According to HCS-2012 APPENDIX D TO §1910.1200

#### Version: 1.0/EN Product name: Rechargeable Li-ion Battery

#### Revision date: 11-Sept-2019 Printing date: 11-Sept-2019

1. Identification			
(a) Product identifier			
Product name:	Rechargeable Li-ion Battery		
(b) Other means of identifice	ation		
Product description:	Model: L617-1S1P-D Nominal Voltage: 3.65V Ampere-hour: 2.15Ah Typical Capacity: 2150mAh Weight: 46.0g Dimension: 22.0mm×66.7mm (D×T)		
(c) Recommended use of the	e chemical and restrictions on use		
Recommended use: Restriction on use:	LITHIUM ION BATTERIES. No information available.		
(d) Details of the supplier of	the product		
Company name(China) Address: E-mail: Telephone:	COMPUPAL (GROUP) CORPORATION No.1555 Jiashan Avenue, Jiashan, Zhejiang, ( selina.j@compupal.com.cn +86-573-84669808	China	
<b>(e) Emergency phone numbe</b> +86-573-84669808			

# 2. Hazard(s) identification

# (a) Classification of the chemical

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

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

#### (b) GHS Label elements, including precautionary statements

# Signal word: Danger Hazard Statements Harmful if swallowed Harmful in contact with skin Causes severe skin burns and eye damage Causes serious eye damage

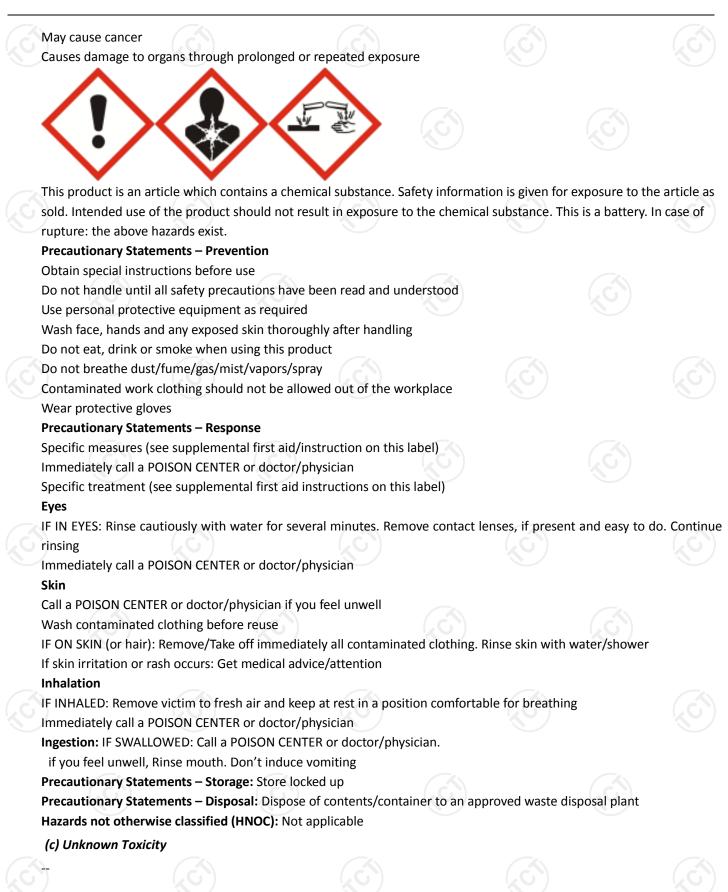
# Emergency Overview

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# (d) Other information

Very toxic to aquatic life with long lasting effects; Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (e) Interactions with Other Chemicals

No information available.

# 3. Composition/information on ingredients

Chemical name	CAS No.	Concentration%
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	38.5
Graphite powder	7782-42-5	21.5
Phosphate(1-), hexafluoro-, lithium	21324-40-3	21.7
Copper	7440-50-8	8.8
Aluminum	7429-90-5	3.4
Nickel	7440-02-0	3.6
PVC (Chloroethylene, polymer)	9002-86-2	2.5

# 4. First-aid measures

#### (a) Description of first aid measures

General Advice Eye contact: First aid is upon rupture of sealed battery.

