SAFETY DATA SHEET

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NGHS / English



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## 1. IDENTIFICATION

### Product identifier

**Product Name** Positec 20v 2.0Ah li battery

### Other means of identification

**Product Code(s)** 1205382

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

**Recommended Use** LITHIUM ION BATTERIES

**Restrictions on use** No information available

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

**Supplier Identification** Positec(Macao Commercial Offshore) Limited

**Address** 18 Dongwang Road, Suzhou Industrial Park  
Suzhou  
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CN

**Telephone** Phone:(86) 512 65152888  
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**E-mail** email@positecgroup.com

### Emergency telephone number

**Company Emergency Phone Number** In USA and Canada 1-800-424-9300. Outside USA and Canada 1-703-741-5970

## 2. HAZARDS IDENTIFICATION

### Classification

|                                   |             |
|-----------------------------------|-------------|
| Acute toxicity - Oral             | Category 4  |
| Skin corrosion/irritation         | Category 2  |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization                | Category 1  |



|  |             |
|--|-------------|
| Carcinogenicity                                    | Category 1A |
| Specific target organ toxicity (repeated exposure) | Category 1  |

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

**Appearance** Black

**Physical state** Solid

**Odor** Neutral

**GHS Label elements, including precautionary statements**

**Danger**

**Hazard statements**

Harmful if swallowed  
 Causes skin irritation  
 Causes serious eye irritation  
 May cause an allergic skin reaction  
 May cause cancer  
 Causes damage to organs through prolonged or repeated exposure



**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  
 Do not eat, drink or smoke when using this product  
 Contaminated work clothing must not be allowed out of the workplace  
 Do not breathe dust/fume/gas/mist/vapors/spray

**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

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
 Rinse mouth

**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** 94.42 % of the mixture consists of ingredient(s) of unknown toxicity  
 62.8 % of the mixture consists of ingredient(s) of unknown acute oral toxicity  
 93.35 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity  
 94.42 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)  
 94.42 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)  
 94.42 % 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 Information Review Act registry number (HMIRA registry #) | Date HMIRA filed and date exemption granted (if applicable) |
|---|------------|----------|--|---|
| Nylon-6   | 25038-54-4 | 34.51    | -  | -   |
| Iron  | 7439-89-6  | 12.66    | -  | -   |
| Copper  | 7440-50-8  | 9.83     | -  | -   |
| Lithium nickel oxide (LiNiO <sub>2</sub> )                  | 12031-65-1 | 4.7      | -  | -   |
| Aluminum  | 7429-90-5  | 4.15     | -  | -   |
| Nickel  | 7440-02-0  | 3.65     | -  | -   |
| Lithium manganese oxide (LiMn <sub>2</sub> O <sub>4</sub> ) | 12057-17-9 | 2.82     | -  | -   |
| Manganese   | 7439-96-5  | 2.45     | -  | -   |
| Lithium Cobalt Oxide (CoLiO <sub>2</sub> )                  | 12190-79-3 | 1.88     | -  | -   |
| PVC (Chloroethylene, polymer)                               | 9002-86-2  | 1.26     | -  | -   |
| Phosphate(1-), hexafluoro-, lithium                         | 21324-40-3 | 1.07     | -  | -   |
| Carbon black  | 1333-86-4  | 0.35     | -  | -   |
| Silver  | 7440-22-4  | 0.14     | -  | -   |

### 4. FIRST AID MEASURES

#### Description of first aid measures

##### **General advice**

First aid is upon rupture of sealed battery. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

##### **Inhalation**

Remove to fresh air. Get medical attention immediately if symptoms occur.

##### **Eye contact**

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.

##### **Skin contact**

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.

##### **Ingestion**

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.



**Self-protection of the first aider** Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

**Symptoms** Itching. Rashes. Hives. Burning sensation.

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

**Note to physicians** May cause sensitization in susceptible persons. Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

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

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the chemical** Product is or contains a sensitizer. May cause sensitization by skin contact.

**Hazardous Combustion Products** Carbon oxides.

**Explosion Data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** 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.

