

# 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 04-Sep-2025

Revision date 04-Sep-2025

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** AHB391323H Hard pack Li-ion Rechargeable battery by SYNergy

### Other means of identification

**Product Code(s)** 1872447

**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** SYNergy

### Supplier Address

6F-3, No.9, Prosperity 1st Road,  
Hsinchu Science Park  
HsinChu  
N/A  
300091  
TW

### Emergency telephone number

**Supplier Phone Number** Phone:3-5643700  
Fax:886-3-5646767

**24 Hour Emergency Phone Number** 886-911254622

**Emergency Telephone** No information available

## 2. Hazard(s) identification

### Classification of the substance or mixture

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 1

### Label elements



**Danger**

**Hazard statements**

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.  
Wash face, hands and any exposed skin thoroughly after handling.  
Contaminated work clothing should not be allowed out of the workplace.  
Do not breathe dust.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves.

**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.  
Take off contaminated clothing and wash it before reuse.  
If skin irritation or rash occurs: Get medical advice and attention.

**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.

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available.

**Other information**

May be harmful in contact with skin. 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 Information Review	Date HMIRA filed and date exemption
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			Act registry number (HMIRA registry #)	granted (if applicable)
Lithium Cobalt Oxide (CoLiO <sub>2</sub> )	12190-79-3	30.24	-	-
Carbon black	1333-86-4	17.48	-	-
Aluminum	7429-90-5	14.54	-	-
Copper	7440-50-8	8.65	-	-
Ethylene carbonate	96-49-1	3.06	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	2.2	-	-
Aluminum oxide	1344-28-1	1.48	-	-
Propylene carbonate	108-32-7	1.21	-	-
Nickel	7440-02-0	0.6	-	-
1,3-Propane sultone	1120-71-4	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. In case of rupture:
<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. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
<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>	Rinse mouth. 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. May cause redness and tearing of the eyes. Burning sensation.
<b>Effects of Exposure</b>	May cause cancer. Causes damage to organs through prolonged or repeated exposure.

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

<b>Note to physicians</b>	May cause sensitization in susceptible persons. Treat symptomatically.
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#### 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 chemical** Product is or contains a sensitizer. May cause sensitization by skin contact.

##### 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. 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.

**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** 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.

**General hygiene considerations** 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. 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.

## 8. Exposure controls/personal protection

### Control Parameters

#### Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) 12190-79-3	TWA: 0.02 mg/m <sup>3</sup>	-	-
Carbon black 1333-86-4	TWA: 3 mg/m <sup>3</sup> inhalable particulate matter	TWA: 3.5 mg/m <sup>3</sup> (vacated) TWA: 3.5 mg/m <sup>3</sup>	TWA: 3.5 mg/m <sup>3</sup> ; TWA: 0.1 mg/m <sup>3</sup> ; Carbon black in presence of Polycyclic aromatic hydrocarbons PAH

			IDLH: 1750 mg/m <sup>3</sup>
Aluminum 7429-90-5	TWA: 1 mg/m <sup>3</sup> respirable particulate matter	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 10 mg/m <sup>3</sup> ; total dust TWA: 5 mg/m <sup>3</sup> ; respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> fume	TWA: 0.1 mg/m <sup>3</sup> fume TWA: 1 mg/m <sup>3</sup> dust and mist (vacated) TWA: 0.1 mg/m <sup>3</sup> Cu dust, fume, mist	TWA: 1 mg/m <sup>3</sup> ; dust and mist TWA: 0.1 mg/m <sup>3</sup> ; fume IDLH: 100 mg/m <sup>3</sup> dust, fume and mist
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m <sup>3</sup> F	TWA: 2.5 mg/m <sup>3</sup> F (vacated) TWA: 2.5 mg/m <sup>3</sup>	IDLH: 250 mg/m <sup>3</sup> F
Aluminum oxide 1344-28-1	TWA: 1 mg/m <sup>3</sup> respirable particulate matter	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	-
Nickel 7440-02-0	TWA: 1.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> TWA: 0.015 mg/m <sup>3</sup>
1,3-Propane sultone 1120-71-4	Exposure by all routes should be carefully controlled to levels as low as possible	-	-