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

Skin contact:

Inhalation:



Self-protection of the first aider:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. May cause an allergic skin reaction. Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention

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

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

#### (b) Most important symptoms/effects, acute and delayed

Most important symptoms and effects:

Itching. Coughing and/ or wheezing. Burning sensation.

#### (c) Indication of any immediate medical attention and special treatment needed

Notes to Physician

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes.

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Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.

# 5. Fire-fighting measures

### (a) Extinguishing media

Suitable extinguishing media: Unsuitable extinguishing media: Use foam, dry powder or dry sand, CO<sub>2</sub> as appropriate. No information available.

# (b) Special hazards arising from the chemical

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO<sub>2</sub>, Metal oxides, Irritating fumes

# (c) Special protective equipment and precautions for fire-fighters

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

# 6. Accidental release measures

#### (a) Personal precautions, protective equipment and emergency procedures

Personal Precautions

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

Refer to protective measures listed in Sections 7 and 8.

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

#### (c) Methods and materials for containment and cleaning up

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

#### 7. Handling and storage

#### (a) Precautions for safe handling

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types. Keep batteries away from children. For devices to be used by children, the battery casing should be protected against unauthorized access. Unpacked batteries shall not lie about in bulk. In case of battery change always

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replace all batteries by new ones of identical type and brand. Do not swallow batteries. Do not throw batteries into water. Do not throw batteries into fire. Avoid deep discharge. Do not short-circuit batteries Use recommended charging time and current.

#### (b) Conditions for safe storage, including any incompatibilities

If the Lithium-ion Battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium-ion Battery periodically. Operating temperature: Charge:0°C~45°C. Discharge: -20°C~60°C And recommended at -20°C~45°C for 1 month storage, at -20°C~35°C for 3 months storage. The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more. The voltage for a long time storage shall be 3.7V~4.2V range. Do not storage Lithium-ion Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of reach of children.

# 8. Exposure controls/personal protection

### (a) Control parameters

**Exposure Guidelines** 

	Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
	Lithium Cobalt Oxide (CoLiO2) 12190-79-3	TWA: 0.02 mg/m <sup>3</sup>		
(C)	Graphite 7782-42-5	TWA: 2 mg/m3 respirable fraction all forms except graphite fibers	TWA: 15 mg/m3 total dust synthetic TWA: 5 mg/m3 respirable fraction synthetic (vacated) TWA: 2.5 mg/m3 respirable dust natural (vacated) TWA: 10 mg/m3 total dust synthetic (vacated) TWA: 5 mg/m3 respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m3 TWA: 2.5 mg/m3 respirable dust
F	Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m3 F	TWA: 2.5 mg/m3 F TWA: 2.5 mg/m3 dust (vacated) TWA: 2.5 mg/m3	(
	Nickel 7440-02-0	TWA: 1.5 mg/m3	TWA: 1 mg/m3 (vacated) TWA: 1 mg/m3	IDLH: 10 mg/m3 TWA: 0.015 mg/m3
	Copper 7440-50-8	TWA: 0.2 mg/m3 fume TWA: 1 mg/m3 Cu dust and mist	TWA: 0.1 mg/m3 fume TWA: 1 mg/m3 dust and mist (vacated) TWA: 0.1 mg/m3 Cu dust, fume, mist	IDLH: 100 mg/m3 dust, fume and mist TWA: 1 mg/m3 dust and mist TWA: 0.1 mg/m3 fume
	Aluminum foil 7429-90-5	TWA: 1 mg/m3 respirable fraction	TWA: 15 mg/m3 total dust TWA: 5 mg/m3 respirable fraction (vacated) TWA: 15 mg/m3 total dust	TWA: 10 mg/m3 total dust TWA: 5 mg/m3 respirable dust
	Ś	(S)	(vacated) TWA: 5 mg/m3 respirable fraction (vacated) TWA: 5 mg/m3 Al Aluminum	

