SAFETY DATA SHEET

Issuing Date 24-Aug-2020

Revision Date 24-Aug-2020

Revision Number 2

NGHS / English



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1. IDENTIFICATION

Product identifier	
Product Name	Rechargeable Li-ion Battery L18M3P73 by Simplo
Other means of identification	
Product Code(s)	1600017
Recommended use of the chemica	I and restrictions on use
Recommended Use	Lithium Ion Battery
Restrictions on use	No information available
Details of the supplier of the safety	<u>/ data sheet</u>
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 - Dermal	Category 4
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 Solid

Physical state Solid

Odor No information available

GHS Label elements, including precautionary statements

Danger

Hazard statements Harmful in contact with skin 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

Do not eat, drink or smoke when using this pr

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 Call a POISON CENTER or doctor if you feel unwell 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

May be harmful if swallowed. Very toxic to aquatic life with long lasting effects.



Unknown acute toxicity

94.06 % of the mixture consists of ingredient(s) of unknown toxicity 87.3 % of the mixture consists of ingredient(s) of unknown acute oral toxicity 92.62 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity 94.06 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas) 94.06 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor) 94.06 % 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	42	-	-
Graphite	7782-42-5	22.3	-	-
Copper	7440-50-8	7.73	-	-
Aluminum	7429-90-5	5.33	-	-
Bisphenol A - Phosgene copolymer	25971-63-5	3.96	-	-
Ethylene carbonate	96-49-1	2.44	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1.44	-	-
Nickel	7440-02-0	0.59	-	-

4. FIRST AID MEASURES

Description of first aid measures

General advice Inhalation	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.
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. 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. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	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

Indication of any immediate medica	al 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 Impac Sensitivity to Static Discharge	t None. None.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Itching. Rashes. Hives. Burning sensation.

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 containm	ent and cleaning up
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

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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 T	ĽV	0	SHA PEL		NIOSH IDLH
Lithium Cobalt Oxide (Col 12190-79-3	LiO2)	TWA: 0.02 r	0		-		
Graphite 7782-42-5		TWA: 2 mg/m³ i particulate matte except graphit	er all forms te fibers	s TWA: 5 m fractio (vacated) respirab (vacated) TV dust (vacated respirable TWA: 15	mg/m ³ total dust ynthetic ng/m ³ respirable on synthetic TWA: 2.5 mg/m ³ le dust natural VA: 10 mg/m ³ total t synthetic) TWA: 5 mg/m ³ fraction synthetic 5 mppcf natural	TWA:	DLH: 1250 mg/m ³ 2.5 mg/m ³ respirable dust
Copper 7440-50-8		TWA: 0.2 mg/r		TWA: 1 mg (vacated) T dust	1 mg/m ³ fume /m ³ dust and mist WA: 0.1 mg/m ³ Cu , fume, mist	TWA: ´ TW	100 mg/m ³ dust, fume and mist 1 mg/m ³ dust and mist /A: 0.1 mg/m ³ fume
Aluminum 7429-90-5		TWA: 1 mg/m³ n particulate r		TWA: 5 m (vacated) TV (vacated	mg/m ³ total dust ng/m ³ respirable fraction VA: 15 mg/m ³ total dust) TWA: 5 mg/m ³ rable fraction		: 10 mg/m ³ total dust mg/m ³ respirable dust
Phosphate(1-), hexafluo lithium 21324-40-3	oro-,	TWA: 2.5 m	g/m³ F	TWA:	2.5 mg/m ³ F TWA: 2.5 mg/m ³	l	DLH: 250 mg/m ³ F
Nickel 7440-02-0		TWA: 1.5 m	ng/m³	TW. (vacated	A: 1 mg/m³) TWA: 1 mg/m³	1	IDLH: 10 mg/m ³ ГWA: 0.015 mg/m ³
Chemical name		Alberta	British C	Columbia	Ontario TWAE	V	Quebec
Lithium Cobalt Oxide (CoLiO2) 12190-79-3		VA: 0.02 mg/m ³		02 mg/m ³	TWA: 0.02 mg/i		TWA: 0.02 mg/m ³
Graphite 7782-42-5	٦	FWA: 2 mg/m ³	TWA: 2	2 mg/m³	TWA: 2 mg/m	3	TWA: 2 mg/m ³
Copper 7440-50-8		WA: 0.2 mg/m ³ ГWA: 1 mg/m ³		1 mg/m³ .2 mg/m³	TWA: 0.2 mg/n TWA: 1 mg/m		TWA: 0.2 mg/m ³ TWA: 1 mg/m ³
Aluminum 7429-90-5	Т	WA: 10 mg/m ³	TWA: 1	.0 mg/m³	TWA: 1 mg/m	3	TWA: 10 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3		WA: 2.5 mg/m ³		.5 mg/m³	TWA: 2.5 mg/n		TWA: 2.5 mg/m ³
Nickel	Т	WA: 1.5 mg/m ³	TWA: 0.	05 mg/m³	TWA: 1 mg/m	3	TWA: 1.5 mg/m ³