**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**

**Advice on safe handling** 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

#### Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Limits

| Chemical name  | ACGIH TLV  | OSHA PEL  | NIOSH IDLH  |  |
|--|--|---|---|--|
| Copper<br>7440-50-8  | TWA: 0.2 mg/m <sup>3</sup> fume  | TWA: 0.1 mg/m <sup>3</sup> fume<br>TWA: 1 mg/m <sup>3</sup> dust and mist<br>(vacated) TWA: 0.1 mg/m <sup>3</sup> Cu<br>dust, fume, mist  | IDLH: 100 mg/m <sup>3</sup> dust, fume<br>and mist<br>TWA: 1 mg/m <sup>3</sup> dust and mist<br>TWA: 0.1 mg/m <sup>3</sup> fume                                 |  |
| Lithium nickel oxide (LiNiO <sub>2</sub> )<br>12031-65-1                     | TWA: 0.2 mg/m <sup>3</sup> Ni inhalable<br>particulate matter  | TWA: 1 mg/m <sup>3</sup> Ni<br>(vacated) TWA: 1 mg/m <sup>3</sup> Ni  | IDLH: 10 mg/m <sup>3</sup> Ni<br>TWA: 0.015 mg/m <sup>3</sup> except<br>Nickel carbonyl Ni  |  |
| Aluminum<br>7429-90-5  | TWA: 1 mg/m <sup>3</sup> respirable<br>particulate matter  | TWA: 15 mg/m <sup>3</sup> total dust<br>TWA: 5 mg/m <sup>3</sup> respirable<br>fraction<br>(vacated) TWA: 15 mg/m <sup>3</sup> total<br>dust<br>(vacated) TWA: 5 mg/m <sup>3</sup><br>respirable fraction | TWA: 10 mg/m <sup>3</sup> total dust<br>TWA: 5 mg/m <sup>3</sup> respirable dust  |  |
| Nickel<br>7440-02-0  | TWA: 1.5 mg/m <sup>3</sup>   | TWA: 1 mg/m <sup>3</sup><br>(vacated) TWA: 1 mg/m <sup>3</sup>  | IDLH: 10 mg/m <sup>3</sup><br>TWA: 0.015 mg/m <sup>3</sup>  |  |
| Lithium manganese oxide<br>(LiMn <sub>2</sub> O <sub>4</sub> )<br>12057-17-9 | TWA: 0.2 mg/m <sup>3</sup> Mn  | (vacated) Ceiling: 5 mg/m <sup>3</sup><br>Ceiling: 5 mg/m <sup>3</sup> Mn   | IDLH: 500 mg/m <sup>3</sup> Mn<br>TWA: 1 mg/m <sup>3</sup> Mn<br>STEL: 3 mg/m <sup>3</sup> Mn   |  |
| Manganese<br>7439-96-5   | TWA: 0.02 mg/m <sup>3</sup> respirable<br>particulate matter<br>TWA: 0.1 mg/m <sup>3</sup> inhalable<br>particulate matter | (vacated) TWA: 1 mg/m <sup>3</sup> fume<br>(vacated) STEL: 3 mg/m <sup>3</sup> fume<br>(vacated) Ceiling: 5 mg/m <sup>3</sup><br>Ceiling: 5 mg/m <sup>3</sup> fume  | IDLH: 500 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup> fume<br>STEL: 3 mg/m <sup>3</sup>   |  |
| Lithium Cobalt Oxide (CoLiO <sub>2</sub> )<br>12190-79-3                     | TWA: 0.02 mg/m <sup>3</sup>  | -   |   |  |
| PVC (Chloroethylene, polymer)<br>9002-86-2                                   | TWA: 1 mg/m <sup>3</sup> respirable<br>particulate matter  | -   |   |  |
| Phosphate(1-), hexafluoro-,<br>lithium<br>21324-40-3                         | TWA: 2.5 mg/m <sup>3</sup> F   | TWA: 2.5 mg/m <sup>3</sup> F<br>(vacated) TWA: 2.5 mg/m <sup>3</sup>  | IDLH: 250 mg/m <sup>3</sup> F   |  |
| Carbon black<br>1333-86-4  | TWA: 3 mg/m <sup>3</sup> inhalable<br>particulate matter   | TWA: 3.5 mg/m <sup>3</sup><br>(vacated) TWA: 3.5 mg/m <sup>3</sup>  | IDLH: 1750 mg/m <sup>3</sup><br>TWA: 3.5 mg/m <sup>3</sup><br>TWA: 0.1 mg/m <sup>3</sup> Carbon black<br>in presence of Polycyclic<br>aromatic hydrocarbons PAH |  |
| Silver<br>7440-22-4  | TWA: 0.1 mg/m <sup>3</sup> dust and fume   | TWA: 0.01 mg/m <sup>3</sup><br>(vacated) TWA: 0.01 mg/m <sup>3</sup>  | IDLH: 10 mg/m <sup>3</sup> dust<br>TWA: 0.01 mg/m <sup>3</sup> dust<br>TWA: 0.9 µg/m <sup>3</sup> nanoparticles<br><100 nm                                      |  |
| Chemical name  | Alberta  | British Columbia  | Ontario TWAEV   | Quebec   |
| Copper<br>7440-50-8  | TWA: 0.2 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup>   | TWA: 1 mg/m <sup>3</sup><br>TWA: 0.2 mg/m <sup>3</sup>  | TWA: 0.2 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup>  | TWA: 0.2 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup> |