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value

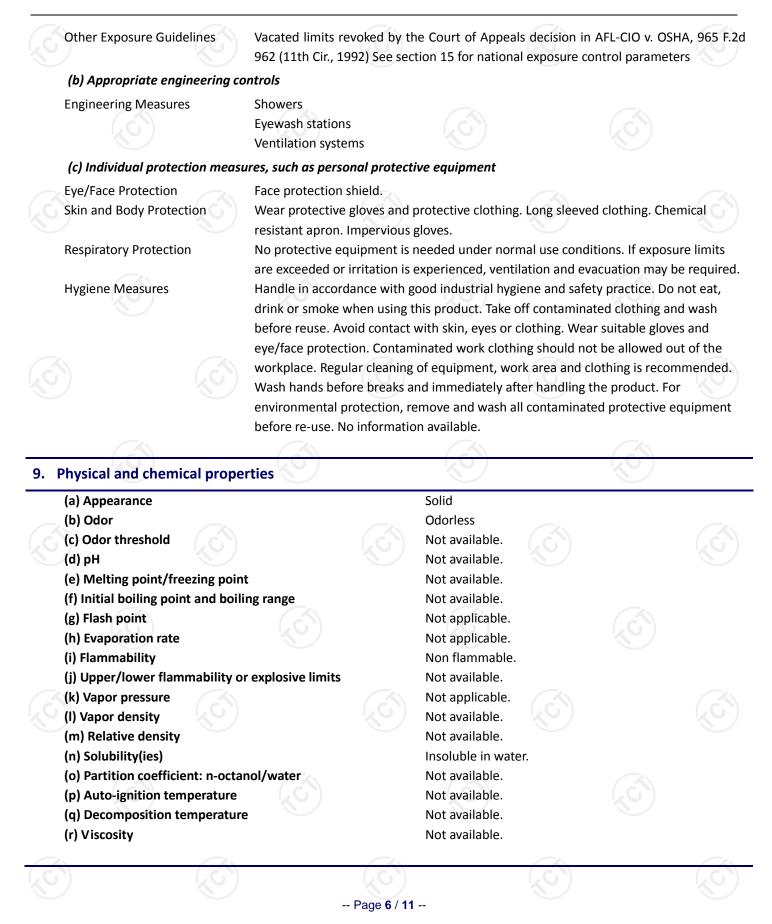
OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life

or Health

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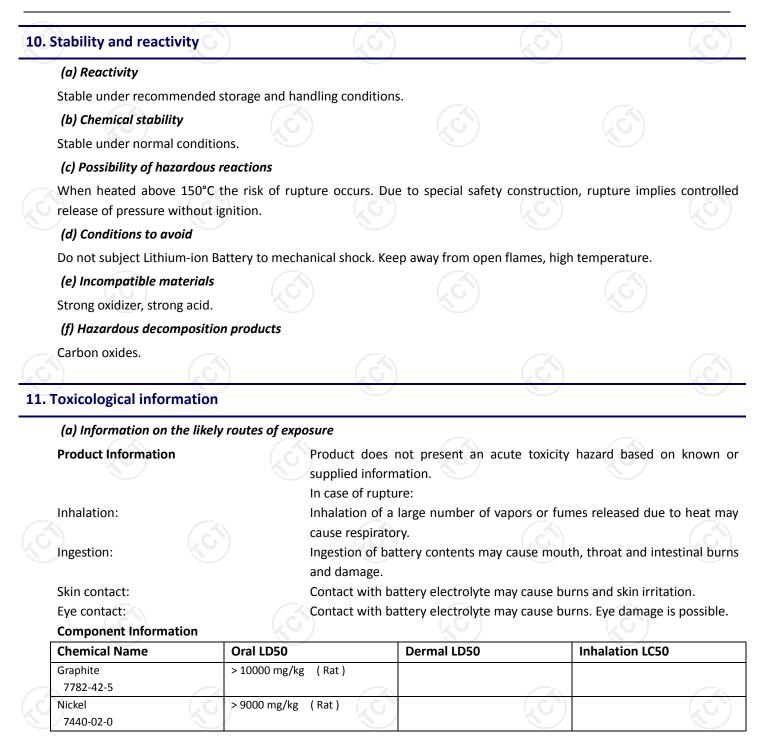


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#### (b) Information on toxicological characteristics

Symptoms

Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

#### (C) Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization

Mutagenic Effects

May cause sensitization of susceptible persons. May cause sensitization by skin contact.