7440-02-0	
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	<u> </u>
Engineering controls	Showers Eyewash stations Ventilation systems.
Individual protection measures, s	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	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

internation on suble physical a		
Physical state	Solid	
Appearance	Solid	
Odor	No information available	
Color	No information available	
Odor Threshold	No information available	
Property	Values	Remarks Method
рН	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/w	/ater1	
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

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. May be harmful if swallowed.
Symptoms related to the physical, o	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)	3,677.10 mg/kg
ATEmix (dermal)	1,537.50 mg/kg

Unknown acute toxicity

87.3 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

92.62 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

94.06 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

94.06 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

94.06 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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
Ethylene carbonate	= 10 g/kg (Rat)	-	> 730 mg/m³ (Rat)8 h
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat)1 h

94.06 % of the mixture consists of ingredient(s) of unknown toxicity

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	Х
Nickel 7440-02-0	-	Group 2B	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists) A3 - Animal Carcinogen IARC (International Agency for Research on Cancer) Group 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. No information available. STOT - single exposure STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. No information available. Aspiration hazard



12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to	Daphnia Magna (Water
	, , ,	,	Microorganisms	Flea)
Graphite	-	96h LC50: > 100 mg/L	-	-
· · · · · · · · · · · · · · · · · · ·		(Danio rerio)		
Copper	96h EC50: 0.031 - 0.054	96h LC50: 0.0068 -	-	48h EC50: = 0.03 mg/L
	mg/L	0.0156 mg/L (Pimephales		(Daphnia magna)
	(Pseudokirchneriella	promelas) 96h LC50: <		
	subcapitata) 72h EC50:	0.3 mg/L (Pimephales		
	0.0426 - 0.0535 mg/L	promelas) 96h LC50: =		
	(Pseudokirchneriella	0.052 mg/L		
	subcapitata)	(Oncorhynchus mykiss)		
		96h LC50: = 0.112 mg/L		
		(Poecilia reticulata) 96h		
		LC50: = 0.2 mg/L		
		(Pimephales promelas)		
		96h LC50: = 0.3 mg/L		
		(Cyprinus carpio) 96h		
		LC50: = 0.8 mg/L		
		(Cyprinus carpio) 96h		
		LC50: = 1.25 mg/L		
		(Lepomis macrochirus)		
Ethylene carbonate	-	96h LC50: > 100 mg/L	-	-
		(Oncorhynchus mykiss)		
Nickel	96h EC50: 0.174 - 0.311	96h LC50: = 1.3 mg/L	-	48h EC50: = 1 mg/L
	mg/L	(Cyprinus carpio) 96h		(Daphnia magna) 48h
	(Pseudokirchneriella	LC50: = 10.4 mg/L		EC50: > 100 mg/L
	subcapitata) 72h EC50: =			(Daphnia magna)
	0.18 mg/L	LC50: > 100 mg/L		
	(Pseudokirchneriella	(Brachydanio rerio)		
	subcapitata)			

Persistence and Degradability

No information available.

Bioaccumulation

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)	Toxic
12190-79-3	
Aluminum	Ignitable powder
7429-90-5	
Nickel	Toxic powder
7440-02-0	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 contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"
DOT Proper Shipping Name Hazard Class Emergency Response Guide Number	NOT REGULATED NON-REGULATED N/A 147
TDG	Not regulated
MEX	Not regulated
ICAO	Not regulated
IATA Proper Shipping Name Hazard Class	Not regulated NON REGULATED N/A
IMDG/IMO Hazard Class EmS-No.	Not regulated N/A F-A, S-I
RID	Not regulated
ADR	Not regulated
ADN	Not regulated
	15. REGULATORY INFORMATION

15. REGULATORT 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

ternational Inventories	
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Contact supplier for inventory compliance status.
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

<u>SARA 313</u>

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	42	0.1
Copper - 7440-50-8	7440-50-8	7.73	1.0
Aluminum - 7429-90-5	7429-90-5	5.33	1.0
Nickel - 7440-02-0	7440-02-0	0.59	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		Х	Х	
7440-50-8				
Nickel		Х	Х	
7440-02-0				

<u>CERCLA</u>

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive



Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ
Nickel	100 lb		RQ 2270 kg final RQ RQ 100 lb final RQ
7440-02-0			RQ 45.4 kg final RQ

Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

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)

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	Х		Х	Х	Х
Graphite 7782-42-5	Х	X	Х		
Copper 7440-50-8	Х	X	Х	Х	Х
Aluminum 7429-90-5	Х	Х	Х	Х	
Ethylene carbonate 96-49-1		Х	Х		
Phosphate(1-), hexafluoro-, lithium 21324-40-3	Х				
Nickel 7440-02-0	Х	X	Х	Х	Х

16. OTHER INFORMATION

<u>NFPA</u>	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 St 23 British / Latham, N 1-800-572-	American Blvd. Y 12110		
Issuing Date	24-Aug-20	20		
Revision Date	24-Aug-2020			
Revision Note	No informa	ation 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 L18L3P73 by LGC
Other means of identification	
Product Code(s)	1600014
Recommended use of the chemica	I 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

Z. NAZARDO IDENTIFICATION

Classification

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 Solid

Physical state Solid

Odor No information available

GHS Label elements, including precautionary statements

Danger

Hazard statements

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 Contaminated work clothing must not be allowed out of the workplace Do not breathe dust/fume/gas/mist/vapors/spray Wash face, hands and any exposed skin thoroughly after handling 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) Skin

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

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Causes mild skin irritation. Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity

99 % of the mixture consists of ingredient(s) of unknown toxicity 70 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

- 99 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable.

