

SAFETY DATA SHEET

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NGHS / English



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1. IDENTIFICATION

Product identifier

Product Name Rechargeable Li-ion Battery L24D4PC0 by SUNWODA

Other means of identification

Product Code(s) 1834297

Recommended use of the chemical and restrictions on use

Recommended Use Lithium Ion Battery

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Identification Lenovo LNB laptops

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Emergency telephone number

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2. HAZARDS IDENTIFICATION

Classification

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

Appearance Black

Physical state Solid

Odor Odorless

GHS Label elements, including precautionary statements

Danger

Hazard statements

- Causes skin irritation
- Causes serious eye irritation
- May cause an allergic skin reaction
- May cause cancer
- 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
- Contaminated work clothing must not be allowed out of the workplace
- Do not breathe dust/fume/gas/mist/vapors/spray
- 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/attention

Skin

- IF ON SKIN: Wash with plenty of water and soap
- Take off contaminated clothing and wash it before reuse
- If skin irritation or rash occurs: Get medical advice/attention

Precautionary Statements - Storage

- Store locked up

Precautionary Statements - Disposal

- Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity 45.11 % of the mixture consists of ingredient(s) of unknown toxicity
42.11 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

45.11 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 45.11 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 45.11 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 45.11 % 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)
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	43.83	-	-
Graphite	7782-42-5	23.11	-	-
Propylene carbonate	108-32-7	10	-	-
Ethylene carbonate	96-49-1	10	-	-
Copper	7440-50-8	8.66	-	-
Ci 77000	7429-90-5	3.98	-	-
Nickel	7440-02-0	2	-	-
Ci 77266	1333-86-4	2	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1.61	-	-
Sodium carboxymethyl cellulose	9004-32-4	1	-	-
1,3-Propane sultone	1120-71-4	0.33	-	-

4. FIRST AID MEASURES

Description of first aid measures

General advice

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:

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

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

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.
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Conditions for safe storage, including any incompatibilities



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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	-		
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust	
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume	
Ci 77000 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust	
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.015 mg/m ³	
Ci 77266 1333-86-4	TWA: 3 mg/m ³ inhalable particulate matter	TWA: 3.5 mg/m ³ (vacated) TWA: 3.5 mg/m ³	IDLH: 1750 mg/m ³ TWA: 3.5 mg/m ³ TWA: 0.1 mg/m ³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH	
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F	
Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³
Graphite 7782-42-5	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³
Copper 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Ci 77000	TWA: 10 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³



7429-90-5				
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 0.05 mg/m ³	TWA: 1 mg/m ³	TWA: 1.5 mg/m ³
Ci 77266 1333-86-4	TWA: 3.5 mg/m ³	TWA: 3 mg/m ³	TWA: 3 mg/m ³	TWA: 3 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³
1,3-Propane sultone 1120-71-4		TWA:	TWA:	TWA:

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

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Appearance Black
Odor Odorless
Color No information available
Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	



Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water ¹		
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other Information

Explosive properties	No information available
Oxidizing properties	No information available
Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

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

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). Irritating to eyes.
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.

Numerical measures of toxicity

Acute toxicity

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

ATEmix (oral) 12,681.70 mg/kg
ATEmix (dermal) 10,228.00 mg/kg

Unknown acute toxicity 45.11 % of the mixture consists of ingredient(s) of unknown toxicity
42.11 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
45.11 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
45.11 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
45.11 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
45.11 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Product Information			
Component Information			
Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium Cobalt Oxide (CoLiO2)	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat) 4 h
Graphite	-	-	> 2000 mg/m ³ (Rat) 4 h
Propylene carbonate	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Ethylene carbonate	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 h
Copper	-	-	> 5.11 mg/L (Rat) 4 h
Ci 77000	-	-	> 0.888 mg/L (Rat) 4 h
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat) 1 h
Ci 77266	> 10000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 4.6 mg/m ³ (Rat) 4 h
Sodium carboxymethyl cellulose	= 27000 mg/kg (Rat)	-	> 5800 mg/m ³ (Rat) 4 h
1,3-Propane sultone	= 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. Irritating to skin.
Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitization May cause sensitization by skin contact.
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	Group 2B	Reasonably Anticipated	X
Nickel 7440-02-0	-	Group 2B	Reasonably Anticipated	X
Ci 77266 1333-86-4	A3	Group 2B	-	X
1,3-Propane sultone	A3	Group 2A	Reasonably Anticipated	X



1120-71-4			
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Legend

- ACGIH (American Conference of Governmental Industrial Hygienists)**
- A3 - Animal Carcinogen
- IARC (International Agency for Research on Cancer)**
- Group 2A - Probably Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans
- NTP (National Toxicology Program)**
- Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
- OSHA (Occupational Safety and Health Administration of the US Department of Labor)**
- X - Present

- 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	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Graphite	No data available	96h LC50: > 100 mg/L (Danio rerio)	No data available	No data available
Propylene carbonate	72h EC50: > 500 mg/L (Desmodesmus subspicatus)	96h LC50: > 1000 mg/L (Cyprinus carpio)	EC50 > 10000 mg/L 17 h	48h EC50: > 500 mg/L (Daphnia magna)
Ethylene carbonate	No data available	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	No data available	No data available
Copper	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)	No data available	48h EC50: = 0.03 mg/L (Daphnia magna)
Nickel	72h EC50: = 0.18 mg/L (Pseudokirchneriella subcapitata) 96h EC50: 0.174 - 0.311 mg/L (Pseudokirchneriella	96h LC50: > 100 mg/L (Brachydanio rerio) 96h LC50: = 1.3 mg/L (Cyprinus carpio) 96h LC50: = 10.4 mg/L (Cyprinus carpio)	No data available	48h EC50: > 100 mg/L (Daphnia magna) 48h EC50: = 1 mg/L (Daphnia magna)



	subcapitata)			
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Persistence and Degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Propylene carbonate	0.48
Ethylene carbonate	0.11

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Waste Codes 141

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

Chemical name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	Toxic
Ci 77000 7429-90-5	Ignitable powder
Nickel 7440-02-0	Toxic powder Ignitable powder

14. TRANSPORT INFORMATION

Note: The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT NOT REGULATED



Proper Shipping Name	NON-REGULATED
Hazard Class	N/A
Emergency Response Guide Number	147
TDG	Not applicable
MEX	Not applicable
ICAO	Not applicable
IATA	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
ERG Code	12FZ
Description	UN3480, LITHIUM ION BATTERIES, 9
IMDG/IMO	Not applicable
Proper Shipping Name	NON-REGULATED PER SP 188
Hazard Class	N/A
EmS-No.	F-A, S-I
RID	Not applicable
ADR	Not applicable
ADN	Not applicable

15. REGULATORY INFORMATION

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

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

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

Legend

TSCA	- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/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 %
Lithium Cobalt Oxide (CoLiO ₂) - 12190-79-3	12190-79-3	43.83	0.1
Copper - 7440-50-8	7440-50-8	8.66	1.0
Ci 77000 - 7429-90-5	7429-90-5	3.98	1.0
Nickel - 7440-02-0	7440-02-0	2	0.1
1,3-Propane sultone - 1120-71-4	1120-71-4	0.33	0.1

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper 7440-50-8		X	X	
Nickel 7440-02-0		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ 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
Ci 77266 - 1333-86-4	carcinogen, 2/21/2003 (airborne, unbound particles of respirable size)
Nickel - 7440-02-0	carcinogen, 10/1/1989 (metallic)
1,3-Propane sultone - 1120-71-4	carcinogen, 1/1/1988

U.S. State Right-to-Know Regulations

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



Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	X		X	X	X
Graphite 7782-42-5	X	X	X		
Ethylene carbonate 96-49-1		X	X		
Copper 7440-50-8	X	X	X	X	X
Ci 77000 7429-90-5	X	X	X	X	
Nickel 7440-02-0	X	X	X	X	X
Ci 77266 1333-86-4	X	X	X		X
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X				
1,3-Propane sultone 1120-71-4	X	X	X	X	X