No information available.

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Chemical Name	ACGIH	IARC		NTP	OSHA
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	A3	Group 2B	ĊĈ	6)	x
Nickel 7440-02-0	X	Group 2B	e	Reasonably Anticipated	x
ACGIH (American Con	ference of Govern	mental Industrial Hygie	nists)		
A3 - Animal Carcinoge		$(\mathbf{c})$			
IARC (International Ag Group 2B - Possibly Ca					
NTP (National Toxicol					
		ticipated to be a Human	Carcino	gon	
				-	
	ballety and Health	Administration of the U	5 Depar	tment of Labory	
X - Present					
Reproductive Toxicity		No information avail			
👕 STOT - single exposure	No information ava	ilahla			
		No information avai		brough prolonged or r	anastad avpasura Bas
STOT - repeated expos		Causes damage to on classification c Standard (29 CFR 1	organs t riteria f .910.120	hrough prolonged or re rom the 2012 OSHA 00), this product has be city from chronic or re	Hazard Communicati een determined to cau
		Causes damage to on classification c Standard (29 CFR 1 systemic target org RE). Chronic exposure to followed by jaw n frequent attacks disturbances may a	organs t riteria f .910.120 gan toxic o corrosi ecrosis. of pr lso be se posure. I	rom the 2012 OSHA 00), this product has be city from chronic or re ive fumes/gases may ca Bronchial irritation neumonia are comm een. Contains a known Prolonged exposure ma	Hazard Communication en determined to cause peated exposure. (ST ause erosion of the tee with chronic cough a mon. Gastrointestin or suspected carcinoge
STOT - repeated expos		Causes damage to on classification co Standard (29 CFR 1 systemic target org RE). Chronic exposure to followed by jaw n frequent attacks disturbances may a Avoid repeated exp May cause adverse	organs t riteria f 910.120 gan toxic o corrosi ecrosis. of pr lso be se posure. I liver effe	rom the 2012 OSHA 00), this product has be city from chronic or re ive fumes/gases may ca Bronchial irritation of neumonia are comm een. Contains a known Prolonged exposure ma ects.	Hazard Communication en determined to cause peated exposure. (ST ause erosion of the tee with chronic cough a non. Gastrointestin or suspected carcinoge ay cause chronic effect
STOT - repeated expos		Causes damage to on classification c Standard (29 CFR 1 systemic target org RE). Chronic exposure to followed by jaw n frequent attacks disturbances may a Avoid repeated exp May cause adverse Respiratory system.	organs t riteria f .910.120 gan toxic o corrosi ecrosis. of pr lso be se oosure. I liver effe . Eyes. S	rom the 2012 OSHA 00), this product has be city from chronic or re ive fumes/gases may ca Bronchial irritation neumonia are comm een. Contains a known Prolonged exposure ma	Hazard Communication en determined to cause peated exposure. (ST ause erosion of the tea with chronic cough a non. Gastrointesti or suspected carcinoge ay cause chronic effect

# (a) Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity	to Daphnia	Magna
			Microorganisms	(Water Flea)	
Nickel	72h EC50: = 0.18 mg/L	96h LC50: > 100 mg/L	)	48h EC50: > 1	00 mg/L
7440-02-0	(Pseudokirchneriella	(Brachydanio rerio) 96h		48h EC50: =	1 mg/L
	subcapitata) 96h EC50:	LC50: = 1.3 mg/L			-
	0.174 - 0.311 mg/L	(Cyprinus carpio) 96h			
	(Pseudokirchneriella	LC50: = 10.4 mg/L			
	subcapitata)	(Cyprinus carpio)			
)	KO /	KO I			XU /