<u>Mixture</u>

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Nickel	7440-02-0	30	-	-
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	30	-	-
Copper	7440-50-8	7	-	-
Aluminum foil	7429-90-5	3	-	-

4. FIRST AID MEASURES

Description of first aid measures

General advice Inhalation	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.		
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.		
Skin contact	Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.		
Ingestion	Clean mouth with water and drink afterwards plenty of water.		
Most important symptoms and effects, both acute and delayed			
Symptoms	Itching. Rashes. Hives.		
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 Impac	ct None.		
Sensitivity to Static Discharge	None.		
Special protective equipment for	Firefighters should wear self-contained		

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.	
Other Information	Refer to protective measures listed in Sections 7 and 8.	
Methods and material for containment and cleaning up		
Methods for containment	Prevent further leakage or spillage if safe to do so.	
Methods for cleaning up	Pick up and transfer to properly labeled containers.	

7. HANDLING AND STORAGE

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

Storage ConditionsKeep 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
Nickel	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³	IDLH: 10 mg/m ³
7440-02-0		(vacated) TWA: 1 mg/m ³	TWA: 0.015 mg/m ³
Lithium Cobalt Oxide (CoLiO2) 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		TWA: 1 mg/m ³ respirable		TWA: 15 r	mg/m ³ total dust	TW	A: 10 mg/m ³	total dust
7429-90-5		particulate matter		TWA: 5 m	g/m ³ respirable	TWA:	5 mg/m ³ res	pirable dust
				fraction				
				(vacated) TWA: 15 mg/m ³ total				
					dust			
				(vacated)) TWA: 5 mg/m³			
				respir	able fraction			
Chemical name		Alberta	British C	Columbia	Ontario TWAE	V	Que	bec
Nickel	T	WA: 1.5 mg/m ³	TWA: 0.0)5 mg/m³	TWA: 1 mg/m	3	TWA: 1.	5 mg/m³
7440-02-0		-		-				-
Lithium Cobalt Oxide	T۷	VA: 0.02 mg/m ³	TWA: 0.0	02 mg/m ³	TWA: 0.02 mg/	m³	TWA: 0.0)2 mg/m ³
(CoLiO2)		-		-				
12190-79-3								
Copper	T	WA: 0.2 mg/m ³	TWA: 1	mg/m³	TWA: 0.2 mg/r	n ³	TWA: 0.2	2 mg/m ³
7440-50-8	٦	ΓWA: 1 mg/m ³	TWA: 0.	2 mg/m ³	TWA: 1 mg/m	3	TWA: 1	mg/m ³
Aluminum foil	Т	WA: 10 mg/m ³	TWA: 1.	0 mg/m³	TWA: 1 mg/m	3	TWA: 10) mg/m ³
7429-90-5		-						

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.		
Skin and body protection	Wear suitable protective 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	Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.		

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties				
Physical state	Solid			
Appearance	Solid			
Odor	No information available			
Color	No information available			
Odor Threshold	No information available			
Property_	Values	Remarks Method		
<u>Property</u> pH	<u>Values</u> No data available	Remarks Method None known		
pH	No data available	None known		
pH Melting / freezing point	No data available No data available	None known None known		
pH Melting / freezing point Boiling point / boiling range	No data available No data available No data available	None known None known None known		



Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/wat		
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	

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	None known based on information supplied.

Hazardous Decomposition Products Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Particle Size Distribution

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.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available. May cause sensitization by skin contact. (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.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Itching. Rashes. Hives.

Numerical measures of toxicity

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document . ATEmix (oral) 35,454.50 mg/kg

Unknown acute toxicity 99 % of the mixture consists of ingredient(s) of unknown toxicity

70 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

99 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

99 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat)1 h
Lithium Cobalt Oxide (CoLiO2)	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat)4 h

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

Skin corrosion/irritation	No information available.	
Serious eye damage/eye irritation	No information available.	
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
Nickel	-	Group 2B	Reasonably Anticipated	Х
7440-02-0				
Lithium Cobalt Oxide (CoLiO2)	A3	Group 2B	Reasonably Anticipated	Х
12190-79-3				

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	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Nickel	96h EC50: 0.174 - 0.311 mg/L (Pseudokirchneriella subcapitata) 72h EC50: = 0.18 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 1.3 mg/L (Cyprinus carpio) 96h LC50: = 10.4 mg/L (Cyprinus carpio) 96h LC50: > 100 mg/L (Brachydanio rerio)	-	48h EC50: = 1 mg/L (Daphnia magna) 48h EC50: > 100 mg/L (Daphnia magna)
Copper	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 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 (Pimephales promelas) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus)	-	48h EC50: = 0.03 mg/L (Daphnia magna)

Persistence and Degradability	No information available.
Bioaccumulation	There is no data for this product.
Mobility	No information available.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.



141

Contaminated packaging

Do not reuse empty containers.