Chemical name	Alberta	British Columbia	Ontario	Quebec
Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) 12190-79-3	TWA: 0.02 mg/m <sup>3</sup> ;	TWA: 0.02 mg/m <sup>3</sup> ; inhalable DS RS	TWA: 0.02 mg/m <sup>3</sup> ;	TWAEV: 0.02 mg/m <sup>3</sup> ; inhalable aerosol fraction
Carbon black 1333-86-4	TWA: 3.5 mg/m <sup>3</sup> ;	TWA: 3 mg/m <sup>3</sup> ; inhalable	TWA: 3 mg/m <sup>3</sup> ; inhalable particulate matter	TWAEV: 3 mg/m <sup>3</sup> ; inhalable dust
Aluminum 7429-90-5	TWA: 10 mg/m <sup>3</sup> ; dust	TWA: 1.0 mg/m <sup>3</sup> ; respirable	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWAEV: 10 mg/m <sup>3</sup> ;
Copper 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> ; fume TWA: 1 mg/m <sup>3</sup> ; dust and mist	TWA: 1 mg/m <sup>3</sup> ; dust and mist TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume TWA: 1 mg/m <sup>3</sup> ; dust and mist	TWAEV: 0.2 mg/m <sup>3</sup> ; fume TWAEV: 1 mg/m <sup>3</sup> ; dust and mist
Phosphate(1-), hexafluoro-, lithium 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> ;	TWAEV: 2.5 mg/m <sup>3</sup> ;
Aluminum oxide 1344-28-1	TWA: 10 mg/m <sup>3</sup> ;	TWA: 1.0 mg/m <sup>3</sup> ; respirable	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWAEV: 10 mg/m <sup>3</sup> ; total dust
Nickel 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> ; inhalable fraction	TWAEV: 1.5 mg/m <sup>3</sup> ; inhalable dust
1,3-Propane sultone 1120-71-4	-	: ;	: ;	: ;

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Lithium Cobalt Oxide (CoLiO <sub>2</sub> )	TWA: 0.02 mg/m <sup>3</sup> ; inhalable particulate	TWA: 0.02 mg/m <sup>3</sup> ;	TWA: 0.02 mg/m <sup>3</sup> ; inhalable particulate	TWA: 0.02 mg/m <sup>3</sup> ; inhalable particulate

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
	matter DS RS		matter DS RS	matter DS RS
Carbon black	TWA: 3 mg/m <sup>3</sup> ; inhalable particulate matter	TWA: 3 mg/m <sup>3</sup> ; inhalable fraction	TWA: 3 mg/m <sup>3</sup> ; inhalable particulate matter	TWA: 3 mg/m <sup>3</sup> ; inhalable particulate matter
Aluminum	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWA: 1 mg/m <sup>3</sup> ; respirable fraction	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter
Copper	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume
Phosphate(1-), hexafluoro-, lithium	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> ;
Aluminum oxide	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWA: 1 mg/m <sup>3</sup> ; respirable fraction	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter
Nickel	TWA: 1.5 mg/m <sup>3</sup> ; inhalable particulate matter	TWA: 1.5 mg/m <sup>3</sup> ; inhalable fraction	TWA: 1.5 mg/m <sup>3</sup> ; inhalable particulate matter	TWA: 1.5 mg/m <sup>3</sup> ; inhalable particulate matter

