SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1
Product Name 【PR-371030】Lithium ion battery

Issue Date 14-Jul-2015
Revision date 14-Jul-2015

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name	【PR-371030】Lithium ion battery
Chemical Name	Lithium ion Battery

Other means of identification

Product Code	Voltage: 3.7V;Watt-hour: 0.314WH;

Recommended use of the chemical and restrictions on use

Recommended Use	Power supply
Uses advised against	No information available

Details of the supplier of the safety data sheet

Supplier	Huizhou TCL Hyperpower Batteries Inc
Address	No.3,Hechang Dongliu Rd.,Huitai Industrial Zone,Huicheng District,Huizhou City,Guangdong Province,China
Postal Code	516006
Phone	+86-752-2365544
FAX	+86-752-2367644
E-mail	wuxf@tcl.com

Emergency telephone number

+86-752-2365544

2. HAZARDS IDENTIFICATION

GHS Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Symbols/Pictograms	None
Signal word	None
Hazard Statements	None
Precautionary Statements	
Prevention	None
Response	None
Storage	None
Disposal	None

Hazards not otherwise classified (HNOC)

No information available

Unknown acute toxicity

.?% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature Mixture

Chemical Name	CAS No	Weight-%

Lithium Cobalt Oxide (CoLiO2)	12190-79-3	30.5
Graphite	7782-42-5	14.9
Aluminum	7429-90-5	17.8
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10.0
Copper	7440-50-8	8.07
Polypropylene	9003-07-0	13.9
Nickel	7440-02-0	0.34
Polyethylene	9002-88-4	0.45
Epoxy resin	38891-59-7	1.03
Styrene-Butadiene polymer	9003-55-8	0.45
Carbon black	1333-86-4	0.95
1,1-Difluoroethylene polymer	24937-79-9	0.75
Sodium carboxymethyl cellulose	9004-32-4	0.3
Tin	7440-31-5	0.56

4. FIRST AID MEASURES

Description of first aid measures

General advice — Remove contaminated clothing and shoes. If symptoms persist, call a physician.

Inhalation — Not an expected route of exposure. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin Contact — Wash hands thoroughly after handling. .

Eye contact — Not an expected route of exposure. .

Ingestion — Rinse mouth Get medical attention Never give anything by mouth to an unconscious person

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media — Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media — No information available.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas
Ensure adequate ventilation, especially in confined areas
Remove all sources of ignition
Use personal protection recommended in Section 8

Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so
Pick up and transfer to properly labeled containers

Avoid release to the environment

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice
Ensure adequate ventilation, especially in confined areas
Avoid creating dust
Avoid contact with eyes
Wash thoroughly after handling
Use personal protection recommended in Section 8

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place
Keep away from heat

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Denmark	European Union
Lithium Cobalt Oxide (CoLiO2) (CAS #: 12190-79-3)	TWA: 0.02 mg/m^3 Co	-	-	TWA: 0.01 mg/m^3	-
Graphite (CAS #: 7782-42-5)	TWA: 2 mg/m^3 respirable fraction all forms except graphite fibers	-	-	TWA: 2.5 mg/m^3	-
Aluminum (CAS #: 7429-90-5)	TWA: 1 mg/m^3 respirable fraction	TWA: 15 mg/m^3 total dust TWA: 5 mg/m^3 respirable fraction (vacated) TWA: 15 mg/m^3 total dust (vacated) TWA: 5 mg/m^3 respirable fraction (vacated) TWA: 5 mg/m^3 Al Aluminum	TWA: 10 mg/m^3 total dust TWA: 5 mg/m^3 respirable dust TWA: 5 mg/m^3 Al	TWA: 5 mg/m^3 TWA: 2 mg/m^3	-
Phosphate(1-), hexafluoro-, lithium (CAS #: 21324-40-3)	TWA: 2.5 mg/m^3 F	-	-	TWA: 2.5 mg/m^3	-
Copper (CAS #: 7440-50-8)	TWA: 0.2 mg/m^3 fume TWA: 1 mg/m^3 Cu dust and mist	-	-	TWA: 1.0 mg/m^3 TWA: 0.1 mg/m^3	-
Nickel (CAS #: 7440-02-0)	TWA: 1.5 mg/m^3 inhalable fraction	TWA: 1 mg/m^3 (vacated) TWA: 1 mg/m^3	IDLH: 10 mg/m^3 IDLH: 10 mg/m^3 Ni TWA: 0.015 mg/m^3 TWA: 0.015 mg/m^3 except Nickel carbonyl Ni	TWA: 0.05 mg/m^3	-
Carbon black (CAS #: 1333-86-4)	TWA: 3 mg/m^3 inhalable fraction	-	-	TWA: 3.5 mg/m^3	-
Tin (CAS #: 7440-31-5)	TWA: 2 mg/m^3 TWA: 2 mg/m^3 Sn except Tin hydride	-	-	TWA: 2 mg/m^3	-