California Waste Codes

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

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

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 Iisted 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 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> Proper Shipping Name Hazard Class Emergency Response Guide Number	NOT REGULATED NON-REGULATED N/A 147
TDG	Not regulated
<u>MEX</u>	Not regulated
ICAO	Not regulated
IATA Proper Shipping Name Hazard Class	Not regulated NON REGULATED N/A
IMDG/IMO Hazard Class EmS-No.	Not regulated N/A F-A, S-I
RID	Not regulated
ADR	Not regulated
<u>ADN</u>	Not regulated

15. REGULATORY INFORMATION

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

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories TSCA DSL/NDSL EINECS/ELINCS	Contact supplier for inventory compliance status. Contact supplier for inventory compliance status. Contact supplier for inventory compliance status.
ENCS KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status. 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 %
Nickel - 7440-02-0	7440-02-0	30	0.1
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	30	0.1
Copper - 7440-50-8	7440-50-8	7	1.0
Aluminum foil - 7429-90-5	7429-90-5	3	1.0

SARA 311/312 Hazard Categories

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

CWA (Clean Water Act)

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

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel 7440-02-0		Х	Х	



1600014 - Rechargeable Li-ion Battery L18L3P73 by LGC

Copper	Х	Х	
7440-50-8			

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

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
Nickel 7440-02-0	Х	X	Х	X	Х
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Х		Х	x	X
Copper 7440-50-8	Х	X	Х	Х	Х
Aluminum foil 7429-90-5	Х	X	Х	Х	

16. OTHER INFORMATION

<u>NFPA</u>	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 Ste 23 British A Latham, N 1-800-572-	American Blvd. Y 12110		
Issuing Date	24-Aug-202	20		
Revision Date	24-Aug-2020			
Revision Note	No informa	tion 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 24-Aug-2020

Revision Date 24-Aug-2020

Revision Number 2

NGHS / English



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1. IDENTIFICATION

Company Emergency Phone Number	18116118603
Emergency telephone number	
E-mail	yuanbb1@lenovo.com
Telephone	Phone:18116118603
	shanghai shanghai 201203 CN
Address	Songtao Road 696
Supplier Identification	Lenovo LNB laptops
Details of the supplier of the safety	data sheet
Restrictions on use	No information available
Recommended Use	Lithium Ion Battery
Recommended use of the chemical	and restrictions on use
Product Code(s)	1600012
Other means of identification	
Product Name	Rechargeable Li-ion Battery L18C3P72 by Celxpert
Product identifier	

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 2
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 Solid

Physical state Solid

Odor No information available

GHS Label elements, including precautionary statements

Danger

Hazard statements Toxic in contact with skin Causes skin irritation Causes serious 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

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 Immediately call a POISON CENTER or doctor

Skin

IF ON SKIN: Wash with plenty of water and soap Call a POISON CENTER or doctor if you feel unwell Take off immediately all contaminated clothing and wash it before reuse If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information



May be harmful if swallowed. Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity

98.19 % of the mixture consists of ingredient(s) of unknown toxicity 67.12 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

95.06 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

98.19 % 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	42.28	-	-
Aluminum foil	7429-90-5	9.68	-	-
Copper	7440-50-8	8.6	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	3.13	-	-
Ethylene carbonate	96-49-1	3.09	-	-
Nickel	7440-02-0	0.45	-	-

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: Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area.
Skin contact	Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. 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. Wear personal protective clothing (see section 8). Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed				
Symptoms	Burning sensation. Itching. Rashes. Hives.			
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 Impac Sensitivity to Static Discharge	t None. 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. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when using this



product. In case of insufficient ventilation, wear suitable respiratory equipment.

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 T	LV	03	SHA PEL	N	NIOSH IDLH
Lithium Cobalt Oxide (CoL 12190-79-3	_iO2)	TWA: 0.02 mg/m ³			-		
Aluminum foil		TWA: 1 mg/m ³ I	respirable	TWA: 15 mg/m ³ total dust		TWA: 10) mg/m ³ total dust
7429-90-5			particulate matter		ng/m ³ respirable		g/m ³ respirable dust
				fraction			
		1		(vacated) TWA: 15 mg/m ³ total			
				dust			
) TWA: 5 mg/m ³		
		T MA 0.0 (2.6		able fraction		
Copper 7440-50-8		TWA: 0.2 mg/n	n° tume		1 mg/m ³ fume /m ³ dust and mist	IDLH: 10	0 mg/m ³ dust, fume and mist
7440-50-8					WA: $0.1 \text{ mg/m}^3 \text{ Cu}$	T\//A · 1 m	g/m ³ dust and mist
					, fume, mist		0.1 mg/m ³ fume
Phosphate(1-), hexafluo	ro	TWA: 2.5 mg	n/m ³ F	TWA: 2.5 mg/m ³ F			H: 250 mg/m ³ F
lithium			/ u 2.0 mg/m 1		(vacated) TWA: 2.5 mg/m ³		00g,
21324-40-3				(- 5		
Nickel		TWA: 1.5 mg/m ³			A: 1 mg/m ³	ID	LH: 10 mg/m ³
7440-02-0				• • • • • • • • • • • • • • • • • • •) TWA: 1 mg/m ³		A: 0.015 mg/m ³
Chemical name		Alberta	British C	Columbia	Ontario TWAE		Quebec
Lithium Cobalt Oxide	T۷	VA: 0.02 mg/m ³	TWA: 0.0	02 mg/m³	TWA: 0.02 mg/	m ³	TWA: 0.02 mg/m ³
(CoLiO2)							
12190-79-3				0		. 2	
Aluminum foil 7429-90-5	I	WA: 10 mg/m ³	1 VVA. 1.	0 mg/m ³	TWA: 1 mg/m	19	TWA: 10 mg/m ³
Copper	T	WA: 0.2 mg/m ³	TWA: 1 mg/m ³ TWA:		TWA: 0.2 mg/r	m ³	TWA: 0.2 mg/m ³
7440-50-8	TWA: 0.2 mg/m ³		TWA: 0.2 mg/m ³		TWA: 0.2 mg/m ³		TWA: 1 mg/m ³
Phosphate(1-),		WA: 2.5 mg/m ³		5 mg/m ³	TWA: 2.5 mg/r		TWA: 2.5 mg/m ³
hexafluoro-, lithium		5		5	5		Ŭ
21324-40-3							
Nickel	T	WA: 1.5 mg/m³	TWA: 0.0	05 mg/m³	TWA: 1 mg/m	1 ³	TWA: 1.5 mg/m ³
7440-02-0							