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Lithium Cobalt Oxide (CoLiO <sub>2</sub> )	TWA: 0.02 mg/m <sup>3</sup> ; STEL: 0.06 mg/m <sup>3</sup> ; Designated substance	TWA: 0.02 mg/m <sup>3</sup> ; inhalable particulate matter	TWA: 0.02 mg/m <sup>3</sup> ; STEL: 0.06 mg/m <sup>3</sup> ; Designated Chemical Substance	-
Carbon black	TWA: 3.5 mg/m <sup>3</sup> ; STEL: 7 mg/m <sup>3</sup> ;	TWA: 3 mg/m <sup>3</sup> ; inhalable particulate matter	TWA: 3.5 mg/m <sup>3</sup> ; STEL: 7 mg/m <sup>3</sup> ;	TWA: 3.5 mg/m <sup>3</sup> ; STEL: 7 mg/m <sup>3</sup> ;
Aluminum	TWA: 10 mg/m <sup>3</sup> ; dust STEL: 20 mg/m <sup>3</sup> ; dust	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWA: 10 mg/m <sup>3</sup> ; dust STEL: 20 mg/m <sup>3</sup> ; dust	-
Copper	TWA: 0.2 mg/m <sup>3</sup> ; fume TWA: 1 mg/m <sup>3</sup> ; dust and mist STEL: 3 mg/m <sup>3</sup> ; dust and mist STEL: 0.6 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume TWA: 1 mg/m <sup>3</sup> ; dust and mist STEL: 0.6 mg/m <sup>3</sup> ; fume STEL: 3 mg/m <sup>3</sup> ; dust and mist	TWA: 0.2 mg/m <sup>3</sup> ; fume TWA: 1 mg/m <sup>3</sup> ; dust and mist STEL: 0.2 mg/m <sup>3</sup> ; fume STEL: 2 mg/m <sup>3</sup> ; dust and mist
Phosphate(1-), hexafluoro-, lithium	-	TWA: 2.5 mg/m <sup>3</sup> ;	TWA: 2.5 mg/m <sup>3</sup> ; STEL: 5 mg/m <sup>3</sup> ;	TWA: 2.5 mg/m <sup>3</sup> ; STEL: 2.5 mg/m <sup>3</sup> ;
Aluminum oxide	TWA: 10 mg/m <sup>3</sup> ; STEL: 20 mg/m <sup>3</sup> ;	TWA: 1 mg/m <sup>3</sup> ; respirable particulate matter	TWA: 10 mg/m <sup>3</sup> ; STEL: 20 mg/m <sup>3</sup> ;	TWA: 30 mppcf; TWA: 10 mg/m <sup>3</sup> ; STEL: 20 mg/m <sup>3</sup> ;
Nickel	TWA: 1.5 mg/m <sup>3</sup> ; inhalable fraction STEL: 3 mg/m <sup>3</sup> ; inhalable fraction Designated substance	TWA: 1.5 mg/m <sup>3</sup> ; inhalable particulate matter	TWA: 1.5 mg/m <sup>3</sup> ; inhalable fraction STEL: 3 mg/m <sup>3</sup> ; inhalable fraction Designated Chemical Substance	TWA: 1 mg/m <sup>3</sup> ; STEL: 3 mg/m <sup>3</sup> ;
1,3-Propane sultone	Designated substance	-	Designated Chemical Substance	-

**Note**

**Other information on limit values**

See section 16 for terms and abbreviations.

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 (CoLiO <sub>2</sub> ) 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
Nickel 7440-02-0	5 µg/L - urine (Nickel) - post-shift at end of workweek

**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**                      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 information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point (or initial boiling point or boiling range)</b>	No data available	None known
<b>Flammability</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Flash point</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>	No data available	None known
<b>SADT (°C)</b>	No data available	None known
<b>pH</b>	No data available	None known
<b>pH (as aqueous solution)</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b>Solubility</b>	No data available	None known

Water solubility	Insoluble in water	None known
Partition coefficient n-octanol/water (log value)	1	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	5.60447

**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. May cause sensitization by skin contact. Causes skin irritation. (based on components). Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
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	Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.
Acute toxicity	No information available.
Numerical measures of toxicity	

The following ATE values have been calculated for the mixture

ATEmix (oral)	14,392.20 mg/kg
ATEmix (dermal)	2,405.50 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

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	> 5000 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	> 5.05 mg/L ( Rat ) 4 h
Carbon black 1333-86-4	> 10000 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 4.6 mg/m <sup>3</sup> ( Rat ) 4 h
Aluminum 7429-90-5	-	-	> 0.888 mg/L ( Rat ) 4 h
Copper 7440-50-8	-	-	> 5.11 mg/L ( Rat ) 4 h
Ethylene carbonate 96-49-1	= 10 g/kg ( Rat )	> 26420 mg/kg ( Rabbit )	> 730 mg/m <sup>3</sup> ( Rat ) 8 h
Aluminum oxide 1344-28-1	> 15900 mg/kg ( Rat )	-	-
Propylene carbonate 108-32-7	= 29000 mg/kg ( Rat )	> 3000 mg/kg ( Rabbit )	-
Nickel 7440-02-0	> 9000 mg/kg ( Rat )	-	> 10.2 mg/L ( Rat ) 1 h
1,3-Propane sultone 1120-71-4	= 157 mg/kg ( Rat )	-	-

