# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

**Issuing Date** 06-Jun-2025 **Revision date** 06-Jun-2025 **Revision Number** 1

## 1. Identification

**Product identifier**

**Product Name** Li-ion Battery M070-17

**Other means of identification**

**Product Code(s)** 1857506

**Synonyms** None

**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 Name** Spark Connect Inc

**Supplier Address**
171 Tradition Trail, Suite 101-103
Holly Springs
NC
27540
US

**Emergency telephone number**

**Supplier Phone Number** Phone:9192683898

**24 Hour Emergency Phone Number** 9727959368

**Emergency Telephone** No information available

## 2. Hazard(s) identification

**Classification of the substance or mixture**

| | |
|---|---|
| Acute toxicity - Dermal | Category 3 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |
| Carcinogenicity | Category 1B |
| Specific target organ toxicity (repeated exposure) | Category 1 |

**Label elements**

**Danger**

**Hazard statements**
Toxic in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
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 and face protection.
Wash face, hands and any exposed skin thoroughly after handling.
Do not breathe dust.
Do not eat, drink or smoke when using this product.
**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 and attention.
**Skin**
IF ON SKIN: Wash with plenty of water and soap.
Call a POISON CENTER or doctor if you feel unwell.
Take off immediately all contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice and attention.
Take off contaminated clothing and wash it before reuse.

**Precautionary Statements - Storage**
Store locked up.
**Precautionary Statements - Disposal**
Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

**Unknown acute toxicity**
95.55 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**
No information available.

**Other information**
Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. This is a battery. In case of rupture: the above hazards exist.

## 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

| Chemical name | CAS No. | Weight-% | **Hazardous Material** | **Date HMIRA filed and** |
|---|---|---|---|---|

| | | | Information Review Act registry number (HMIRA registry #) | date exemption granted (if applicable) |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2) | 12190-79-3 | 35.05 | - | - |
| Graphite | 7782-42-5 | 15.98 | - | - |
| 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene | 9011-17-0 | 9.87 | - | - |
| Aluminum | 7429-90-5 | 9.38 | - | - |
| Copper | 7440-50-8 | 8.39 | - | - |
| Ethylene carbonate | 96-49-1 | 6.34 | - | - |
| Phosphate(1-), hexafluoro-, lithium | 21324-40-3 | 2.95 | - | - |
| Propylene carbonate | 108-32-7 | 1.11 | - | - |
| Ci 77266 | 1333-86-4 | 0.79 | - | - |

## 4. First-aid measures

**Description of first aid measures**

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

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

**Eye contact** Get immediate medical attention. 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. Do not rub affected area.

**Skin contact** Get immediate medical attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**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. Wear personal protective clothing (see section 8). Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing.

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

**Symptoms** May cause redness and tearing of the eyes. Burning sensation.

**Effects of Exposure** May cause cancer. Causes damage to organs through prolonged or repeated exposure.

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

**Note to physicians** Treat symptomatically.

## 5. Fire-fighting measures

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

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

**Specific hazards arising from the** No information available.

**chemical**

**Explosion data**

**Sensitivity to mechanical impact** None.
**Sensitivity to static discharge** None.

**Special protective equipment and precautions 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.

**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.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. Handling and storage

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when using this product. In case of rupture:

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

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

## 8. Exposure controls/personal protection

**Control Parameters**

**Exposure Limits**

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|---|---|---|---|
| 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 | IDLH: 1250 mg/m³<br>TWA: 2.5 mg/m³ respirable dust |

| | | | |
|---|---|---|---|
| | | 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 | |
| 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 |
| 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 | TWA: 1 mg/m³; dust and mist<br>TWA: 0.1 mg/m³; fume<br>IDLH: 100 mg/m³ dust, fume and mist |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | TWA: 2.5 mg/m³ F | TWA: 2.5 mg/m³ F<br>(vacated) TWA: 2.5 mg/m³ | IDLH: 250 mg/m³ F |
| Ci 77266<br>1333-86-4 | TWA: 3 mg/m³ inhalable particulate matter | TWA: 3.5 mg/m³<br>(vacated) TWA: 3.5 mg/m³ | TWA: 3.5 mg/m³;<br>TWA: 0.1 mg/m³; Carbon black in presence of Polycyclic aromatic hydrocarbons PAH<br>IDLH: 1750 mg/m³ |