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Solid Solid

No information available No information available No information available

Physical state	
Appearance	
Odor	
Color	
Odor Threshold	

Property	Values
рН	No data available
Melting / freezing point	No data available
Boiling point / boiling range	No data available
Flash Point	No data available
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Flammability Limit in Air	
Upper flammability limit	No data available
Lower flammability limit	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Water Solubility	Insoluble in water
Solubility(ies)	No data available
Partition coefficient: n-octanol/wate	r 1
Autoignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
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

Molecular Weight VOC Content (%) Liquid Density Bulk Density Particle Size Particle Size Distribution

No information available No information available

Remarks Method

None known None known None known None known None known None known

None known None known None known

None known

None known None known None known None known



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 damage. (based on components). Severely irritating to eyes. May cause burns. May cause irreversible damage to eyes.	
Skin contact	Specific test data for the substance or mixture is not available. Toxic in contact with skin. Causes skin irritation. May cause sensitization by skin contact. (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. May be harmful if swallowed.	
Symptoms related to the physical, chemical and toxicological characteristics		
Symptoms	Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes.	
Numerical measures of toxicity		
Acute Toxicity		
The following values are calculated ATEmix (oral) ATEmix (dermal)	based on chapter 3.1 of the GHS document.4,848.10 mg/kg.473.50 mg/kg	
95.06 % of the mixture consists of 98.19 % of the mixture consists of	98.19 % of the mixture consists of ingredient(s) of unknown toxicity ingredient(s) of unknown acute oral toxicity ingredient(s) of unknown acute dermal toxicity ingredient(s) of unknown acute inhalation toxicity (gas) ingredient(s) of unknown acute inhalation toxicity (vapor)	

98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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
Ethylene carbonate	= 10 g/kg (Rat)	-	> 730 mg/m³ (Rat)8 h
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat)1 h

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

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 burns. Risk of serious damage to eyes.
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	A3	Group 2B	Reasonably Anticipated	Х
(CoLiO2)				
12190-79-3				
Nickel	-	Group 2B	Reasonably Anticipated	Х
7440-02-0				

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	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper	96h EC50: 0.031 - 0.054		-	48h EC50: = 0.03 mg/L
	mg/L	0.0156 mg/L (Pimephales		(Daphnia magna)



	(Pseudokirchneriella	promelas) 96h LC50: <		
	subcapitata) 72h EC50:	0.3 mg/L (Pimephales		
	0.0426 - 0.0535 mg/L	promelas) 96h LC50: =		
	(Pseudokirchneriella	0.052 mg/L		
	subcapitata)	(Oncorhynchus mykiss)		
	,	96h LC50: = 0.112 mg/L		
		(Poecilia reticulata) 96h		
		LC50: = 0.2 mg/L		
		(Pimephales promelas)		
		96h LC50: = 0.3 mg/L		
		(Cyprinus carpio) 96h		
		LC50: = 0.8 mg/L		
		(Cyprinus carpio) 96h		
		LC50: = 1.25 mg/L		
		(Lepomis macrochirus)		
Ethylene carbonate	-	96h LC50: > 100 mg/L	-	-
		(Oncorhynchus mykiss)		
Nickel	96h EC50: 0.174 - 0.311	96h LC50: = 1.3 mg/L	-	48h EC50: = 1 mg/L
	mg/L	(Cyprinus carpio) 96h		(Daphnia magna) 48h
	(Pseudokirchneriella	LC50: = 10.4 mg/L		EC50: > 100 mg/L
	subcapitata) 72h EC50: =			(Daphnia magna)
	0.18 mg/L	LC50: > 100 mg/L		· · · · · · · · · · · · · · · · · · ·
	(Pseudokirchneriella	(Brachydanio rerio)		
	subcapitata)	· · · ·		

Persistence and Degradability	No information available.
Bioaccumulation	There is no data for this product.
Mobility	No information available.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