16. OTHER INFORMATION

NFPA Health hazards 1 Flammability 0 Instability 0 Physical and Chemical Properties -
HMIS Health hazards 0 Flammability 0 Physical hazards 0 Personal Protection X

Prepared By Product Stewardship
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Latham, NY 12110
1-800-572-6501

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Revision Note No information available

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



SAFETY DATA SHEET

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1. IDENTIFICATION

Product identifier

Product Name Rechargeable Li-ion Battery L24M4PC0 by Simplo

Other means of identification

Product Code(s) 1834293

Recommended use of the chemical and restrictions on use

Recommended Use Lithium Ion Battery

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Identification Lenovo LNB laptops

Address Songtao Road 696
shanghai
shanghai
201203
CN

Telephone Phone:18116118603

E-mail yuanbb1@lenovo.com

Emergency telephone number

Company Emergency Phone Number 18116118603

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 1B
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 Odorless

GHS Label elements, including precautionary statements

Danger

Hazard statements

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/face protection

Wash face, hands and any exposed skin thoroughly after handling

Do not breathe dust/fume/gas/mist/vapors/spray

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/attention

Skin

IF ON SKIN: Wash with plenty of water and soap

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

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 29.75 % of the mixture consists of ingredient(s) of unknown toxicity

27.57 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

29.75 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

29.75 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

29.75 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

29.75 % 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)
Lithium Cobalt Oxide (CoLiO ₂)	12190-79-3	46.8	-	-
Graphite	7782-42-5	23.95	-	-
Si 77400	7440-50-8	7.72	-	-
Aluminum	7429-90-5	6.4	-	-
Propylene carbonate	108-32-7	1.81	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1.81	-	-
Ethylene carbonate	96-49-1	1.81	-	-
1,3-Propane sultone	1120-71-4	0.45	-	-

4. FIRST AID MEASURES

Description of first aid measures

General advice

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

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

Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion

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

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

Burning sensation.

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.
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	No information available.
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.
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. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	-		
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust	
Ci 77400 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume	
Aluminum 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust	
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F	
Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³
Graphite 7782-42-5	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³
Ci 77400 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Aluminum 7429-90-5	TWA: 10 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³
1,3-Propane sultone 1120-71-4		TWA:	TWA:	TWA:

Other Exposure Guidelines

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

Appropriate engineering controls

Engineering controls

- Showers
- Eyewash stations
- Ventilation systems.

Individual protection measures, such as personal protective equipment



Eye/face protection	If splashes are likely to occur, wear safety glasses with side-shields.
Hand protection	Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Black
Odor	Odorless
Color	No information available
Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water¹		
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other Information

Explosive properties	No information available
Oxidizing properties	No information available
Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY



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

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). Irritating to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
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.
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Numerical measures of toxicity

Acute toxicity

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

ATEmix (oral)	18,095.50 mg/kg
ATEmix (dermal)	11,643.60 mg/kg

Unknown acute toxicity	29.75 % of the mixture consists of ingredient(s) of unknown toxicity
	27.57 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
	29.75 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
	29.75 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
	29.75 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
	29.75 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Product Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
---------------	-----------	-------------	-----------------



Lithium Cobalt Oxide (CoLiO2)	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat) 4 h
Graphite	-	-	> 2000 mg/m ³ (Rat) 4 h
Ci 77400	-	-	> 5.11 mg/L (Rat) 4 h
Aluminum	-	-	> 0.888 mg/L (Rat) 4 h
Propylene carbonate	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Ethylene carbonate	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 h
1,3-Propane sultone	= 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. Irritating to skin.
- 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) 12190-79-3	A3	Group 2B	Reasonably Anticipated	X
1,3-Propane sultone 1120-71-4	A3	Group 2A	Reasonably Anticipated	X

Legend

- ACGIH (American Conference of Governmental Industrial Hygienists)**
A3 - Animal Carcinogen
- IARC (International Agency for Research on Cancer)**
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
- NTP (National Toxicology Program)**
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
- OSHA (Occupational Safety and Health Administration of the US Department of Labor)**
X - Present

- 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	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Graphite	No data available	96h LC50: > 100 mg/L	No data available	No data available



		(Danio rerio)		
Ci 77400	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)	No data available	48h EC50: = 0.03 mg/L (Daphnia magna)
Propylene carbonate	72h EC50: > 500 mg/L (Desmodesmus subspicatus)	96h LC50: > 1000 mg/L (Cyprinus carpio)	EC50 > 10000 mg/L 17 h	48h EC50: > 500 mg/L (Daphnia magna)
Ethylene carbonate	No data available	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	No data available	No data available

Persistence and Degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Propylene carbonate	0.48
Ethylene carbonate	0.11

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Waste Codes 141

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

Chemical name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic
Aluminum	Ignitable powder



7429-90-5	
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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
Proper Shipping Name	NON-REGULATED
Hazard Class	N/A
Emergency Response Guide Number	147
TDG	Not applicable
MEX	Not applicable
ICAO	Not applicable
IATA	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
ERG Code	12FZ
Description	UN3480, LITHIUM ION BATTERIES, 9
IMDG/IMO	Not applicable
Proper Shipping Name	NON-REGULATED PER SP 188
Hazard Class	N/A
EmS-No.	F-A, S-I
RID	Not applicable
ADR	Not applicable
ADN	Not applicable

15. REGULATORY INFORMATION

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

International Regulations

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



The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

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

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

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

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	46.8	0.1
Ci 77400 - 7440-50-8	7440-50-8	7.72	1.0
Aluminum - 7429-90-5	7429-90-5	6.4	1.0
1,3-Propane sultone - 1120-71-4	1120-71-4	0.45	0.1

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ci 77400 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Ci 77400 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ



1,3-Propane sultone 1120-71-4	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
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US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
1,3-Propane sultone - 1120-71-4	carcinogen, 1/1/1988

U.S. State Right-to-Know Regulations

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

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	X		X	X	X
Graphite 7782-42-5	X	X	X		
Ci 77400 7440-50-8	X	X	X	X	X
Aluminum 7429-90-5	X	X	X	X	
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X				
Ethylene carbonate 96-49-1		X	X		
1,3-Propane sultone 1120-71-4	X	X	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties - Personal Protection X
HMIS	Health hazards 0	Flammability 0	Physical hazards 0	

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 09-Jan-2025

Revision Note No information available

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



SAFETY DATA SHEET

Issuing Date No data available

Revision Date 13-Jan-2025

Revision Number 1

NGHS / English



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1. IDENTIFICATION

Product identifier

Product Name Rechargeable Li-ion Battery L24X4PC0 by CosMX

Other means of identification

Product Code(s) 1834299

Recommended use of the chemical and restrictions on use

Recommended Use Lithium Ion Battery

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Identification Lenovo LNB laptops

Address Songtao Road 696
shanghai
shanghai
201203
CN

Telephone Phone:18116118603

E-mail yuanbb1@lenovo.com

Emergency telephone number

Company Emergency Phone Number 18116118603

2. HAZARDS IDENTIFICATION

Classification

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



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 Odorless

GHS Label elements, including precautionary statements

Danger

Hazard statements

- Causes skin irritation
- Causes serious eye irritation
- May cause an allergic skin reaction
- May cause cancer
- 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
- Contaminated work clothing must not be allowed out of the workplace
- Do not breathe dust/fume/gas/mist/vapors/spray
- 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/attention

Skin

- IF ON SKIN: Wash with plenty of water and soap
- Take off contaminated clothing and wash it before reuse
- If skin irritation or rash occurs: Get medical advice/attention

Precautionary Statements - Storage

- Store locked up

Precautionary Statements - Disposal

- Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity 30.31 % of the mixture consists of ingredient(s) of unknown toxicity
27.92 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30.31 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
30.31 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
30.31 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
30.31 % 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)
Lithium Cobalt Oxide (CoLiO ₂)	12190-79-3	39.65	-	-
Graphite	7782-42-5	19.3	-	-
Copper	7440-50-8	12.3	-	-
Aluminum	7429-90-5	8.98	-	-
Ethylene carbonate	96-49-1	2.56	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1.34	-	-
Nickel	7440-02-0	1.12	-	-
1,3-Propane sultone	1120-71-4	0.35	-	-

4. FIRST AID MEASURES

Description of first aid measures

General advice

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

Inhalation

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

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

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.
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Conditions for safe storage, including any incompatibilities

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	-		
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust	
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume	
Aluminum 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust	
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F	
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.015 mg/m ³	
Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³
Graphite 7782-42-5	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³
Copper 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Aluminum 7429-90-5	TWA: 10 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 0.05 mg/m ³	TWA: 1 mg/m ³	TWA: 1.5 mg/m ³
1,3-Propane sultone 1120-71-4		TWA:	TWA:	TWA:



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

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Appearance Black
Odor Odorless
Color No information available
Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Relative density	No data available	None known	
Water Solubility	Insoluble in water		
Solubility(ies)	No data available	None known	
Partition coefficient: n-octanol/water ¹			
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	

Other Information
Explosive properties No information available



Oxidizing properties	No information available
Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

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

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). Irritating to eyes.
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.