| Chemical name | Alberta | British Columbia | Ontario | Quebec |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | TWA: 0.02 mg/m³; | TWA: 0.02 mg/m³; inhalable<br>DS<br>RS | TWA: 0.02 mg/m³; | TWAEV: 0.02 mg/m³; inhalable aerosol fraction |
| Graphite<br>7782-42-5 | TWA: 2 mg/m³; respirable | TWA: 2 mg/m³; respirable | TWA: 2 mg/m³; respirable particulate matter | TWAEV: 2 mg/m³; respirable dust |
| Aluminum<br>7429-90-5 | TWA: 10 mg/m³; dust | TWA: 1.0 mg/m³; respirable | TWA: 1 mg/m³; respirable particulate matter | TWAEV: 10 mg/m³; |
| Copper<br>7440-50-8 | TWA: 0.2 mg/m³; fume<br>TWA: 1 mg/m³; dust and mist | TWA: 1 mg/m³; dust and mist<br>TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume<br>TWA: 1 mg/m³; dust and mist | TWAEV: 0.2 mg/m³; fume<br>TWAEV: 1 mg/m³; dust and mist |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWAEV: 2.5 mg/m³; |
| Ci 77266<br>1333-86-4 | TWA: 3.5 mg/m³; | TWA: 3 mg/m³; inhalable | TWA: 3 mg/m³; inhalable particulate matter | TWAEV: 3 mg/m³; inhalable dust |

| Chemical name | Manitoba | New Brunswick | Newfoundland and Labrador | Nova Scotia |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2) | TWA: 0.02 mg/m³; inhalable particulate matter<br>DS<br>RS | TWA: 0.02 mg/m³; | TWA: 0.02 mg/m³; inhalable particulate matter<br>DS<br>RS | TWA: 0.02 mg/m³; inhalable particulate matter<br>DS<br>RS |
| Graphite | TWA: 2 mg/m³; | TWA: 2 mg/m³; | TWA: 2 mg/m³; | TWA: 2 mg/m³; |

| Chemical name | Manitoba | New Brunswick | Newfoundland and Labrador | Nova Scotia |
|---|---|---|---|---|
| | respirable particulate matter | respirable fraction | respirable particulate matter | respirable particulate matter |
| Aluminum | TWA: 1 mg/m³; respirable particulate matter | TWA: 1 mg/m³; respirable fraction | TWA: 1 mg/m³; respirable particulate matter | TWA: 1 mg/m³; respirable particulate matter |
| Copper | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume |
| Phosphate(1-), hexafluoro-, lithium | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; |
| Ci 77266 | TWA: 3 mg/m³; inhalable particulate matter | TWA: 3 mg/m³; inhalable fraction | TWA: 3 mg/m³; inhalable particulate matter | TWA: 3 mg/m³; inhalable particulate matter |