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)	Toxic
12190-79-3	
Aluminum foil	Ignitable powder
7429-90-5	
Nickel	Toxic powder
7440-02-0	Ignitable powder

Note:The transportation of primary lithium cells and batteries: Civil Aviation Organization, International Air Transport Dangerous Goods Code and the US Department of Tr meet the following criteria for shipment: 1. Air shipm listed in Special Provision A45 of the International Air Goods Regulations. 2. Meet the requirements for the listed in 49 CFR 173.185. 3. The transport of primary passenger aircraft. Refer to the Federal Register Dec Materials; Prohibited on the Transportation of Primary Passenger Aircraft; Final Rule) Lithium batteries shipped as "Lithium batteries", "Lithiu or "Lithium batteries contained in equipment" may not when shipped in accordance with "special provision A4 188 of IMO-IMDG Code"DOT Proper Shipping Name Hazard Class Emergency Response GuideNOT REGULATED N/A 147	Association, International Maritime ransportation. The batteries must nents must meet the requirements
Proper Shipping Name NON-REGULATED Hazard Class N/A	US Department of Transportation r lithium batteries is prohibited aboard cember 15, 2004 (Hazardous Lithium Batteries and Cells Aboard um batteries packed with equipment", be classified as "Dangerous Goods"
Number	
TDG Not regulated	
MEX Not regulated	
ICAO Not regulated	
IATA Not regulated Proper Shipping Name NON REGULATED Hazard Class N/A	
IMDG/IMONot regulatedHazard ClassN/AEmS-No.F-A, S-I	
RID Not regulated	
ADR Not regulated	
ADN Not regulated	

15. REGULATORY INFORMATION

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

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories	
TSCA	Contact supplier for inventory compliance status.
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	42.28	0.1
Aluminum foil - 7429-90-5	7429-90-5	9.68	1.0
Copper - 7440-50-8	7440-50-8	8.6	1.0
Nickel - 7440-02-0	7440-02-0	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
Copper 7440-50-8		X	Х	
Nickel 7440-02-0		X	Х	

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
Aluminum foil 7429-90-5			
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, 10/1/1989 (metallic)			

U.S. State Right-to-Know Regulations

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

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Х		Х	Х	Х
Aluminum foil 7429-90-5	Х	X	Х	Х	
Copper 7440-50-8	Х	X	Х	Х	Х
Phosphate(1-), hexafluoro-, lithium 21324-40-3	Х				
Ethylene carbonate 96-49-1		X	Х		
Nickel 7440-02-0	Х	X	Х	Х	Х

16. OTHER INFORMATION							
<u>NFPA</u>	Health hazards 1	Flammability 0	Instab	ility 0	Physical and Chemical Properties -		
HMIS	Health hazards 0	Flammability 0	Physic	cal hazards 0	Personal Protection X		
Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501						
Issuing Date	24-Aug-2020						
Revision Date	24-Aug-2020						
Revision Note	No informa	ation 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 24-Aug-2020

Revision Date 24-Aug-2020

Revision Number 2

NGHS / English



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1. IDENTIFICATION

Product identifier					
Product Name	Rechargeable Li-ion Battery L18C3P71 by Celxpert				
Other means of identification					
Product Code(s)	1599765				
Recommended use of the chemica	al and restrictions on use				
Recommended Use	Lithium Ion Battery				
Restrictions on use	No information available				
Details of the supplier of the safet	y 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 - Dermal	Category 3
Skin corrosion/irritation	Category 2
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 Solid

Physical state Solid

Odor No information available

GHS Label elements, including precautionary statements

Danger

Hazard statements Toxic in contact with skin Causes skin irritation Causes serious 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

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 Immediately call a POISON CENTER or doctor

Skin

IF ON SKIN: Wash with plenty of water and soap Call a POISON CENTER or doctor if you feel unwell Take off immediately all contaminated clothing and wash it before reuse If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information



May be harmful if swallowed. Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity

98.19 % of the mixture consists of ingredient(s) of unknown toxicity 67.12 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

95.06 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

98.19 % 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	42.28	-	-
Aluminum foil	7429-90-5	9.68	-	-
Copper	7440-50-8	8.6	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	3.13	-	-
Ethylene carbonate	96-49-1	3.09	-	-
Nickel	7440-02-0	0.45	-	-

4. FIRST AID MEASURES

Description of first aid measures

General advice	First aid is upon rupture of sealed battery. Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention. In case of rupture: Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area.
Skin contact	Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. 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. Wear personal protective clothing (see section 8). Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing.



Most important symptoms and effects, both acute and delayed							
Symptoms Burning sensation. Itching. Rashes. Hives.							
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 Impac Sensitivity to Static Discharge	t None. 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 containm	ent 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. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when using this



product. In case of insufficient ventilation, wear suitable respiratory equipment.