Numerical measures of toxicity

Acute toxicity

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

ATEmix (oral)	24,550.40 mg/kg
ATEmix (dermal)	15,602.20 mg/kg

Unknown acute toxicity 30.31 % of the mixture consists of ingredient(s) of unknown toxicity
 27.92 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 30.31 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 30.31 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 30.31 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 30.31 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Product Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium Cobalt Oxide (CoLiO2)	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat) 4 h
Graphite	-	-	> 2000 mg/m ³ (Rat) 4 h
Copper	-	-	> 5.11 mg/L (Rat) 4 h
Aluminum	-	-	> 0.888 mg/L (Rat) 4 h
Ethylene carbonate	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 h
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat) 1 h
1,3-Propane sultone	= 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. Irritating to skin.
Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitization May cause sensitization by skin contact.
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	Group 2B	Reasonably Anticipated	X
Nickel 7440-02-0	-	Group 2B	Reasonably Anticipated	X
1,3-Propane sultone 1120-71-4	A3	Group 2A	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
 A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
 Group 2A - Probably Carcinogenic to Humans
 Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)
 Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 X - Present

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	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Graphite	No data available	96h LC50: > 100 mg/L (Danio rerio)	No data available	No data available
Copper	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)	No data available	48h EC50: = 0.03 mg/L (Daphnia magna)
Ethylene carbonate	No data available	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	No data available	No data available
Nickel	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)	No data available	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	0.11

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods



Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Waste Codes 141

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

Chemical name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	Toxic
Aluminum 7429-90-5	Ignitable powder
Nickel 7440-02-0	Toxic powder Ignitable powder

14. TRANSPORT INFORMATION

Note: The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT
Proper Shipping Name NOT REGULATED
Hazard Class NON-REGULATED
Emergency Response Guide Number N/A
 147

TDG Not applicable

MEX Not applicable

ICAO Not applicable

IATA
UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
ERG Code 12FZ
Description UN3480, LITHIUM ION BATTERIES, 9

IMDG/IMO
Proper Shipping Name Not applicable
Hazard Class NON-REGULATED PER SP 188
 N/A



EmS-No. F-A, S-I
Marine Pollutant This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

RID Not applicable

ADR Not applicable

ADN Not applicable

15. REGULATORY INFORMATION

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

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

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

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/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 %
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	39.65	0.1
Copper - 7440-50-8	7440-50-8	12.3	1.0
Aluminum - 7429-90-5	7429-90-5	8.98	1.0
Nickel - 7440-02-0	7440-02-0	1.12	0.1
1,3-Propane sultone - 1120-71-4	1120-71-4	0.35	0.1

SARA 311/312 Hazard Categories

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



need to be consistent with updated hazard classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper 7440-50-8		X	X	
Nickel 7440-02-0		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ 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
Nickel - 7440-02-0	carcinogen, 10/1/1989 (metallic)
1,3-Propane sultone - 1120-71-4	carcinogen, 1/1/1988
Carbon black - 1333-86-4	Carcinogen
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
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	X		X	X	X
Graphite 7782-42-5	X	X	X		
Copper 7440-50-8	X	X	X	X	X
Aluminum 7429-90-5	X	X	X	X	
Ethylene carbonate 96-49-1		X	X		
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X				
Nickel 7440-02-0	X	X	X	X	X



1,3-Propane sultone 1120-71-4	X	X	X	X	X
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16. OTHER INFORMATION

NFPA	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 0	Flammability 0	Physical hazards 0	Personal Protection X

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 13-Jan-2025

Revision Note No information available

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



SAFETY DATA SHEET

Issuing Date 09-Jan-2025

Revision Date 08-Jan-2025

Revision Number 1

NGHS / English



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1. IDENTIFICATION

Product identifier

Product Name Rechargeable Li-ion Battery L24B4PC0 by BYD

Other means of identification

Product Code(s) 1834292

Recommended use of the chemical and restrictions on use

Recommended Use Lithium Ion Battery

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Identification Lenovo LNB laptops

Address Songtao Road 696
shanghai
shanghai
201203
CN

Telephone Phone:18116118603

E-mail yuanbb1@lenovo.com

Emergency telephone number

Company Emergency Phone Number 18116118603

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1B



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 Odorless

GHS Label elements, including precautionary statements

Danger

Hazard statements

- Causes severe skin burns and eye damage
- 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
- Contaminated work clothing must not be allowed out of the workplace
- Do not breathe dust/fume/gas/mist/vapors/spray
- Do not eat, drink or smoke when using this product

Precautionary Statements - Response

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

Eyes

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

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing
Immediately call a POISON CENTER or doctor

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information



May be harmful in contact with skin. Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity 32 % of the mixture consists of ingredient(s) of unknown toxicity
 25 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 32 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 32 % 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)
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	45	-	-
Graphite	7782-42-5	25	-	-
Propylene carbonate	108-32-7	10	-	-
Propyl propionate	106-36-5	10	-	-
Ethylene carbonate	96-49-1	10	-	-
Ci 77400	7440-50-8	10	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	5	-	-
Nickel	7440-02-0	5	-	-
Aluminum foil	7429-90-5	5	-	-
Ci 77266	1333-86-4	2	-	-

4. FIRST AID MEASURES

Description of first aid measures

General advice

Immediate medical attention is required. 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:

Inhalation

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

Eye contact

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

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.



Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/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. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. 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	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. 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 Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

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

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. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. 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. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	TWA: 0.02 mg/m ³	-	
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
Ci 77400 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.015 mg/m ³
Aluminum foil	TWA: 1 mg/m ³ respirable	TWA: 15 mg/m ³ total dust	TWA: 10 mg/m ³ total dust



7429-90-5	particulate matter	TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 5 mg/m ³ respirable dust	
Ci 77266 1333-86-4	TWA: 3 mg/m ³ inhalable particulate matter	TWA: 3.5 mg/m ³ (vacated) TWA: 3.5 mg/m ³	IDLH: 1750 mg/m ³ TWA: 3.5 mg/m ³ TWA: 0.1 mg/m ³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH	
Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³
Graphite 7782-42-5	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³
Ci 77400 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 0.05 mg/m ³	TWA: 1 mg/m ³	TWA: 1.5 mg/m ³
Aluminum foil 7429-90-5	TWA: 10 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³
Ci 77266 1333-86-4	TWA: 3.5 mg/m ³	TWA: 3 mg/m ³	TWA: 3 mg/m ³	TWA: 3 mg/m ³

Other Exposure Guidelines

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

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face protection shield.