|  |                             |   |   |                             |
|--|-----------------------------|---|---|-----------------------------|
| Lithium nickel oxide<br>(LiNiO <sub>2</sub> )<br>12031-65-1                  | TWA: 0.2 mg/m <sup>3</sup>  | TWA: 0.05 mg/m <sup>3</sup>                                 | TWA: 0.2 mg/m <sup>3</sup>                                | TWA: 1 mg/m <sup>3</sup>    |
| Aluminum<br>7429-90-5  | TWA: 10 mg/m <sup>3</sup>   | TWA: 1.0 mg/m <sup>3</sup>                                  | TWA: 1 mg/m <sup>3</sup>                                  | TWA: 10 mg/m <sup>3</sup>   |
| Nickel<br>7440-02-0  | TWA: 1.5 mg/m <sup>3</sup>  | TWA: 0.05 mg/m <sup>3</sup>                                 | TWA: 1 mg/m <sup>3</sup>                                  | TWA: 1 mg/m <sup>3</sup>    |
| Lithium manganese oxide<br>(LiMn <sub>2</sub> O <sub>4</sub> )<br>12057-17-9 | TWA: 0.2 mg/m <sup>3</sup>  | TWA: 0.2 mg/m <sup>3</sup><br>TWA: 0.02 mg/m <sup>3</sup>   | TWA: 0.02 mg/m <sup>3</sup><br>TWA: 0.1 mg/m <sup>3</sup> | TWA: 0.2 mg/m <sup>3</sup>  |
| Manganese<br>7439-96-5   | TWA: 0.2 mg/m <sup>3</sup>  | TWA: 0.2 mg/m <sup>3</sup><br>TWA: 0.02 mg/m <sup>3</sup>   | TWA: 0.2 mg/m <sup>3</sup>                                | TWA: 0.2 mg/m <sup>3</sup>  |
| Lithium Cobalt Oxide<br>(CoLiO <sub>2</sub> )<br>12190-79-3                  | TWA: 0.02 mg/m <sup>3</sup> | TWA: 0.02 mg/m <sup>3</sup>                                 | TWA: 0.02 mg/m <sup>3</sup>                               | TWA: 0.02 mg/m <sup>3</sup> |
| PVC (Chloroethylene,<br>polymer)<br>9002-86-2                                |                             | TWA: 1 mg/m <sup>3</sup>                                    | TWA: 1 mg/m <sup>3</sup>                                  |                             |
| Phosphate(1-),<br>hexafluoro-, lithium<br>21324-40-3                         | TWA: 2.5 mg/m <sup>3</sup>  | TWA: 2.5 mg/m <sup>3</sup>                                  | TWA: 2.5 mg/m <sup>3</sup>                                | TWA: 2.5 mg/m <sup>3</sup>  |
| Carbon black<br>1333-86-4  | TWA: 3.5 mg/m <sup>3</sup>  | TWA: 3 mg/m <sup>3</sup>                                    | TWA: 3 mg/m <sup>3</sup>                                  | TWA: 3.5 mg/m <sup>3</sup>  |
| Silver<br>7440-22-4  | TWA: 0.1 mg/m <sup>3</sup>  | TWA: 0.01 mg/m <sup>3</sup><br>STEL: 0.03 mg/m <sup>3</sup> | TWA: 0.1 mg/m <sup>3</sup>                                | TWA: 0.1 mg/m <sup>3</sup>  |