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	Copper	96h EC50: 0.031 - 0.054	96h LC50: 0.0068 -	48h EC50	: = 0.03 mg/L
	7440-50-8	mg/L	0.0156 mg/L (Pimephales		
		(Pseudokirchneriella	promelas) 96h LC50: =		
		subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L	0.112 mg/L (Poecilia reticulata) 96h LC50: =		
		(Pseudokirchneriella	0.3 mg/L (Cyprinus		
		subcapitata)	carpio) 96h LC50: = 0.8		
			mg/L (Cyprinus carpio)		
			96h LC50: = 1.25 mg/L		
			(Lepomis macrochirus)		
			96h LC50: = 0.052 mg/L (Oncorhynchus mykiss)		
Ċ)		$(\mathbf{G})$	96h LC50: = 0.2 mg/L		
			(Pimephales promelas)		
			96h LC50: < 0.3 mg/L		
(1.)	Densistan and	Deserved a lettility	(Pimephales promelas)		
(b)	Persistence and	Degradability			
No	information avail	able.			
(c)	Bioaccumulative	e potential			
No	information avail	able.			
(d)	Other adverse e	ffects			
No	information avail	abla			
INO					
. Disp	osal considera	tions			

#### (20)

# (a) Waste treatment methods

**Disposal methods** 

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

**Contaminated Packaging** 

Dispose of contents/containers in accordance with local regulations

Chemical Name	RCRA	RCRA - Basis for	RCRA - D Series	RCRA - U Series
		Listing	Wastes	Wastes
Nickel	(hazardous constituent -	Included in waste		
7440-02-0	no waste number)	streams: F006, F039		

California Hazardous Waste 141

#### 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		
	Lithium Cobalt Oxide (CoLiO2) 12190-79-3		Toxic		
	Nickel 7440-02-0		Toxic powder Ignitable powder	/	
	Copper 7440-50-8		Тохіс		
9		KO.			

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Aluminum foil	Ignitable nourder	
7429-90-5	lgnitable powder	

# 14. Transport information

Note:		Civil Aviation C Maritime Dang batteries must the requireme Association Da Department of lithium batteri December 15, Lithium Batter Lithium batter equipment", o "Dangerous Go	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 met 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 Regise 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"			
(.ć	UN number	3480&3481				
	DOT	NOT REGULAT	ED	<u> </u>		
	Proper Shipping Name	NON REGULAT	ΈD			
	Hazard Class	N/A				
	TDG	Not regulated				
	MEX	Not regulated				
	ICAO	Not regulated				
	ΙΑΤΑ	Not regulated				
	Proper Shipping Name	NON REGULAT	ED			
	Hazard Class	N/A				
	IMDG/IMO	Not regulated				
	Hazard Class	N/A				
	EmS-No.	F-A, S-I				
	RID (G)	Not regulated				
	ADR	Not regulated				
	ADN	Not regulated				

# 15. Regulatory information

(a) Safety, health and environmental regulations specific for the product in question

CAS No.	USA	EU	Japan	Korea	China	Canada
	TSCA	EINECS	ENCS	ECL	IECSC	DSL
12190-79-3	Listed	Listed	Listed	Listed	Listed	Listed
7782-42-5	Listed	Listed	Not listed	Listed	Not listed	Listed
21324-40-3	Not listed	Not listed	Listed	Not listed	Listed	Not listed
7440-50-8	Not listed	Not listed	Listed	Not listed	Listed	Not listed
7429-90-5	Listed	Listed	Listed	Not listed	Listed	Listed



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7440-02-0	Not listed	Listed	Listed	Listed	Not listed	Not listed
9002-86-2	Listed	Not listed	Listed	Listed	Listed	Listed

# 16. Other information, including date of preparation or last revision

#### (a) Preparation and revision information Date of previous revision: Not applicable. Date of this revision: 10-Sept-2019 Revision summary: The first New SDS (b) Abbreviations and acronyms TSCA: Toxic Substances Control Act, The American chemical inventory. DSL **Domestic Substances List** EINECS: European Inventory of Existing Commercial chemical Substances ENCS Japanese Existing and New Chemical Substances ECL: Existing Chemicals List, the Korean chemical inventory. **IECSC:** Inventory of existing chemical substances in China.

# (c) Disclaimer

Because all of our batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

------ End of the SDS ------

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