Hand protection

Wear suitable gloves. Impervious gloves.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

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. 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. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES



Information on basic physical and chemical properties

Physical state	Solid
Appearance	Black
Odor	Odorless
Color	No information available
Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water ¹		
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other Information

Explosive properties	No information available
Oxidizing properties	No information available
Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

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	Exposure to air or moisture over prolonged periods.
Incompatible materials	Acids. Bases. Oxidizing agent.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:
Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May be harmful in contact with skin.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.
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Numerical measures of toxicity

Acute toxicity

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

ATEmix (oral)	5,572.90 mg/kg
ATEmix (dermal)	3,932.10 mg/kg
ATEmix (inhalation-gas)	30,600.00 ppm
ATEmix (inhalation-dust/mist)	10.20 mg/L
ATEmix (inhalation-vapor)	74.80 mg/L

Unknown acute toxicity	32 % of the mixture consists of ingredient(s) of unknown toxicity
	25 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
	32 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
	32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
	32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
	32 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Product Information

Component Information

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



Propylene carbonate	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Propyl propionate	= 10331 mg/kg (Rat)	= 16 mL/kg (Rabbit)	-
Ethylene carbonate	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 h
Ci 77400	-	-	> 5.11 mg/L (Rat) 4 h
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat) 1 h
Aluminum foil	-	-	> 0.888 mg/L (Rat) 4 h
Ci 77266	> 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 burns.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.
Respiratory or skin sensitization	May cause sensitization by skin contact.
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 (CoLiO ₂) 12190-79-3	A3	Group 2B	Reasonably Anticipated	X
Nickel 7440-02-0	-	Group 2B	Reasonably Anticipated	X
Ci 77266 1333-86-4	A3	Group 2B	-	X

Legend

- ACGIH (American Conference of Governmental Industrial Hygienists)**
A3 - Animal 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
- 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	Algae/aquatic plants	Fish	Toxicity to	Crustacea
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			microorganisms	
Graphite	No data available	96h LC50: > 100 mg/L (Danio rerio)	No data available	No data available
Propylene carbonate	72h EC50: > 500 mg/L (Desmodesmus subspicatus)	96h LC50: > 1000 mg/L (Cyprinus carpio)	EC50 > 10000 mg/L 17 h	48h EC50: > 500 mg/L (Daphnia magna)
Ethylene carbonate	No data available	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	No data available	No data available
Ci 77400	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)	No data available	48h EC50: = 0.03 mg/L (Daphnia magna)
Nickel	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)	No data available	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
Propylene carbonate	0.48
Ethylene carbonate	0.11

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.



California Waste Codes 141

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

Chemical name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic
Nickel 7440-02-0	Toxic powder Ignitable powder
Aluminum foil 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

Note: The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT NOT REGULATED
Proper Shipping Name NON-REGULATED
Hazard Class N/A
Emergency Response Guide Number 147

TDG Not applicable

MEX Not applicable

ICAO Not applicable

IATA
UN-No. UN3480
Proper Shipping Name LITHIUM ION BATTERIES
Hazard Class 9
ERG Code 12FZ
Description UN3480, LITHIUM ION BATTERIES, 9

IMDG/IMO Not applicable
Proper Shipping Name NON-REGULATED PER SP 188
Hazard Class N/A
EmS-No. F-A, S-I
Marine Pollutant This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

RID Not applicable



ADR Not applicable

ADN Not applicable

15. REGULATORY INFORMATION

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

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

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

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/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 %
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	45	0.1
Ci 77400 - 7440-50-8	7440-50-8	10	1.0
Nickel - 7440-02-0	7440-02-0	5	0.1
Aluminum foil - 7429-90-5	7429-90-5	5	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	CWA - Toxic Pollutants	CWA - Priority	CWA - Hazardous
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	Quantities		Pollutants	Substances
Ci 77400 7440-50-8		X	X	
Nickel 7440-02-0		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Ci 77400 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Nickel 7440-02-0	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Aluminum foil 7429-90-5			

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Nickel - 7440-02-0	carcinogen, 10/1/1989 (metallic)
Ci 77266 - 1333-86-4	carcinogen, 2/21/2003 (airborne, unbound particles of respirable size)

U.S. State Right-to-Know Regulations

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

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	X		X	X	X
Graphite 7782-42-5	X	X	X		
Propyl propionate 106-36-5		X	X		
Ethylene carbonate 96-49-1		X	X		
Ci 77400 7440-50-8	X	X	X	X	X
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X				
Nickel 7440-02-0	X	X	X	X	X
Aluminum foil 7429-90-5	X	X	X	X	
Ci 77266 1333-86-4	X	X	X		X

16. OTHER INFORMATION



NFPA	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 0	Flammability 0	Physical hazards 0	Personal Protection X

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 09-Jan-2025

Revision Date 08-Jan-2025

Revision Note No information available

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

SAFETY DATA SHEET

Issuing Date No data available

Revision Date 09-Jan-2025

Revision Number 1

NGHS / English



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1. IDENTIFICATION

Product identifier

Product Name Rechargeable Li-ion Battery L24N4PC0 by NVT

Other means of identification

Product Code(s) 1834723

Recommended use of the chemical and restrictions on use

Recommended Use Lithium Ion Battery

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Identification Lenovo LNB laptops

Address Songtao Road 696
shanghai
shanghai
201203
CN

Telephone Phone:18116118603

E-mail yuanbb1@lenovo.com

Emergency telephone number

Company Emergency Phone Number 18116118603

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1



Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
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 Odorless

GHS Label elements, including precautionary statements

Danger

Hazard statements

- Harmful if swallowed
- Harmful in contact with skin
- Causes severe skin burns and eye damage
- May cause cancer
- May cause respiratory irritation. May cause drowsiness or dizziness
- 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
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

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

Eyes

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

Skin

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

Inhalation

- IF INHALED: Remove person to fresh air and keep comfortable for breathing
- Immediately call a POISON CENTER or doctor

Ingestion

- IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- Rinse mouth
- Do NOT induce vomiting

Precautionary Statements - Storage



Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity 30 % of the mixture consists of ingredient(s) of unknown toxicity

- 25 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 30 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 30 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 30 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 30 % 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)
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	40	-	-
Copper	7440-50-8	30	-	-
Aluminum foil	7429-90-5	30	-	-
Graphite	7782-42-5	25	-	-
Propylene carbonate	108-32-7	15	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	15	-	-
Ethylene carbonate	96-49-1	15	-	-
1,3-Propane sultone	1120-71-4	1	-	-

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. In case of rupture:

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

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present



and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/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 contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.
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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	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous Combustion Products	Carbon oxides.
Explosion Data	
Sensitivity to Mechanical Impact	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. Attention! Corrosive material. 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. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists.

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. Protect from moisture. Store away from other materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	-	
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust



		(vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F
Chemical name	Alberta	British Columbia	Ontario TWAEV
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³
Copper 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Aluminum foil 7429-90-5	TWA: 10 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³
Graphite 7782-42-5	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³
1,3-Propane sultone 1120-71-4		TWA:	TWA:

Other Exposure Guidelines

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

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face protection shield.

Hand protection

Wear suitable gloves. Impervious gloves.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

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. 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. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Appearance Black
Odor Odorless
Color No information available



Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water ¹		
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other Information

Explosive properties	No information available
Oxidizing properties	No information available
Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

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	Exposure to air or moisture over prolonged periods.
Incompatible materials	Acids. Bases. Oxidizing agent.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

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

Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause drowsiness or dizziness.
Eye contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Numerical measures of toxicity

Acute toxicity

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

ATEmix (oral)	1,943.10 mg/kg
ATEmix (dermal)	1,375.00 mg/kg

Unknown acute toxicity 30 % of the mixture consists of ingredient(s) of unknown toxicity
 25 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 30 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 30 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 30 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 30 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Product Information			
Component Information			
Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Lithium Cobalt Oxide (CoLiO2)	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat) 4 h
Copper	-	-	> 5.11 mg/L (Rat) 4 h
Aluminum foil	-	-	> 0.888 mg/L (Rat) 4 h
Graphite	-	-	> 2000 mg/m ³ (Rat) 4 h
Propylene carbonate	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Ethylene carbonate	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 h
1,3-Propane sultone	= 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 burns.