| Chemical name | Nunavut | Prince Edward Island | Saskatchewan | Yukon |
|---|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2) | TWA: 0.02 mg/m³; STEL: 0.06 mg/m³; Designated substance | TWA: 0.02 mg/m³; inhalable particulate matter | TWA: 0.02 mg/m³; STEL: 0.06 mg/m³; Designated Chemical Substance | - |
| Graphite | TWA: 2 mg/m³; respirable fraction STEL: 4 mg/m³; respirable fraction | TWA: 2 mg/m³; respirable particulate matter | TWA: 2 mg/m³; respirable fraction STEL: 4 mg/m³; respirable fraction | TWA: 20 mppcf; TWA: 30 mppcf; TWA: 10 mg/m³; |
| Aluminum | TWA: 10 mg/m³; dust STEL: 20 mg/m³; dust | TWA: 1 mg/m³; respirable particulate matter | TWA: 10 mg/m³; dust STEL: 20 mg/m³; dust | - |
| Copper | TWA: 0.2 mg/m³; fume TWA: 1 mg/m³; dust and mist STEL: 3 mg/m³; dust and mist STEL: 0.6 mg/m³; fume | TWA: 0.2 mg/m³; fume | TWA: 0.2 mg/m³; fume TWA: 1 mg/m³; dust and mist STEL: 0.6 mg/m³; fume STEL: 3 mg/m³; dust and mist | TWA: 0.2 mg/m³; fume TWA: 1 mg/m³; dust and mist STEL: 0.2 mg/m³; fume STEL: 2 mg/m³; dust and mist |
| Phosphate(1-), hexafluoro-, lithium | - | TWA: 2.5 mg/m³; | TWA: 2.5 mg/m³; STEL: 5 mg/m³; | TWA: 2.5 mg/m³; STEL: 2.5 mg/m³; |
| Ci 77266 | TWA: 3.5 mg/m³; STEL: 7 mg/m³; | TWA: 3 mg/m³; inhalable particulate matter | TWA: 3.5 mg/m³; STEL: 7 mg/m³; | TWA: 3.5 mg/m³; STEL: 7 mg/m³; |

**Note** See section 16 for terms and abbreviations.

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

**Biological occupational exposure limits**

| Chemical name | ACGIH |
|---|---|
| Lithium Cobalt Oxide (CoLiO2) 12190-79-3 | 15 µg/L - urine (Cobalt) - end of shift at end of workweek |
| Phosphate(1-), hexafluoro-, lithium 21324-40-3 | 2 mg/L - urine (Fluoride) - prior to shift 3 mg/L - urine (Fluoride) - end of shift |

**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. Chemical resistant apron. |
| **Respiratory protection** | Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. |

## 9. Physical and chemical properties

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Appearance** | Black |
| **Physical state** | Solid |
| **Color** | No information available |
| **Odor (includes odor threshold)** | Odorless |
| **Odor threshold** | No data available |

| **Property** | | **Values** | **Remarks • Method** |
|---|---|---|---|
| **Melting point / freezing point** | No data available | | None known |
| **Boiling point (or initial boiling point or boiling range)** | No data available | | None known |
| **Flammability** | No data available | | None known |
| **Flammability Limit in Air** | | | None known |
| **Upper flammability or explosive limits** | No data available | | |
| **Lower flammability or explosive limits** | No data available | | |
| **Flash point** | No data available | | None known |
| **Autoignition temperature** | No data available | | None known |
| **Decomposition temperature** | No data available | | None known |
| **SADT (°C)** | No data available | | None known |
| **pH** | No data available | | None known |
| **pH (as aqueous solution)** | No data available | | None known |
| **Kinematic viscosity** | No data available | | None known |
| **Dynamic viscosity** | No data available | | None known |
| **Solubility** | No data available | | None known |
| **Water solubility** | Insoluble in water | | None known |
| **Partition coefficient n-octanol/water (log value)** | No data available | | None known |
| **Vapor pressure (includes evaporation rate)** | No data available | | None known |
| **Evaporation rate** | No data available | | None known |
| **Density and/or relative density** | No data available | | None known |
| **Bulk density** | No data available | | |
| **Liquid Density** | No data available | | |
| **Relative vapor density** | No data available | | None known |
| **Particle characteristics** | | | None known |
| **Particle Size** | No data available | | |
| **Particle Size Distribution** | No data available | | |

