SAFETY DATA SHEET

Issuing Date No data available

Revision Date 04-Mar-2019

Revision Number 1

NGHS / English



The supplier identified below generated this SDS using the UL SDS template. UL did not test, certify, or approve the substance described in this SDS, and all information in this SDS was provided by the supplier or was reproduced from publically available regulatory data sources. UL makes no representations or warranties regarding the completeness or accuracy of the information in this SDS and disclaims all liability in connection with the use of this information or the substance described in this SDS. The layout, appearance and format of this SDS is © 2014 UL LLC. All rights reserved.

1. IDENTIFICATION

Product identifier

Product Name Rechargeable Li-ion Battery L18C3PF2

Other means of identification

Product Code(s) 1506523

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Identification 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 No information available

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



Page 2/12

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	7429-90-5	9.68	-	-
Copper	7440-50-8	8.6	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	3.13	-	-
Nickel	7440-02-0	0.45	-	-

4. FIRST AID MEASURES

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.

Inhalation 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



Page 3/12

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

5. FIRE-FIGHTING MEASURES

surrounding environment.

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

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

Specific hazards arising from the

chemical

Product is or contains a sensitizer. May cause sensitization by skin contact.

Hazardous Combustion Products Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Special protective equipment for

fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal

protective equipment as required. Evacuate personnel to safe areas. Keep people away

from and upwind of spill/leak.

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

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling In case of rupture. Handle in accordance with good industrial hygiene and safety practice.

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. 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	09	SHA PEL		NIOSI	H IDLH
Lithium Cobalt Oxide (Co	LiO2)	TWA: 0.02 n	ng/m³		-			
12190-79-3								
Aluminum		TWA: 1 mg/m³ ı	respirable		mg/m³ total dust			m³ total dust
7429-90-5		particulate n	natter		ng/m³ respirable	TWA:	5 mg/m ³	respirable dust
					fraction			
				(vacated) TV	VA: 15 mg/m ³ total			
					dust			
				, , ,) TWA: 5 mg/m³			
					able fraction			
Copper		TWA: 0.2 mg/n	n³ fume		1 mg/m³ fume	DLH		/m³ dust, fume
7440-50-8					/m³ dust and mist			mist
					WA: 0.1 mg/m ³ Cu			dust and mist
					fume, mist			ng/m³ fume
Phosphate(1-), hexafluo	oro-,	TWA: 2.5 mg	g/m³ F		2.5 mg/m ³ F		IDLH: 250	0 mg/m³ F
lithium				(vacated)	TWA: 2.5 mg/m ³			
21324-40-3								
Nickel		TWA: 1.5 m	ıg/m³		4: 1 mg/m³			0 mg/m³
7440-02-0					TWA: 1 mg/m ³			15 mg/m ³
Chemical name		Alberta		Columbia	Ontario TWAE	-		Quebec
Lithium Cobalt Oxide	TV	VA: 0.02 mg/m ³	TWA: 0.0	02 mg/m³	TWA: 0.02 mg/l	m³	TWA	: 0.02 mg/m ³
(CoLiO2)								
12190-79-3								
Aluminum	TWA:	10 mg/m ³ TWA: 5	TWA: 1.	0 mg/m ³	TWA: 1 mg/m	3		mg/m³ TWA: 5
7429-90-5		mg/m³						mg/m³
Copper		WA: 0.2 mg/m ³		mg/m³	TWA: 0.2 mg/n			: 0.2 mg/m ³
7440-50-8		TWA: 1 mg/m ³		2 mg/m ³	TWA: 1 mg/m			A: 1 mg/m ³
Phosphate(1-),	T'	WA: 2.5 mg/m ³	TWA: 2.	5 mg/m ³	TWA: 2.5 mg/n	n ³	TWA	: 2.5 mg/m ³
hexafluoro-, lithium								
21324-40-3								
Nickel	T'	WA: 1.5 mg/m ³	TWA: 0.0	05 mg/m ³	TWA: 1 mg/m	3	TW.	A: 1 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).

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.



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.

None known

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state Solid

Appearance No information available Odor No information available No information available Color **Odor Threshold** No information available

Remarks Method Property Values

Hq No data available None known Melting / freezing point No data available None known No data available Boiling point / boiling range None known Flash Point No data available None known **Evaporation Rate** No data available None known Flammability (solid, gas) None known No data available None known

Flammability Limit in Air

Upper flammability limit No data available

Lower flammability limit No data available Vapor pressure No data available

None known Vapor density No data available None known Relative density No data available None known **Water Solubility** Insoluble in water

Solubility(ies) No data available

Partition coefficient: n-octanol/water0 **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 No information available **Softening Point** Molecular Weight No information available **VOC Content (%)** No information available **Liquid Density** No information available **Bulk Density** No information available Particle Size No information available **Particle Size Distribution** No information available

10. STABILITY AND REACTIVITY

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of Hazardous Reactions None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.



Conditions to avoidNone 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. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation. Toxic in contact with

skin.

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause

gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Information on toxicological effects

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 based on chapter 3.1 of the GHS document .

ATEmix (oral) 4,848.10 mg/kg **ATEmix (dermal)** 473.50 mg/kg

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)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
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/irritationClassification 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	X
(CoLiO2)			·	
12190-79-3				
Nickel	-	Group 2B	Reasonably Anticipated	X
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 exposureCauses 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 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: = 0.2 mg/L (Pimephales promelas) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.8 mg/L	<u>-</u>	48h EC50: = 0.03 mg/L



		(Cyprinus carpio)		
Nickel	72h EC50: = 0.18 mg/L	96h LC50: = 1.3 mg/L	-	48h EC50: > 100 mg/L
	(Pseudokirchneriella	(Cyprinus carpio) 96h		48h EC50: = 1 mg/L
	subcapitata) 96h EC50:	LC50: = 10.4 mg/L		_
	0.174 - 0.311 mg/L	(Cyprinus carpio) 96h		
	(Pseudokirchneriella	LC50: > 100 mg/L		
	subcapitata)	(Brachydanio rerio)		ļ

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	Ignitable powder
7429-90-5	
Copper	Toxic
7440-50-8	
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 shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"



DOTNOT REGULATEDProper Shipping NameNON-REGULATED

Hazard Class N/A Emergency Response Guide 147

Number

TDG Not regulated

MEX Not regulated

ICAO Not regulated

Not regulated

Proper Shipping Name NON REGULATED

Hazard Class N/A

<u>IMDG/IMO</u> Not regulated

Hazard Class N/A EmS-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

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements 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.

<u>Legend</u>

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

CERCLA

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

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

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	Massachusett	Pennsylvania	Rhode Island	Illinois
		S			
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	X		Х	Х	Х
Aluminum 7429-90-5	X	X	X	Х	
Copper 7440-50-8	Х	Х	Х	Х	Х
Phosphate(1-), hexafluoro-, lithium 21324-40-3	Х				
Nickel	X	Х	Х	Х	Х



7440-02-0			

16. OTHER INFORMATION

NFPA Health hazards 1 Flammability 0 Instability 0 Physical and Chemical

Properties
HMIS Health hazards 0 Flammability 0 Physical hazards 0 Personal Protection X

Prepared By Product Stewardship

23 British American Blvd. Latham, NY 12110 1-800-572-6501

Revision Date 04-Mar-2019

Revision Note No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