Serious eye damage/eye irritation	Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.
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 (CoLiO ₂) 12190-79-3	A3	Group 2B	Reasonably Anticipated	X
1,3-Propane sultone 1120-71-4	A3	Group 2A	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

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

X - Present

Reproductive toxicity	No information available.
STOT - single exposure	May cause respiratory irritation. May cause drowsiness or dizziness.
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	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Copper	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	No data available	48h EC50: = 0.03 mg/L (Daphnia magna)



		(Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 0.112 mg/L (Poecilia reticulata)		
Graphite	No data available	96h LC50: > 100 mg/L (Danio rerio)	No data available	No data available
Propylene carbonate	72h EC50: > 500 mg/L (Desmodesmus subspicatus)	96h LC50: > 1000 mg/L (Cyprinus carpio)	EC50 > 10000 mg/L 17 h	48h EC50: > 500 mg/L (Daphnia magna)
Ethylene carbonate	No data available	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	No data available	No data available

Persistence and Degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Propylene carbonate	0.48
Ethylene carbonate	0.11

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Waste Codes 141

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

Chemical name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic
Aluminum foil 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

Note: The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard



passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT	NOT REGULATED
Proper Shipping Name	NON-REGULATED
Hazard Class	N/A
Emergency Response Guide Number	147
TDG	Not applicable
MEX	Not applicable
ICAO	Not applicable
IATA	
UN-No.	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	9
ERG Code	12FZ
Description	UN3480, LITHIUM ION BATTERIES, 9
IMDG/IMO	Not applicable
Proper Shipping Name	NON-REGULATED PER SP 188
Hazard Class	N/A
EmS-No.	F-A, S-I
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO
RID	Not applicable
ADR	Not applicable
ADN	Not applicable

15. REGULATORY INFORMATION

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

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.



PICCS Contact supplier for inventory compliance status.
AICS Contact supplier for inventory compliance status.

Legend

- TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS** - Japan Existing and New Chemical Substances
- KECL** - Korean Existing and Evaluated Chemical Substances
- PICCS** - Philippines Inventory of Chemicals and Chemical Substances
- AICS** - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

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

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	40	0.1
Copper - 7440-50-8	7440-50-8	30	1.0
Aluminum foil - 7429-90-5	7429-90-5	30	1.0
1,3-Propane sultone - 1120-71-4	1120-71-4	1	0.1

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper 7440-50-8		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Aluminum foil 7429-90-5			
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
1,3-Propane sultone - 1120-71-4	carcinogen, 1/1/1988

U.S. State Right-to-Know Regulations

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

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	X		X	X	X
Copper 7440-50-8	X	X	X	X	X
Aluminum foil 7429-90-5	X	X	X	X	
Graphite 7782-42-5	X	X	X		
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X				
Ethylene carbonate 96-49-1		X	X		
1,3-Propane sultone 1120-71-4	X	X	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 0	Flammability 0	Physical hazards 0	Personal Protection X

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 09-Jan-2025

Revision Note No information available

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



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200) and Canada Hazardous Products Act (HPA) and the
Hazardous Products Regulation (HPR), as amended

Issuing Date 05-Nov-2025

Revision date 05-Nov-2025

Revision Number 1

1. Identification

Product identifier

Product Name JHT CR2016

Other means of identification

Product Code(s) 1882681

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Lithium Primary/Metal Batteries

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Name Lenovo LNB laptops

Supplier Address

Songtao Road 696
shanghai
shanghai
201203
CN

Emergency telephone number

Supplier Phone Number Phone:18116118603

24 Hour Emergency Phone Number 18116118603

Emergency Telephone No information available

2. Hazard(s) identification

Classification of the substance or mixture

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1 Category 3
Category 3 Target organ effects: Respiratory irritation.	
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

**Danger****Hazard statements**

Harmful if swallowed.
Fatal if inhaled.
Toxic if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May damage fertility or the unborn child.
Causes damage to organs.
May cause respiratory irritation.
May cause 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 eat, drink or smoke when using this product.
Do not breathe dust.
Use only outdoors or in a well-ventilated area.
Wear respiratory protection.

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention.
IF exposed or concerned: Call a POISON CENTER or doctor.
Specific treatment (see supplemental first aid instructions on this label).
Specific treatment is urgent (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.
If skin irritation occurs: Get medical advice and attention.
Take off contaminated clothing and wash it before reuse.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
Call a POISON CENTER or doctor.
Call a POISON CENTER or doctor if you feel unwell.

Ingestion

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

Precautionary Statements - Storage

Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal

Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

Unknown acute toxicity

14.51 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
86.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
86.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

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

No information available.

Other information

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 Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Manganese dioxide	1313-13-9	37	-	-
Propylene carbonate	108-32-7	7	-	-
Graphite	7782-42-5	5	-	-
Ethylene glycol dimethyl ether	110-71-4	5	-	-
Lithium	7439-93-2	2.71	-	-

4. First-aid measures**Description of first aid measures**

General advice	Show this safety data sheet to the doctor in attendance. First aid is upon rupture of sealed battery. In case of rupture:
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. 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.
Skin contact	If symptoms persist, call a physician. Wash off immediately with soap and plenty of water for at least 15 minutes.
Ingestion	Do NOT induce vomiting. Rinse mouth. 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	Erythema (skin redness). May cause redness and tearing of the eyes. Burning sensation.
Effects of Exposure	May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility. Causes damage to organs. May cause 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 chemical No information available.

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 In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

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. 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
Manganese dioxide 1313-13-9	TWA: 0.02 mg/m ³ Mn respirable particulate matter TWA: 0.1 mg/m ³ Mn inhalable particulate matter	Ceiling: 5 mg/m ³ Mn (vacated) Ceiling: 5 mg/m ³	TWA: 1 mg/m ³ ; Mn STEL: 3 mg/m ³ Mn IDLH: 500 mg/m ³ Mn
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
Ethylene glycol dimethyl ether 110-71-4	TWA: 0.5 ppm pSk	-	-

Chemical name	Alberta	British Columbia	Ontario	Quebec
Manganese dioxide 1313-13-9	TWA: 0.2 mg/m ³ ;	TWA: 0.02 mg/m ³ ; respirable TWA: 0.1 mg/m ³ ; inhalable Adverse reproductive effect	TWA: 0.02 mg/m ³ ; respirable particulate matter TWA: 0.1 mg/m ³ ; inhalable particulate matter	TWAEV: 0.2 mg/m ³ ; inhalable aerosol fraction TWAEV: 0.05 mg/m ³ ; respirable aerosol fraction
Graphite 7782-42-5	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable particulate matter	TWAEV: 2 mg/m ³ ; respirable dust
Ethylene glycol dimethyl ether 110-71-4	-	-	TWA: 5 ppm; TWA: 18 mg/m ³ ; dSk	-

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Manganese dioxide	TWA: 0.02 mg/m ³ ; respirable particulate matter TWA: 0.1 mg/m ³ ; inhalable particulate matter	TWA: 0.02 mg/m ³ ; respirable fraction TWA: 0.1 mg/m ³ ; inhalable fraction	TWA: 0.02 mg/m ³ ; respirable particulate matter TWA: 0.1 mg/m ³ ; inhalable particulate matter	TWA: 0.02 mg/m ³ ; respirable particulate matter TWA: 0.1 mg/m ³ ; inhalable particulate matter
Graphite	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable particulate matter
Ethylene glycol dimethyl ether	TWA: 0.5 ppm; pSk	-	TWA: 0.5 ppm; pSk	: 0.5 ppm; pSk

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Manganese dioxide	TWA: 0.2 mg/m ³ ; STEL: 0.6 mg/m ³ ;	TWA: 0.02 mg/m ³ ; respirable particulate matter TWA: 0.1 mg/m ³ ; inhalable particulate matter	TWA: 0.2 mg/m ³ ; STEL: 0.6 mg/m ³ ;	Ceiling: 5 mg/m ³ ;
Graphite	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 20 mppcf; TWA: 30 mppcf; TWA: 10 mg/m ³ ;
Ethylene glycol dimethyl ether	-	TWA: 0.5 ppm;	-	-

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 This product, as supplied, contains materials that do not have reportable biological exposure limits or are not subject to the reporting requirements of the local jurisdiction.