**Other information**

| | |
|---|---|
| **Miscible** | No |
| Heat of combustion | 3.91141 |

## 10. Stability and reactivity

**Reactivity** No information available.

**Chemical stability** Stable under normal conditions.

**Possibility of hazardous reactions** None under normal processing.

**Conditions to avoid** None known based on information supplied.

**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.

**Hazardous decomposition products** None known based on information supplied.

## 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. May cause irritation of respiratory tract.

**Eye contact** Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.

**Skin contact** Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Toxic in contact with skin.

**Ingestion** 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**

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

**Acute toxicity** Toxic in contact with skin.

**Numerical measures of toxicity**

The following ATE values have been calculated for the mixture

| | |
|---|---|
| ATEmix (oral) | 7,429.20 mg/kg |
| ATEmix (dermal) | 452.50 mg/kg |
| ATEmix (inhalation-gas) | 99,999.00 ppm |
| ATEmix (inhalation-vapor) | 99,999.00 mg/l |
| ATEmix (inhalation-dust/mist) | 99,999.00 mg/l |

**Unknown acute toxicity**

95.55 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rat ) | > 5.05 mg/L ( Rat ) 4 h |
| Graphite<br>7782-42-5 | - | - | > 2000 mg/m³ ( Rat ) 4 h |
| Aluminum<br>7429-90-5 | - | - | > 0.888 mg/L ( Rat ) 4 h |
| Copper<br>7440-50-8 | - | - | > 5.11 mg/L ( Rat ) 4 h |
| Ethylene carbonate | = 10 g/kg ( Rat ) | > 26420 mg/kg ( Rabbit ) | > 730 mg/m³ ( Rat ) 8 h |

| | | | |
|---|---|---|---|
| 96-49-1 | | | |
| Propylene carbonate<br>108-32-7 | = 29000 mg/kg ( Rat ) | > 3000 mg/kg ( Rabbit ) | - |
| Ci 77266<br>1333-86-4 | > 10000 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 4.6 mg/m$^3$ ( Rat ) 4 h |

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

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** 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 (CoLiO2)<br>12190-79-3 | A3<br>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans | Group 2B | Reasonably Anticipated | X |
| Aluminum<br>7429-90-5 | A4 - Not Classifiable as a Human Carcinogen | - | - | - |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | A4 - Not Classifiable as a Human Carcinogen | - | - | - |
| Ci 77266<br>1333-86-4 | A3<br>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans | Group 2B | - | X |

**Legend**

**ACGIH (American Conference of Governmental Industrial Hygienists)**
A3 - Animal Carcinogen
A4 - Not classifiable as a human carcinogen
**IARC (International Agency for Research on Cancer)**
Group 2B - Possibly carcinogenic to humans
**NTP (National Toxicology Program)**
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
**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. Toxic to aquatic life with long lasting effects.

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---|---|---|---|---|
| Graphite<br>7782-42-5 | - | 96h LC50: > 100 mg/L (Danio rerio) | - | - |
| Copper<br>7440-50-8 | 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)<br>96h EC50: 0.031 - 0.054 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: = 0.2 mg/L (Pimephales promelas)<br>96h LC50: = 0.052 mg/L (Oncorhynchus mykiss)<br>96h LC50: = 1.25 mg/L (Lepomis macrochirus)<br>96h LC50: = 0.3 mg/L (Cyprinus carpio)<br>96h LC50: = 0.8 mg/L (Cyprinus carpio)<br>96h LC50: = 0.112 mg/L (Poecilia reticulata) | - | 48h EC50: = 0.03 mg/L (Daphnia magna) |
| Ethylene carbonate<br>96-49-1 | - | 96h LC50: > 100 mg/L (Oncorhynchus mykiss) | - | - |
| Propylene carbonate<br>108-32-7 | 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) |

**Persistence and degradability** No information available.

**Bioaccumulation**

**Component Information**

| Chemical name | Partition coefficient |
|---|---|
| Ethylene carbonate<br>96-49-1 | 0.11 |
| Propylene carbonate<br>108-32-7 | 0.48 |