Chemical Name	Latvia	France	Finland	Germany	Italy
Aluminum (CAS #: 7429-90-5)	TWA: 2 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	TWA: 1.5 mg/m^3	TWA: 4 mg/m^3 TWA: 1.5 mg/m^3	-
Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m^3	TWA: 1 mg/m^3	TWA: 1 mg/m^3 TWA: 0.1 mg/m^3	Skin	-

Chemical Name	Poland	Portugal	Spain	Switzerland	Netherlands
Aluminum (CAS #: 7429-90-5)	TWA: 2.5 mg/m^3 TWA: 1.2 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	TWA: 3 mg/m^3	TWA: 0.05 mg/m^3
Nickel (CAS #: 7440-02-0)	TWA: 0.25 mg/m^3	TWA: 1.5 mg/m^3	TWA: 1 mg/m^3	TWA: 0.5 mg/m^3	-

Chemical Name	Norway	United Kingdom	Australia	Austria	Belgium
Lithium Cobalt Oxide (CoLiO2) (CAS #: 12190-79-3)	-	-	-	Skin	-
Graphite (CAS #: 7782-42-5)	-	-	3 mg/m^3	STEL 10 mg/m^3 TWA: 5 mg/m^3	-
Aluminum (CAS #: 7429-90-5)	TWA: 5 mg/m^3 STEL: 10 mg/m^3	STEL: 30 mg/m^3 STEL: 12 mg/m^3 TWA: 10 mg/m^3 TWA: 4 mg/m^3	10 mg/m^3 5 mg/m^3	STEL 20 mg/m^3 TWA: 10 mg/m^3	-
Phosphate(1-), hexafluoro-, lithium (CAS #: 21324-40-3)	-	-	2.5 mg/m^3	-	-
Copper (CAS #: 7440-50-8)	-	-	1 mg/m^3 0.2 mg/m^3	STEL 4 mg/m^3 STEL 0.4 mg/m^3 TWA: 1 mg/m^3 TWA: 0.1 mg/m^3	-
Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m^3 STEL: 0.15 mg/m^3	STEL: 1.5 mg/m^3 TWA: 0.5 mg/m^3	1 mg/m^3	-	-
Carbon black (CAS #: 1333-86-4)	-	-	3 mg/m^3	-	-
Tin (CAS #: 7440-31-5)	-	-	2 mg/m^3	STEL 4 mg/m^3 TWA: 2 mg/m^3	-

Appropriate engineering controls

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hand Protection	Wear protective gloves.
Eye/face protection	No special technical protective measures are necessary.
Skin and body protection	Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid
Color	silver
Odor	Odorless
Odor Threshold	Not determined
pH	Not determined
Melting point/freezing point	Not determined
Boiling point / boiling range	Not determined
Flash point	Not applicable
Evaporation rate	Not determined
Flammability (solid, gas)	Not determined
Flammability Limit in Air	Not determined
Vapor Pressure	Not applicable
Vapor density	Not determined
Density	Not determined
Relative density	Not determined
Bulk density	Not determined

Specific gravity	Not determined
Water solubility	Not determined
Partition coefficient (LogPow)	Not determined
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Kinematic viscosity	Not determined
Dynamic viscosity	Not determined
Explosive properties	Not an explosive
Oxidizing properties	Not determined

Other information

No information available

10. STABILITY AND REACTIVITY

Reactivity

Stable under recommended storage and handling conditions (see SECTION 7, handling and storage).