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 T	LV	03	SHA PEL		NIOSH IDLH
Lithium Cobalt Oxide (CoLi 12190-79-3	iO2)	TWA: 0.02 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 n	natter	TWA: 5 m	g/m ³ respirable	TWA: 5 I	mg/m ³ respirable dust
				fraction			
				(vacated) TWA: 15 mg/m ³ total			
				<i>()</i>	dust		
				()	TWA: 5 mg/m ³		
Cannar		T\\/A : 0 0 ma m/m	3 6		able fraction		100 m m/m 3 du at fuma
Copper 7440-50-8		TWA: 0.2 mg/n	nº rume		1 mg/m ³ fume /m ³ dust and mist		100 mg/m ³ dust, fume and mist
7440-30-8					WA: 0.1 mg/m ³ Cu	Τ W/Δ· 1	mg/m ³ dust and mist
					fume, mist		Λ : 0.1 mg/m ³ fume
Phosphate(1-), hexafluor	o	TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³		· ·)LH: 250 mg/m ³ F	
lithium			3		(vacated) TWA: 2.5 mg/m ³		J.
21324-40-3				, ,	0		
Nickel		TWA: 1.5 m	ng/m³		A: 1 mg/m ³		IDLH: 10 mg/m ³
7440-02-0				· · · · · · · · · · · · · · · · · · ·	TWA: 1 mg/m ³		WA: 0.015 mg/m ³
Chemical name		Alberta	British C	Columbia	Ontario TWAE		Quebec
Lithium Cobalt Oxide	ΤV	VA: 0.02 mg/m ³	TWA: 0.0	02 mg/m ³	TWA: 0.02 mg/	m ³	TWA: 0.02 mg/m ³
(CoLiO2)							
12190-79-3	-		T 10/0_4	0 / 0	T 10/0 / /	0	TINIA 40 / 0
Aluminum foil	1	WA: 10 mg/m ³	TWA: 1.	0 mg/m³	TWA: 1 mg/m	3	TWA: 10 mg/m ³
7429-90-5				$1 - \pi \pi/m^3$ $TM/A = 0.2 - \pi \pi/m^3$		m ³	TWA: 0.2 mg/m ³
Copper 7440-50-8		TWA: 0.2 mg/m ³		mg/m ³ 2 mg/m ³	TWA: 0.2 mg/n TWA: 1 mg/m		TWA: 0.2 mg/m ³
Phosphate(1-),				2.5 mg/m ³ TWA: 2.5 mg/m ³			TWA: 2.5 mg/m ³
hexafluoro-, lithium		WA. 2.5 mg/m	1007.2.	5 mg/m	1 WA. 2.5 mg/i		TWA. 2.5 mg/m
21324-40-3							
Nickel	T\	WA: 1.5 mg/m ³	TWA: 0.0	05 mg/m ³	TWA: 1 mg/m	3	TWA: 1.5 mg/m ³
7440-02-0		-		-			-

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	Tight sealing safety goggles.
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. 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

Solid

No information available No information available No information available

Physical state	
Appearance	
Odor	
Color	
Odor Threshold	

PropertyValuespHNo data availableMelting / freezing pointNo data availableBoiling point / boiling rangeNo data availableFlash PointNo data availableFlash PointNo data availableEvaporation RateNo data availableFlammability (solid, gas)No data availableFlammability Limit in AirUpper flammability limitUpper flammability limitNo data availableLower flammability limitNo data availableVapor pressureNo data availableVapor densityNo data availableVapor densityNo data availableRelative densityNo data availableWater SolubilityInsoluble in waterSolubility(ies)No data availablePartition coefficient: n-octanol/water1No data availableAutoignition temperatureNo data availableDecomposition temperatureNo data availableDynamic viscosityNo data availableDynamic viscosityNo information availableSolular WeightNo information availableVOC Content (%)No information availableVOC Content (%)No information availableBulk DensityNo information availableParticle SizeNo information availableParticle Size DistributionNo information available	_	
Melting / freezing pointNo data availableBoiling point / boiling rangeNo data availableBoiling point / boiling rangeNo data availableFlash PointNo data availableEvaporation RateNo data availableFlammability (solid, gas)No data availableFlammability Limit in AirUpper flammability limitUpper flammability limitNo data availableLower flammability limitNo data availableVapor pressureNo data availableVapor densityNo data availableVapor densityNo data availableRelative densityNo data availableWater SolubilityInsoluble in waterSolubility(ies)No data availablePartition coefficient: n-octanol/water1Autoignition temperatureNo data availableDecomposition temperatureNo data availableDynamic viscosityNo data availableDynamic viscosityNo data availableOther InformationExplosive propertiesSolubiling propertiesNo information availableOxidizing propertiesNo information availableVOC Content (%)No information availableVOC Content (%)No information availableLiquid DensityNo information availableBulk DensityNo information availableParticle SizeNo information available	_	
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	2	No information available
Particle Size Distribution No information available	Particle Size	No information available
	Particle Size Distribution	No information available



None known
None known

None known None known None known

None known

None known None known None known None known

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 damage. (based on components). Severely irritating to eyes. May cause burns. May cause irreversible damage to eyes.	
Skin contact	Specific test data for the substance or mixture is not available. May cause sensitization by skin contact. Toxic in contact with skin. 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. May be harmful if swallowed.	
Symptoms related to the physical, of	chemical and toxicological characteristics	
Symptoms	Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes.	
Numerical measures of toxicity		
Acute Toxicity		
The following values are calculated ATEmix (oral) ATEmix (dermal)	based on chapter 3.1 of the GHS document.4,848.10 mg/kg.473.50 mg/kg	
Unknown acute toxicity98.19 % of the mixture consists of ingredient(s) of unknown toxicity67.12 % of the mixture consists of ingredient(s) of unknown acute oral toxicity95.06 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)		