**Other Exposure Guidelines** 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** Neutral  
**Color** No information available  
**Odor Threshold** Not applicable



| <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                           |                          | None known            |
| Upper flammability limit                            | No data available        |                       |
| Lower flammability limit                            | No data available        |                       |
| Vapor pressure                                      | No data available        | None known            |
| Vapor density                                       | No data available        | None known            |
| Relative density                                    | No data available        | None known            |
| Water Solubility                                    | Insoluble in water       |                       |
| Solubility(ies)                                     | No data available        | None known            |
| Partition coefficient: n-octanol/water <sup>0</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            |
| <b>Other Information</b>                            |                          |                       |
| 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

|                                    |  |
|------------------------------------|--|
| Reactivity                         | No information available.                            |
| Chemical stability                 | Stable under normal conditions.                      |
| Possibility of Hazardous Reactions | None under normal processing.                        |
| Hazardous Polymerization           | Hazardous polymerization does not occur.             |
| Conditions to avoid                | None known based on information supplied.            |
| Incompatible materials             | Strong acids. Strong bases. Strong oxidizing agents. |
| Hazardous Decomposition Products   | 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<br>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. Harmful if swallowed. (based on components).  |

### Information on toxicological effects

**Symptoms** Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.

### Numerical measures of toxicity

#### Acute Toxicity

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

**ATEmix (oral)** 1,315.70 mg/kg

**Unknown acute toxicity** 94.42 % of the mixture consists of ingredient(s) of unknown toxicity

62.8 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

93.35 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

94.42 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

94.42 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

94.42 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

### Component Information

| Chemical name                 | Oral LD50             | Dermal LD50          | Inhalation LC50         |
|-------------------------------|-----------------------|----------------------|-------------------------|
| Iron                          | = 30 g/kg ( Rat )     | -                    | -                       |
| Nickel                        | > 9000 mg/kg ( Rat )  | -                    | > 10.2 mg/L ( Rat ) 1 h |
| Manganese                     | = 9 g/kg ( Rat )      | -                    | -                       |
| Lithium Cobalt Oxide (CoLiO2) | > 5000 mg/kg ( Rat )  | > 2000 mg/kg ( Rat ) | > 5.05 mg/L ( Rat ) 4 h |
| Carbon black                  | > 15400 mg/kg ( Rat ) | > 3 g/kg ( Rabbit )  | -                       |
| Silver                        | > 5000 mg/kg ( Rat )  | > 2000 mg/kg ( Rat ) | -                       |

### 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 |
|-----------------------|-------|---------|-------|------|
| Nylon-6<br>25038-54-4 | -     | Group 3 | -     | -    |
| Lithium nickel oxide  | A1    | Group 1 | Known | X    |



|   |    |          |                        |   |
|---|----|----------|------------------------|---|
| (LiNiO <sub>2</sub> )<br>12031-65-1                         |    |          |                        |   |
| Nickel<br>7440-02-0   | -  | Group 2B | Reasonably Anticipated | X |
| Lithium Cobalt Oxide<br>(CoLiO <sub>2</sub> )<br>12190-79-3 | A3 | Group 2B | Reasonably Anticipated | X |
| PVC (Chloroethylene,<br>polymer)<br>9002-86-2               | -  | Group 3  | -                      | - |
| Carbon black<br>1333-86-4                                   | A3 | Group 2B | -                      | X |