**Other adverse effects** No information available.

## 13. Disposal considerations

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

## 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** NOT REGULATED

| | |
|---|---|
| **Hazard Class** | N/A |
| **DOT Marine Pollutant** | PP |
| **Marine pollutant** | Copper |
| **Emergency Response Guide Number** | 147 |

**TDG** Not applicable

**MEX** Not applicable

**ICAO (air)**

| | |
|---|---|
| **UN number or ID number** | UN3480 |
| **UN proper shipping name** | LITHIUM ION BATTERIES |
| **Transport hazard class(es)** | 9 |
| **Description** | UN3480, LITHIUM ION BATTERIES, 9 |
| **Special Provisions** | A88, A99, A154, A183, A201, A213 |

**IATA**

| | |
|---|---|
| **UN number or ID number** | UN3480 |
| **UN proper shipping name** | LITHIUM ION BATTERIES |
| **Transport hazard class(es)** | 9 |
| **Environmental hazards** | Yes |
| **ERG Code** | 12FZ |
| **Description** | UN3480, LITHIUM ION BATTERIES, 9 |

**IMDG** Not applicable

| | |
|---|---|
| **Transport hazard class(es)** | N/A |
| **Marine pollutant indicator** | NP F-A S-I |

## 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/NDSL** | Contact supplier for inventory compliance status. |
| **EINECS/ELINCS** | Contact supplier for inventory compliance status. |
| **ENCS** | Contact supplier for inventory compliance status. |
| **IECSC** | Contact supplier for inventory compliance status. |
| **KECI** | Contact supplier for inventory compliance status. |
| **PICCS** | Contact supplier for inventory compliance status. |
| **AIIC** | Contact supplier for inventory compliance status. |
| **NZIoC** | Contact supplier for inventory compliance status. |
| **TCSI** | 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
**IECSC** - China Inventory of Existing Chemical Substances
**KECL** - Korean Existing Chemicals Inventory
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AIIC** - Australian Inventory of Industrial Chemicals
**NZIoC** - New Zealand Inventory of Chemicals
**TCSI** - Taiwan Chemical Substance Inventory

**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 | SARA 313 - Threshold Values % |
|---|---|
| Lithium Cobalt Oxide (CoLiO2) - 12190-79-3 | 0.1 |
| Aluminum - 7429-90-5 | 1.0 |
| Copper - 7440-50-8 | 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.

**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 | - |

**CAA (Clean Air Act)**
This product contains the following substances which are regulated pollutants to the Clean Air Act (CAA).

| Chemical name | Hazardous air pollutants (HAPs) | Ozone-depleting substances (ODS) |
|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | Present | - |

**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 | Reportable Quantity (RQ) |
|---|---|---|---|
| Copper<br>7440-50-8 | 5000 lb | - | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |

**US State Regulations**

**California Proposition 65**
This product contains the following Proposition 65 chemicals:.

| Chemical name | California Proposition 65 |
|---|---|
| Ci 77266 - 1333-86-4 | Carcinogen |

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

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---|---|---|---|
| Lithium Cobalt Oxide (CoLiO2)<br>12190-79-3 | X | - | X |
| Graphite<br>7782-42-5 | X | X | X |
| Aluminum<br>7429-90-5 | X | X | X |
| Copper<br>7440-50-8 | X | X | X |
| Ethylene carbonate<br>96-49-1 | - | X | X |
| Dimethyl carbonate<br>616-38-6 | X | X | X |
| Phosphate(1-), hexafluoro-, lithium<br>21324-40-3 | X | - | - |
| Diethyl carbonate<br>105-58-8 | X | X | X |
| Ci 77266<br>1333-86-4 | X | X | X |

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

## 16. Other information

| | | | | |
|---|---|---|---|---|
| **NFPA** | **Health hazards** 1 | **Flammability** 0 | **Instability** 0 | **Special hazards** - |
| **HMIS** | **Health hazards** 0 | **Flammability** 0 | **Physical hazards** 0 | **Personal protection** X |