**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** May cause an allergic skin reaction.

**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) 12190-79-3	A3 A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans	Group 2B	Reasonably Anticipated	X
Carbon black 1333-86-4	A3 A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans	Group 2B	-	X
Aluminum 7429-90-5	A4 - Not Classifiable as a Human Carcinogen	-	-	-
Phosphate(1-), hexafluoro-,	A4 - Not Classifiable as	-	-	-

lithium 21324-40-3	a Human Carcinogen			
Aluminum oxide 1344-28-1	A4 - Not Classifiable as a Human Carcinogen	-	-	-
Nickel 7440-02-0	A5 - Not Suspected as a Human Carcinogen	Group 2B	Reasonably Anticipated	X
1,3-Propane sultone 1120-71-4	A3 A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans	Group 2A	Reasonably Anticipated	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 2A - Probably carcinogenic to humans

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
Copper 7440-50-8	72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata) 96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 0.112 mg/L (Poecilia reticulata)	-	48h EC50: = 0.03 mg/L (Daphnia magna)

Ethylene carbonate 96-49-1	-	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	-	-
Propylene carbonate 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)
Nickel 7440-02-0	72h EC50: = 0.18 mg/L (Pseudokirchneriella subcapitata) 96h EC50: 0.174 - 0.311 mg/L (Pseudokirchneriella subcapitata)	96h LC50: > 100 mg/L (Brachydanio rerio) 96h LC50: = 1.3 mg/L (Cyprinus carpio) 96h LC50: = 10.4 mg/L (Cyprinus carpio)	-	48h EC50: > 100 mg/L (Daphnia magna) 48h EC50: = 1 mg/L (Daphnia magna)

**Persistence and degradability** No information available.

#### Bioaccumulation

#### Component Information

Chemical name	Partition coefficient
Ethylene carbonate 96-49-1	0.11
Propylene carbonate 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"

<b>DOT</b>	NOT REGULATED
Hazard Class	N/A
Reportable quantity (lbs)	Nickel: RQ (lb)= 100.00, 1,3-Propane sultone: RQ (lb)= 10.00
Reportable quantity (lbs) (calculated)	Nickel: RQ (lb)= 16667.00, 1,3-Propane sultone: RQ (lb)= 2500.00
Reportable Quantity (RQ) Reportable quantity (kg) (calculated)	(Nickel: RQ (kg)= 45.40, 1,3-Propane sultone: RQ (kg)= 4.54) Nickel: RQ (kg)= 7566.67, 1,3-Propane sultone: RQ (kg)= 1135.00
DOT Marine Pollutant	PP
Marine pollutant	Copper
Emergency Response Guide Number	147

**TDG** Not applicable

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

<b>IATA</b>	
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
Transport hazard class(es)	N/A
Marine pollutant indicator	NP
EmS-No.	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
Aluminum oxide - 1344-28-1	1.0
Nickel - 7440-02-0	0.1
1,3-Propane sultone - 1120-71-4	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.

**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 7440-50-8	-	X	X	-
Nickel 7440-02-0	-	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) 12190-79-3	Present	-
1,3-Propane sultone 1120-71-4	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	5000 lb	-	RQ 5000 lb final RQ

7440-50-8			RQ 2270 kg final RQ
Nickel 7440-02-0	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ
1,3-Propane sultone 1120-71-4	10 lb	-	RQ 10 lb final RQ RQ 4.54 kg final RQ

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals:.

Chemical name	California Proposition 65
Carbon black - 1333-86-4	Carcinogen
Nickel - 7440-02-0	Carcinogen
1,3-Propane sultone - 1120-71-4	Carcinogen

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

Chemical name	New Jersey	Massachusetts	Pennsylvania
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	X	-	X
Carbon black 1333-86-4	X	X	X
Aluminum 7429-90-5	X	X	X
Copper 7440-50-8	X	X	X
Diethyl carbonate 105-58-8	X	X	X
Ethylene carbonate 96-49-1	-	X	X
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X	-	-
Aluminum oxide 1344-28-1	X	X	X
Nickel 7440-02-0	X	X	X
1,3-Propane sultone 1120-71-4	X	X	X
Graphite 7782-42-5	X	X	X
Acrylic acid 79-10-7	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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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information

relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**