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.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection Use appropriate respiratory protection. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. No protective equipment is needed under normal use conditions. 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

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>
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	No data available	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

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).
Ingestion	Specific test data for the substance or mixture is not available. Harmful if swallowed. (based on components). Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Erythema (skin redness). May cause redness and tearing of the eyes. Burning sensation.

Acute toxicity Fatal if inhaled. Toxic by inhalation. Harmful if swallowed.

Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	1,151.50 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-vapor)	3.45 mg/l
ATEmix (inhalation-dust/mist)	0.471 mg/l

Unknown acute toxicity

14.51 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

86.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

86.81 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Manganese dioxide	> 3480 mg/kg (Rat)	-	> 1500 mg/m ³ (Rat) 4 h
Propylene carbonate	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Graphite	-	-	> 2000 mg/m ³ (Rat) 4 h
Ethylene glycol dimethyl ether	> 4000 mg/kg (Rat)	1000 - 2000 mg/kg (Rabbit)	20 - 63 mg/L (Rat) 6 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 Based on available data, the classification criteria are not met.
The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Manganese dioxide	A4 - Not classifiable as a human carcinogen	-	-	-

Reproductive toxicity Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.

STOT - single exposure Causes damage to organs if swallowed. May cause respiratory irritation.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity Based on available data, the classification criteria are not met.

Aquatic ecotoxicity

Component Information

Chemical name	Fish	Crustacea	Algae/aquatic plants	Toxicity to microorganisms
Propylene carbonate	96h LC50: > 1000 mg/L (Cyprinus carpio)	48h EC50: > 500 mg/L (Daphnia magna)	72h EC50: > 500 mg/L (Desmodesmus subspicatus)	EC50 > 10000 mg/L 17 h
Graphite	96h LC50: > 100 mg/L (Danio rerio)	-	-	-

Persistence and degradability No information available.

Bioaccumulative potential

Chemical name	Partition coefficient	Bioconcentration factor (BCF)	Trophic magnification factor (TMF)
Manganese dioxide	<0	-	-
Propylene carbonate	0.48	-	-
Ethylene glycol dimethyl ether	-0.21	-	-

Mobility in soil No information available.

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

DOT NOT REGULATED

Transport hazard class(es) N/A

DOT Marine Pollutant NP

Emergency Response Guide Number 138

TDG

UN number or ID number UN3090

UN proper shipping name LITHIUM METAL BATTERIES

Transport hazard class(es) 9

Description UN3090, LITHIUM METAL BATTERIES, 9

Special Provisions A88, A99, A154, A183, A201, A213

IATA

UN number or ID number UN3090
UN proper shipping name LITHIUM METAL BATTERIES
Transport hazard class(es) 9
Environmental hazards No
ERG Code 12FZ
Description UN3090, LITHIUM METAL 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.
KECL Contact supplier for inventory compliance status.
PICCS Contact supplier for inventory compliance status.
AIIIC 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

AIIIC - 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 %
---------------	-------------------------------

Manganese dioxide	1.0
Ethylene glycol dimethyl ether	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 does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

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)
Manganese dioxide	Present	-
Ethylene glycol dimethyl ether	Present	-

CERCLA

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

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Manganese dioxide	X	-	X
Ethylene glycol dimethyl ether	X	X	X
Graphite	X	X	X
Lithium	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

List may include phrases which are not applicable to this product

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

U.S. Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 U.S. 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)
 Japan 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)
 International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications
 International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program
 International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set
 United Nations World Health Organization (WHO)

Prepared By Product Stewardship
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 Latham, NY 12110
 1-800-572-6501.

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Revision Note No information available.

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

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 22-Jul-2025

Revision date 22-Jul-2025

Revision Number 1

1. Identification

Product identifier

Product Name Rechargeable Li-ion Battery L25N4PK0 by NVT

Other means of identification

Product Code(s) 1865000

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 Lenovo LNB laptops

Supplier Address

Songtao Road 696
shanghai
shanghai
201203
CN

Emergency telephone number

Supplier Phone Number Phone:18116118603

24 Hour Emergency Phone Number 18116118603

Emergency Telephone No information available

2. Hazard(s) identification

Classification of the substance or mixture

Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1

Label elements



Danger

Hazard statements

Harmful in contact with skin.
Causes severe skin burns and eye damage.
May cause cancer.
May cause respiratory irritation. May cause drowsiness or dizziness.
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.
Do not breathe dust.
Wash face, hands and any exposed skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Do not eat, drink or smoke when using this product.

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER or doctor.
Specific treatment (see supplemental first aid instructions on this label).

Eyes

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

Skin

IF ON SKIN: Wash with plenty of water and soap.
Call a POISON CENTER or doctor if you feel unwell.
Take off contaminated clothing and wash it before reuse.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
Call a POISON CENTER or doctor if you feel unwell.

Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Precautionary Statements - Storage

Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal

Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

Unknown acute toxicity

200 % 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

May be harmful if swallowed. Very 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 Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Copper	7440-50-8	30	-	-
Aluminum	7429-90-5	30	-	-
Graphite	7782-42-5	25	-	-
Propylene carbonate	108-32-7	15	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	15	-	-
Ethylene carbonate	96-49-1	15	-	-
1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene	9011-17-0	15	-	-
1,3-Propane sultone	1120-71-4	1	-	-

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. In case of rupture:

Inhalation

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

Eye contact

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

Skin contact

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

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 contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms

Burning sensation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

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

5. Fire-fighting measures

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

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

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

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

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

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. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid breathing vapors or mists.

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. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. 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. Protect from moisture. Keep out of the reach of children. Store away from other materials.

8. Exposure controls/personal protection

**Control Parameters
Exposure Limits**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.1 mg/m ³ ; fume IDLH: 100 mg/m ³ dust, fume and mist
Aluminum 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ ; total dust TWA: 5 mg/m ³ ; respirable dust
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F
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
Copper 7440-50-8	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist	TWAEV: 0.2 mg/m ³ ; fume TWAEV: 1 mg/m ³ ; dust and mist
Aluminum 7429-90-5	TWA: 10 mg/m ³ ; dust	TWA: 1.0 mg/m ³ ; respirable	TWA: 1 mg/m ³ ; respirable particulate matter	TWAEV: 10 mg/m ³
Graphite	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWAEV: 2 mg/m ³

7782-42-5	respirable	respirable	respirable particulate matter	respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWAEV: 2.5 mg/m ³ ;
1,3-Propane sultone 1120-71-4	-	: ;	: ;	: ;

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Copper	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume
Aluminum	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable fraction	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable particulate matter
Graphite	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable particulate matter
Phosphate(1-), hexafluoro-, lithium	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Copper	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 3 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume STEL: 3 mg/m ³ ; dust and mist	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.2 mg/m ³ ; fume STEL: 2 mg/m ³ ; dust and mist
Aluminum	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	-
Graphite	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 20 mppcf; TWA: 30 mppcf; TWA: 10 mg/m ³ ;
Phosphate(1-), hexafluoro-, lithium	-	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ; STEL: 5 mg/m ³ ;	TWA: 2.5 mg/m ³ ; STEL: 2.5 mg/m ³ ;
1,3-Propane sultone	Designated substance	-	Designated Chemical Substance	-

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
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	Tight sealing safety goggles. Face protection shield.
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 information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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)	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
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Heat of combustion 32.82

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 Exposure to air or moisture over prolonged periods.
Incompatible materials Acids. Bases. Oxidizing agent.
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. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause drowsiness or dizziness.

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

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

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Acute toxicity Harmful by skin contact.

Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	2,590.80 mg/kg
ATEmix (dermal)	1,964.30 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

200 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Copper 7440-50-8	-	-	> 5.11 mg/L (Rat) 4 h
Aluminum 7429-90-5	-	-	> 0.888 mg/L (Rat) 4 h
Graphite 7782-42-5	-	-	> 2000 mg/m ³ (Rat) 4 h
Propylene carbonate 108-32-7	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Ethylene carbonate 96-49-1	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 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 severe skin burns and eye damage.
- Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye damage. Causes burns.
- 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
Aluminum 7429-90-5	A4 - Not Classifiable as a Human Carcinogen	-	-	-
Phosphate(1-), hexafluoro-, lithium 21324-40-3	A4 - Not Classifiable as a Human Carcinogen	-	-	-
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
- 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 May cause respiratory irritation. May cause drowsiness or dizziness.

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	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)
Graphite 7782-42-5	-	96h LC50: > 100 mg/L (Danio rerio)	-	-
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)
Ethylene carbonate 96-49-1	-	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	-	-

Persistence and degradability No information available.

Bioaccumulation

Component Information

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

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 Hazard Class	NOT REGULATED N/A
TDG	Not applicable
MEX	Not applicable
ICAO (air) UN number or ID number UN proper shipping name Transport hazard class(es) Description	UN3480 LITHIUM ION BATTERIES 9 .?1 LITHIUM ION BATTERIES.?2
IATA UN number or ID number UN proper shipping name Transport hazard class(es) ERG Code Description	UN3480 LITHIUM ION BATTERIES 9 12FZ .?1 LITHIUM ION BATTERIES.?2
IMDG Transport hazard class(es) Marine pollutant indicator	Not applicable N/A NP

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 %
Aluminum - 7429-90-5	1.0
Copper - 7440-50-8	1.0
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	-	X	X	-

7440-50-8			
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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)
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 7440-50-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 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
1,3-Propane sultone - 1120-71-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Ethyl propionate 105-37-3	X	X	X
Aluminum 7429-90-5	X	X	X
Copper 7440-50-8	X	X	X
Graphite 7782-42-5	X	X	X
Ethylene carbonate 96-49-1	-	X	X
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X	-	-
1,3-Propane sultone 1120-71-4	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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 1-800-572-6501.

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Revision Note No information available.

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

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 22-Jul-2025

Revision date 22-Jul-2025

Revision Number 1

1. Identification

Product identifier

Product Name Rechargeable Li-ion Battery L25B4PK0 by BYD

Other means of identification

Product Code(s) 1865016

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 Lenovo LNB laptops

Supplier Address

Songtao Road 696
shanghai
shanghai
201203
CN

Emergency telephone number

Supplier Phone Number Phone:18116118603

24 Hour Emergency Phone Number 18116118603

Emergency Telephone No information available

2. Hazard(s) identification

Classification of the substance or mixture

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

Label elements



Danger

Hazard statements

Harmful if swallowed.
Causes severe skin burns and eye damage.
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.
Do not eat, drink or smoke when using this product.
Do not breathe dust.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER or doctor.
Specific treatment (see supplemental first aid instructions on this label).

Eyes

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

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.
IF ON SKIN: Wash with plenty of water and soap.
If skin irritation or rash occurs: Get medical advice and attention.
Take off contaminated clothing and wash it before reuse.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
Rinse mouth.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

87 % of the mixture consists of ingredient(s) of unknown acute oral 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 Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Graphite	7782-42-5	25	-	-
Propylene carbonate	108-32-7	10	-	-
Propyl propionate	106-36-5	10	-	-
Ethylene carbonate	96-49-1	10	-	-
Copper	7440-50-8	10	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	5	-	-
Nickel	7440-02-0	5	-	-
Aluminum foil	7429-90-5	5	-	-
Carbon black	1333-86-4	2	-	-

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. In case of rupture:

Inhalation

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

Eye contact

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

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention. May cause an allergic skin reaction.

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

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

Burning sensation. Itching. Rashes. Hives.

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

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

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. 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 Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

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

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. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

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. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. 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. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.

8. Exposure controls/personal protection

Control Parameters
Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.1 mg/m ³ ; fume IDLH: 100 mg/m ³ dust, fume and mist
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.015 mg/m ³
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ ; total dust TWA: 5 mg/m ³ ; respirable dust
Carbon black 1333-86-4	TWA: 3 mg/m ³ inhalable particulate matter	TWA: 3.5 mg/m ³ (vacated) TWA: 3.5 mg/m ³	TWA: 3.5 mg/m ³ ; TWA: 0.1 mg/m ³ ; Carbon black in presence of Polycyclic aromatic hydrocarbons PAH IDLH: 1750 mg/m ³

Chemical name	Alberta	British Columbia	Ontario	Quebec
Graphite 7782-42-5	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable particulate matter	TWAEV: 2 mg/m ³ ; respirable dust
Copper	TWA: 0.2 mg/m ³ ; fume	TWA: 1 mg/m ³ ; dust and	TWA: 0.2 mg/m ³ ; fume	TWAEV: 0.2 mg/m ³ ;

7440-50-8	TWA: 1 mg/m ³ ; dust and mist	mist TWA: 0.2 mg/m ³ ; fume	TWA: 1 mg/m ³ ; dust and mist	fume TWAEV: 1 mg/m ³ ; dust and mist
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWAEV: 2.5 mg/m ³ ;
Nickel 7440-02-0	TWA: 1.5 mg/m ³ ;	TWA: 0.05 mg/m ³ ;	TWA: 1 mg/m ³ ; inhalable fraction	TWAEV: 1.5 mg/m ³ ; inhalable dust
Aluminum foil 7429-90-5	TWA: 10 mg/m ³ ; dust	TWA: 1.0 mg/m ³ ; respirable	TWA: 1 mg/m ³ ; respirable particulate matter	TWAEV: 10 mg/m ³ ;
Carbon black 1333-86-4	TWA: 3.5 mg/m ³ ;	TWA: 3 mg/m ³ ; inhalable	TWA: 3 mg/m ³ ; inhalable particulate matter	TWAEV: 3 mg/m ³ ; inhalable dust

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Graphite	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable particulate matter
Copper	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume
Phosphate(1-), hexafluoro-, lithium	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;
Nickel	TWA: 1.5 mg/m ³ ; inhalable particulate matter	TWA: 1.5 mg/m ³ ; inhalable fraction	TWA: 1.5 mg/m ³ ; inhalable particulate matter	TWA: 1.5 mg/m ³ ; inhalable particulate matter
Aluminum foil	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable fraction	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable particulate matter
Carbon black	TWA: 3 mg/m ³ ; inhalable particulate matter	TWA: 3 mg/m ³ ; inhalable fraction	TWA: 3 mg/m ³ ; inhalable particulate matter	TWA: 3 mg/m ³ ; inhalable particulate matter

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Graphite	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 20 mppcf; TWA: 30 mppcf; TWA: 10 mg/m ³ ;
Copper	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 3 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume STEL: 3 mg/m ³ ; dust and mist	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.2 mg/m ³ ; fume STEL: 2 mg/m ³ ; dust and mist
Phosphate(1-), hexafluoro-, lithium	-	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ; STEL: 5 mg/m ³ ;	TWA: 2.5 mg/m ³ ; STEL: 2.5 mg/m ³ ;
Nickel	TWA: 1.5 mg/m ³ ; inhalable fraction STEL: 3 mg/m ³ ; inhalable fraction Designated substance	TWA: 1.5 mg/m ³ ; inhalable particulate matter	TWA: 1.5 mg/m ³ ; inhalable fraction STEL: 3 mg/m ³ ; inhalable fraction Designated Chemical Substance	TWA: 1 mg/m ³ ; STEL: 3 mg/m ³ ;
Aluminum foil	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	-

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Carbon black	TWA: 3.5 mg/m ³ ; STEL: 7 mg/m ³ ;	TWA: 3 mg/m ³ ; inhalable particulate matter	TWA: 3.5 mg/m ³ ; STEL: 7 mg/m ³ ;	TWA: 3.5 mg/m ³ ; STEL: 7 mg/m ³ ;

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
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 Tight sealing safety goggles. Face protection shield.
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 information 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)	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	19.71	

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	Exposure to air or moisture over prolonged periods.
Incompatible materials	Acids. Bases. Oxidizing agent.
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. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Corrosive. (based on

components). Causes burns. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

Acute toxicity Harmful if swallowed.

Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	966.00 mg/kg
ATEmix (dermal)	5,782.50 mg/kg
ATEmix (inhalation-gas)	45,000.00 ppm
ATEmix (inhalation-vapor)	110.00 mg/l
ATEmix (inhalation-dust/mist)	15.00 mg/l

Unknown acute toxicity

87 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite 7782-42-5	-	-	> 2000 mg/m ³ (Rat) 4 h
Propylene carbonate 108-32-7	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Propyl propionate 106-36-5	= 10331 mg/kg (Rat)	= 16 mL/kg (Rabbit)	-
Ethylene carbonate 96-49-1	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 h
Copper 7440-50-8	-	-	> 5.11 mg/L (Rat) 4 h
Nickel 7440-02-0	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat) 1 h
Aluminum foil 7429-90-5	-	-	> 0.888 mg/L (Rat) 4 h
Carbon black 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 severe skin burns and eye damage.

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

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
Phosphate(1-), hexafluoro-, lithium 21324-40-3	A4 - Not Classifiable as a Human Carcinogen	-	-	-
Nickel 7440-02-0	A5 - Not Suspected as a Human Carcinogen	Group 2B	Reasonably Anticipated	X
Aluminum foil 7429-90-5	A4 - Not Classifiable as a Human Carcinogen	-	-	-
Carbon black 1333-86-4	A3 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 7782-42-5	-	96h LC50: > 100 mg/L (Danio rerio)	-	-
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)
Ethylene carbonate 96-49-1	-	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	-	-
Copper 7440-50-8	72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L	-	48h EC50: = 0.03 mg/L (Daphnia magna)

	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata)	(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)		
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
Propylene carbonate 108-32-7	0.48
Ethylene carbonate 96-49-1	0.11

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"

<u>DOT</u>	NOT REGULATED
Hazard Class	N/A
<u>TDG</u>	Not applicable
<u>MEX</u>	Not applicable
<u>ICAO (air)</u>	
UN number or ID number	UN3480
UN proper shipping name	LITHIUM ION BATTERIES
Transport hazard class(es)	9
Description	.?1 LITHIUM ION BATTERIES.?2
<u>IATA</u>	
UN number or ID number	UN3480
UN proper shipping name	LITHIUM ION BATTERIES
Transport hazard class(es)	9
ERG Code	12FZ
Description	.?1 LITHIUM ION BATTERIES.?2
<u>IMDG</u>	Not applicable
Transport hazard class(es)	N/A
Marine pollutant indicator	NP

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
- AIRC** - 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 %
Copper - 7440-50-8	1.0
Aluminum foil - 7429-90-5	1.0
Nickel - 7440-02-0	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)
Aluminum foil 7429-90-5	Hazardous air pollutants (HAPs)	-

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 7440-50-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Nickel 7440-02-0	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:.

Chemical name	California Proposition 65
Nickel - 7440-02-0	Carcinogen
Carbon black - 1333-86-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Graphite 7782-42-5	X	X	X
Ethylene carbonate 96-49-1	-	X	X
Copper 7440-50-8	X	X	X
Ethyl propionate 105-37-3	X	X	X
Propyl propionate 106-36-5	-	X	X
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X	-	-
Aluminum foil 7429-90-5	X	X	X
Nickel 7440-02-0	X	X	X
Carbon black 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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Revision date 22-Jul-2025

Revision Note No information available.

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

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 22-Jul-2025

Revision date 22-Jul-2025

Revision Number 1

1. Identification

Product identifier

Product Name Rechargeable Li-ion Battery L25M4PK0 by Vendor - by Simple

Other means of identification

Product Code(s) 1865017

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 Lenovo LNB laptops

Supplier Address

Songtao Road 696
shanghai
shanghai
201203
CN

Emergency telephone number

Supplier Phone Number Phone:18116118603

24 Hour Emergency Phone Number 18116118603

Emergency Telephone No information available

2. Hazard(s) identification

Classification of the substance or mixture

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

Label elements



Danger

Hazard statements

Harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements - Prevention

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

Get medical advice/attention if you feel unwell.
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 contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice and attention.

Precautionary Statements - Disposal

Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

Unknown acute toxicity

90.92 % 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

May be harmful if swallowed. 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 Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Graphite	7782-42-5	21.11	-	-

Aluminum	7429-90-5	7.67	-	-
Copper	7440-50-8	5.58	-	-
Propylene carbonate	108-32-7	2.77	-	-
Ethylene carbonate	96-49-1	2.77	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1.54	-	-

4. First-aid measures

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. First aid is upon rupture of sealed battery. In case of rupture:
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. 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.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.
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 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	Causes damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. Fire-fighting measures

<u>Suitable Extinguishing Media</u>	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.
<u>Specific hazards arising from the chemical</u>	No information available.
<u>Explosion data</u>	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
<u>Special protective equipment and precautions for fire-fighters</u>	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.

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. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

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. 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
Graphite 7782-42-5	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
Aluminum	TWA: 1 mg/m ³ respirable	TWA: 15 mg/m ³ total dust	TWA: 10 mg/m ³ ; total dust

7429-90-5	particulate matter	TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 5 mg/m ³ ; respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.1 mg/m ³ ; fume IDLH: 100 mg/m ³ dust, fume and mist
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F

Chemical name	Alberta	British Columbia	Ontario	Quebec
Graphite 7782-42-5	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable particulate matter	TWAEV: 2 mg/m ³ ; respirable dust
Aluminum 7429-90-5	TWA: 10 mg/m ³ ; dust	TWA: 1.0 mg/m ³ ; respirable	TWA: 1 mg/m ³ ; respirable particulate matter	TWAEV: 10 mg/m ³ ;
Copper 7440-50-8	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist	TWAEV: 0.2 mg/m ³ ; fume TWAEV: 1 mg/m ³ ; dust and mist
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWAEV: 2.5 mg/m ³ ;

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Graphite	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable particulate matter
Aluminum	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable fraction	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable particulate matter
Copper	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume
Phosphate(1-), hexafluoro-, lithium	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Graphite	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 20 mppcf; TWA: 30 mppcf; TWA: 10 mg/m ³ ;
Aluminum	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	-
Copper	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 3 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume STEL: 3 mg/m ³ ; dust and mist	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.2 mg/m ³ ; fume STEL: 2 mg/m ³ ; dust and mist

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Phosphate(1-), hexafluoro-, lithium	-	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ; STEL: 5 mg/m ³ ;	TWA: 2.5 mg/m ³ ; STEL: 2.5 mg/m ³ ;

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
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.

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

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)	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	6.38165

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).
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 Harmful by skin contact.

Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	3,748.40 mg/kg
ATEmix (dermal)	1,768.80 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

90.92 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite 7782-42-5	-	-	> 2000 mg/m ³ (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
Propylene carbonate 108-32-7	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-
Ethylene carbonate 96-49-1	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 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 Based on available data, the classification criteria are not met.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Aluminum 7429-90-5	A4 - Not Classifiable as a Human Carcinogen	-	-	-
Phosphate(1-), hexafluoro-, lithium 21324-40-3	A4 - Not Classifiable as a Human Carcinogen	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A4 - Not classifiable as a human carcinogen

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 7782-42-5	-	96h LC50: > 100 mg/L (Danio rerio)	-	-
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)
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)
Ethylene carbonate 96-49-1	-	96h LC50: > 100 mg/L (Oncorhynchus mykiss)	-	-

Persistence and degradability No information available.

Bioaccumulation

Component Information

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

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

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
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 %
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 7440-50-8	-	X	X	-

CAA (Clean Air Act)

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

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 7440-50-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Graphite 7782-42-5	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
Dimethyl carbonate 616-38-6	X	X	X
Phosphate(1-), hexafluoro-, lithium 21324-40-3	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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End of Safety Data Sheet