98.19 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

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
Ethylene carbonate	= 10 g/kg (Rat)	-	> 730 mg/m³ (Rat)8 h
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat)1 h

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

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 burns. Risk of serious damage to eyes.		
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	Х
Nickel 7440-02-0	-	Group 2B	Reasonably Anticipated	Х

Legend

A3 - Animal Carcinogen IARC (International Agency for Group 2B - Possibly Carcinoge NTP (National Toxicology Pro Reasonably Anticipated - Reas	nic to Humans
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper	96h EC50: 0.031 - 0.054		-	48h EC50: = 0.03 mg/L
	mg/L	0.0156 mg/L (Pimephales		(Daphnia magna)



	(Pseudokirchneriella	promelas) 96h LC50: <		
	subcapitata) 72h EC50:	0.3 mg/L (Pimephales		
	0.0426 - 0.0535 mg/L	promelas) 96h LC50: =		
	(Pseudokirchneriella	0.052 mg/L		
	subcapitata)	(Oncorhynchus mykiss)		
	. ,	96h LC50: = 0.112 mg/L		
		(Poecilia reticulata) 96h		
		LC50: = 0.2 mg/L		
		(Pimephales promelas)		
		96h LC50: = 0.3 mg/L		
		(Cyprinus carpio) 96h		
		LC50: = 0.8 mg/L		
		(Cyprinus carpio) 96h		
		LC50: = 1.25 mg/L		
		(Lepomis macrochirus)		
Ethylene carbonate	-	96h LC50: > 100 mg/L	-	-
-		(Oncorhynchus mykiss)		
Nickel	96h EC50: 0.174 - 0.311	96h LC50: = 1.3 mg/L	-	48h EC50: = 1 mg/L
	mg/L	(Cyprinus carpio) 96h		(Daphnia magna) 48h
	(Pseudokirchneriella	LC50: = 10.4 mg/L		EC50: > 100 mg/L
	subcapitata) 72h EC50: =			(Daphnia magna)
	0.18 mg/L	LC50: > 100 mg/L		
	(Pseudokirchneriella	(Brachydanio rerio)		
	subcapitata)			

Persistence and Degradability	No information available.
Bioaccumulation	There is no data for this product.
Mobility	No information available.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

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)	Toxic		
12190-79-3			
Aluminum foil	Ignitable powder		
7429-90-5			
Nickel	Toxic powder		
7440-02-0	Ignitable powder		

Note: The transportation of primary lithium cells and batteries is regulated by the Int Civil Aviation Organization, International Air Transport Association, Internation Dangerous Goods Code and the US Department of Transportation. The batt meet the following criteria for shipment: 1. Air shipments must meet the req listed in Special Provision A45 of the International Air Transport Association D Goods Regulations. 2. Meet the requirements for the US Department of Trans listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prof passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazar	nal Maritime teries must quirements Dangerous nsportation hibited aboard rdous Cells Aboard th equipment",
Materials; Prohibited on the Transportation of Primary Lithium Batteries and C Passenger Aircraft; Final Rule) Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed wit or "Lithium batteries contained in equipment" may not be classified as "Dange when shipped in accordance with "special provision A45 of IATA-DGR" or "sp 188 of IMO-IMDG Code"	erous Goods"
DOTNOT REGULATEDProper Shipping NameNON-REGULATEDHazard ClassN/AEmergency Response Guide147Number	
TDG Not regulated	
MEX Not regulated	
ICAO Not regulated	
IATA Not regulated Proper Shipping Name NON REGULATED Hazard Class N/A	
IMDG/IMONot regulatedHazard ClassN/AEmS-No.F-A, S-I	
RID Not regulated	
ADR Not regulated	
ADN Not regulated	

15. REGULATORY INFORMATION

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

International Regulations

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

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories	
TSCA	Contact supplier for inventory compliance status.
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	42.28	0.1
Aluminum foil - 7429-90-5	7429-90-5	9.68	1.0
Copper - 7440-50-8	7440-50-8	8.6	1.0
Nickel - 7440-02-0	7440-02-0	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
Copper 7440-50-8		X	Х	
Nickel 7440-02-0		X	Х	

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
Aluminum foil 7429-90-5			
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, 10/1/1989 (metallic)	

U.S. State Right-to-Know Regulations

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

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Х		Х	Х	Х
Aluminum foil 7429-90-5	Х	X	Х	Х	
Copper 7440-50-8	Х	X	Х	Х	Х
Phosphate(1-), hexafluoro-, lithium 21324-40-3	Х				
Ethylene carbonate 96-49-1		X	Х		
Nickel 7440-02-0	Х	X	Х	Х	Х

16. OTHER INFORMATION						
<u>NFPA</u>	Health hazards 1	Flammability 0	Instab	ility 0	Physical and Chemical Properties -	
HMIS	Health hazards 0	Flammability 0	Physic	cal hazards 0	Personal Protection X	
Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501					
Issuing Date	24-Aug-20	24-Aug-2020				
Revision Date	24-Aug-2020					
Revision Note	No informa	ation 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