**Legend**

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

A1 - Known Human Carcinogen

A3 - Animal Carcinogen

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

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

**NTP (National Toxicology Program)**

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

**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.

**Aspiration hazard** No information available.

**12. ECOLOGICAL INFORMATION**

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

| Chemical name | Toxicity to Algae   | Toxicity to Fish  | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---------------|---|---|----------------------------|----------------------------|
| Iron          | -   | 96h LC50: = 13.6 mg/L (Morone saxatilis)  | -                          | -                          |
| Copper        | 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata) 96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) | 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: < 0.3 mg/L (Pimephales) | -                          | 48h EC50: = 0.03 mg/L      |



|              |  | promelas)   |   |   |
|--------------|--|---|---|---|
| Nickel       | 96h EC50: 0.174 - 0.311 mg/L<br>(Pseudokirchneriella subcapitata) 72h EC50: = 0.18 mg/L<br>(Pseudokirchneriella subcapitata) | 96h LC50: = 1.3 mg/L (Cyprinus carpio) 96h LC50: = 10.4 mg/L (Cyprinus carpio) 96h LC50: > 100 mg/L (Brachydanio rerio)                           | - | 48h EC50: = 1 mg/L 48h EC50: > 100 mg/L |
| Manganese    | -  | 96h LC50: > 3.6 mg/L (Oncorhynchus mykiss)  | - | -                                       |
| Carbon black | -  | -   | - | 24h EC50: > 5600 mg/L                   |
| Silver       | -  | 96h LC50: = 0.0062 mg/L (Oncorhynchus mykiss) 96h LC50: 0.00155 - 0.00293 mg/L (Pimephales promelas) 96h LC50: = 0.064 mg/L (Lepomis macrochirus) | - | 48h EC50: = 0.00024 mg/L                |

**Persistence and Degradability** No information available.

**Bioaccumulation** There is no data for this product.

**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.

**US EPA Waste Number** D011

**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       |
|--|----------------------------------|
| Copper<br>7440-50-8                                      | Toxic                            |
| Aluminum<br>7429-90-5                                    | Ignitable powder                 |
| Nickel<br>7440-02-0                                      | Toxic powder<br>Ignitable powder |
| Manganese<br>7439-96-5                                   | Ignitable powder                 |
| Lithium Cobalt Oxide (CoLiO <sub>2</sub> )<br>12190-79-3 | Toxic                            |
| Silver<br>7440-22-4                                      | Toxic                            |

## 14. TRANSPORT INFORMATION

|  |   |
|--|---|
| <b>Note:</b>                           | 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)<br>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" |
| <b>DOT</b>                             | NOT REGULATED   |
| <b>Proper Shipping Name</b>            | NON-REGULATED   |
| <b>Hazard Class</b>                    | N/A   |
| <b>Emergency Response Guide Number</b> | 147   |
| <b>TDG</b>                             | Not regulated   |
| <b>MEX</b>                             | Not regulated   |
| <b>ICAO</b>                            | Not regulated   |
| <b>IATA</b>                            | Not regulated   |
| <b>Proper Shipping Name</b>            | NON REGULATED   |
| <b>Hazard Class</b>                    | N/A   |
| <b>ERG Code</b>                        | 9F  |
| <b>IMDG/IMO</b>                        | Not regulated   |
| <b>Hazard Class</b>                    | N/A   |
| <b>EmS-No.</b>                         | F-A, S-I  |
| <b>RID</b>                             | Not regulated   |
| <b>ADR</b>                             | Not regulated   |
| <b>Tunnel restriction code</b>         | (E)   |
| <b>ADN</b>                             | Not regulated   |

## 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.

|                      |   |
|----------------------|---|
| <b>DSL/NDSL</b>      | Contact supplier for inventory compliance status. |
| <b>EINECS/ELINCS</b> | Contact supplier for inventory compliance status. |
| <b>ENCS</b>          | Contact supplier for inventory compliance status. |
| <b>KECL</b>          | Contact supplier for inventory compliance status. |
| <b>PICCS</b>         | Contact supplier for inventory compliance status. |
| <b>AICS</b>          | Contact supplier for inventory compliance status. |