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**Legend**

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| ADN | Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe) |
| ADR | Agreement concerning the International Carriage of Dangerous Goods by Road (Europe) |
| AIIC | Australian Inventory of Industrial Chemicals |
| ATE | Acute Toxicity Estimate |
| ASTM | American Society for the Testing of Materials |

| | |
|---|---|
| bar | Biological Reference Values for Chemical Compounds in the Work Area |
| BAT | Biological tolerance values for occupational exposure |
| BEL | Biological exposure limits |
| bw | Body weight |
| Ceiling | Maximum limit value |
| CMR | Carcinogen, Mutagen or Reproductive Toxicant |
| DOT | Department of Transportation (United States) |
| DSL | Domestic Substances List (Canada) |
| EmS | Emergency Schedule |
| ENCS | Existing and New Chemical Substances (Japan) |
| EPA | Environmental Protection Agency |
| GHS | Globally Harmonized System |
| HMIS | Hazardous Materials Identification System |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IBC | International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk |
| ICAO | International Civil Aviation Organization |
| IECSC | Inventory of Existing Chemical Substances in China |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| ISO | International Organization for Standardization |
| KECI | Korean Existing Chemicals Inventory |
| LC50 | Lethal Concentration to 50% of a test population |
| LD50 | Lethal Dose to 50% of a test population (Median Lethal Dose) |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| NFPA | National Fire Protection Association |
| NIOSH | National Institute for Occupational Safety and Health |
| n.o.s. | Not Otherwise Specified |
| NOAEC | No Observed Adverse Effect Concentration |
| NOAEL | No Observed Adverse Effect Level |
| NOELR | No Observable Effect Loading Rate |
| NTP | National Toxicology Program (United States) |
| NZIoC | New Zealand Inventory of Chemicals |
| OECD | Organization for Economic Cooperation and Development |
| OEL | Occupational exposure limits |
| OSHA | Occupational Safety and Health Administration of the US Department of Labor |
| PBT | Persistent, Bioaccumulative and Toxic substance |
| PICCS | Philippines Inventory of Chemicals and Chemical Substances |
| PMT | Persistent, Mobile and Toxic |
| PPE | Personal protective equipment |
| QSAR | Quantitative Structure Activity Relationship |
| RID | Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe) |
| SADT | Self-Accelerating Decomposition Temperature |
| SAR | Structure-activity relationship |
| SARA | Superfund Amendments and Reauthorization Act |
| SDS | Safety Data Sheet |
| SL | Surface Limit |
| STEL | Short Term Exposure Limit |
| STOT RE | Specific target organ toxicity - Repeated exposure |
| STOT SE | Specific target organ toxicity - Single exposure |
| TCSI | Taiwan Chemical Substance Inventory |
| TDG | Transport of Dangerous Goods (Canada) |
| TSCA | Toxic Substances Control Act (United States) |
| TWA | Time-Weighted Average |
| UN | United Nations |
| VOC | Volatile organic compounds |
| vPvB | Very Persistent and Very Bioaccumulative |

| | |
|---|---|
| vPvM | Very Persistent and Very Mobile |
| As | Allergenic substance |
| DS | Dermal Sensitizer |
| Ot | Ototoxicant |
| pOt | Ototoxicant - potential to cause hearing disorders |
| PS | Photosensitizer |
| RS | Respiratory Sensitizer |
| S | Sensitizer |
| poS | Sensitizer - capable of causing occupational asthma |
| Sa | Simple asphyxiant |
| Sd | Skin designation |
| pSd | Skin designation - potential for cutaneous absorption |
| Sdv | Skin designation - vacated |
| Sk | Skin notation |
| dSk | Skin notation - danger of cutaneous absorption |
| pSk | Skin notation - potential for cutaneous absorption |

**Key literature references and sources for data used to compile the SDS**
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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**Issuing Date** 06-Jun-2025

**Revision date** 06-Jun-2025

**Revision Note** No information available.

**Disclaimer**

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**End of Safety Data Sheet**