**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**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 % |
|--|------------|----------|-------------------------------|
| Copper - 7440-50-8   | 7440-50-8  | 9.83     | 1.0                           |
| Lithium nickel oxide (LiNiO <sub>2</sub> ) - 12031-65-1                  | 12031-65-1 | 4.7      | 0.1                           |
| Aluminum - 7429-90-5   | 7429-90-5  | 4.15     | 1.0                           |
| Nickel - 7440-02-0   | 7440-02-0  | 3.65     | 0.1                           |
| Lithium manganese oxide (LiMn <sub>2</sub> O <sub>4</sub> ) - 12057-17-9 | 12057-17-9 | 2.82     | 1.0                           |
| Manganese - 7439-96-5  | 7439-96-5  | 2.45     | 1.0                           |
| Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) - 12190-79-3                  | 12190-79-3 | 1.88     | 0.1                           |
| Silver - 7440-22-4   | 7440-22-4  | 0.14     | 1.0                           |

**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 Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---|-----------------------------|------------------------|---------------------------|----------------------------|
| Copper<br>7440-50-8   |                             | X                      | X                         |                            |
| Lithium nickel oxide<br>(LiNiO <sub>2</sub> )<br>12031-65-1 |                             | X                      |                           |                            |
| Nickel<br>7440-02-0   |                             | X                      | X                         |                            |
| Silver<br>7440-22-4   |                             | 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 | RQ |
|---------------|--------------------------|---------------------|----|
|---------------|--------------------------|---------------------|----|



|                     |         | Substances RQs |  |
|---------------------|---------|----------------|--|
| Copper<br>7440-50-8 | 5000 lb |                | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |
| Nickel<br>7440-02-0 | 100 lb  |                | RQ 100 lb final RQ<br>RQ 45.4 kg final RQ  |
| Silver<br>7440-22-4 | 1000 lb |                | RQ 1000 lb final RQ<br>RQ 454 kg final RQ  |

### US State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals.

| Chemical name   | California Proposition 65        |
|---|----------------------------------|
| Lithium nickel oxide (LiNiO <sub>2</sub> ) - 12031-65-1 | carcinogen, 5/7/2004             |
| Nickel - 7440-02-0                                      | carcinogen, 10/1/1989 (metallic) |
| Carbon black - 1333-86-4                                | Carcinogen                       |
| Lithium carbonate - 554-13-2                            | Developmental                    |
| Titanium dioxide - 13463-67-7                           | Carcinogen                       |

#### 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 |
|--|------------|---------------|--------------|--------------|----------|
| Copper<br>7440-50-8  | X          | X             | X            | X            | X        |
| Lithium nickel oxide<br>(LiNiO <sub>2</sub> )<br>12031-65-1                  | X          |               | X            | X            | X        |
| Aluminum<br>7429-90-5  | X          | X             | X            | X            |          |
| Nickel<br>7440-02-0  | X          | X             | X            | X            | X        |
| Lithium manganese oxide<br>(LiMn <sub>2</sub> O <sub>4</sub> )<br>12057-17-9 | X          |               | X            | X            | X        |
| Manganese<br>7439-96-5   | X          | X             | X            | X            | X        |
| Lithium Cobalt Oxide<br>(CoLiO <sub>2</sub> )<br>12190-79-3                  | X          |               | X            | X            | X        |
| PVC (Chloroethylene,<br>polymer)<br>9002-86-2                                | X          |               |              |              |          |
| Phosphate(1-),<br>hexafluoro-, lithium<br>21324-40-3                         | X          |               |              |              |          |
| Carbon black<br>1333-86-4  | X          | X             | X            |              | X        |
| Silver<br>7440-22-4  | X          | X             | X            | X            |          |

### 16. OTHER INFORMATION

|             |                  |                |                    |                                       |
|-------------|------------------|----------------|--------------------|---------------------------------------|
| <u>NFPA</u> | Health hazards 1 | Flammability 0 | Instability 0      | Physical and Chemical<br>Properties - |
| <u>HMIS</u> | 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**