Chemical stability

Stable under normal conditions

Possibility of Hazardous Reactions

None under normal processing

Conditions to avoid

Strong heating. Incompatible materials

Incompatible materials

Strong acids Strong bases Strong oxidizing agents

Hazardous Decomposition Products

None known based on information supplied

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Inhalation of vapors in high concentration may cause irritation of respiratory system
Eye contact	Contact with eyes may cause irritation
Skin Contact	Substance may cause slight skin irritation
	Ingestion may cause irritation to mucous membranes

Information on toxicological effects

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum (CAS #: 7429-90-5)	LD50> 15900 mg/kg bw(rat)	-	LC50> 0.888 mg/L/4 h(rat)
Copper (CAS #: 7440-50-8)	> 2500 mg/kg bw(rat)	> 2000 mg/kg bw(rat)	=1.03 mg/L/4 h(rat)
Polypropylene (CAS #: 9003-07-0)	>5 g/kg	-	-
Nickel (CAS #: 7440-02-0)	> 9000 mg/kg (Rat)	-	-

Skin corrosion/irritation

Non-irritating to the skin

Serious eye damage/eye irritation

No eye irritation

Sensitization
No information available

Germ cell mutagenicity
No information available

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt Oxide (CoLiO2) (CAS #: 12190-79-3)	A3	-	-	-
Nickel (CAS #: 7440-02-0)	-	Group 2B	Known Reasonably Anticipated	X
Carbon black (CAS #: 1333-86-4)	A3	-	-	-

Reproductive toxicity
No information available

STOT - single exposure
No information available

STOT - repeated exposure
No information available

Aspiration hazard
No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants EC50	Fish LC50	Crustacea EC50
Lithium Cobalt Oxide (CoLiO2) (CAS #: 12190-79-3)	-	275 mg/L/96h(Fundulus heteroclitus)	-
Aluminum (CAS #: 7429-90-5)	-	> 50 mg/L/96h	-
Copper (CAS #: 7440-50-8)	0.031 - 0.054 mg/L/96h Pseudokirchneriella subcapitata static 0.0426 - 0.0535 mg/L/72h Pseudokirchneriella subcapitata static	-	-
Nickel (CAS #: 7440-02-0)	0.18 mg/L/72h Pseudokirchneriella subcapitata 0.174 - 0.311 mg/L/96h Pseudokirchneriella subcapitata static	100 mg/L/96h Brachydanio rerio 1.3 mg/L/96h Cyprinus carpio semi-static 10.4 mg/L/96h Cyprinus carpio static	100 mg/L/48h Daphnia magna 1 mg/L/48h Daphnia magna Static

Persistence and degradability
No information available

Bioaccumulative potential

Mobility in soil
No information available

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes — Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated packaging — Dispose of in accordance with federal, state and local regulations

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Nickel 7440-02-0	-	Included in waste streams: F006, F039	-	-

Chemical Name	California Hazardous Waste Status
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic
Aluminum 7429-90-5	Ignitable powder
Copper 7440-50-8	Toxic
Nickel 7440-02-0	Toxic powder Ignitable powder

14. TRANSPORT INFORMATION

US DOT, The batteries are not subject to the requirements of the Department of Transportation (DOT) subchapter C, Hazardous Material Regulations since each battery meets the exceptions under 173.185 (b). The batteries are exempted from the US DOT regulations as long as they are separated to prevent short circuits and packed in strong packing for conditions normally encountered in transportation.

ICAO and IATA, IMDG all batteries are regulated as Hazardous Material by the International Civil Aviation Organization (ICAO),the International Air Transport Association (IATA) and International Maritime Dangerous Goods Regulations (IMDG). The only DOT requirement for shipping these batteries is special provision 130 which states: “Batteries, dry are not subject. They must be transported according to Section 38.3 of the Fifth Revised of the Recommendations on the transport of Dangerous Goods and Drop test of SectionII of Packing Instructions 968~970 of 55th DGR Manual of IATA .

The battery has passed the test UN38.3.

DOT / IMDG / IATA

UN/ID No.	Not regulated
Proper shipping name	Not regulated
Hazard Class	Not regulated
Packing Group	Not regulated
Special precautions	No information available
Marine pollutant	Not applicable

15. REGULATORY INFORMATION

International Inventories

Component	AICS	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	TSCA
Lithium Cobalt Oxide (CoLiO2) 12190-79-3 (15 - 40)	X	X	X	X	X	X	-	X
Graphite 7782-42-5 (10 - 30)	X	X	X	-	X	X	X	X
Aluminum 7429-90-5 (10 - 30)	X	X	X	-	X	X	X	X
Phosphate(1-), hexafluoro-, lithium 21324-40-3 (7 - 13)	X	X	X	X	X	X	X	X
Copper 7440-50-8 (7 - 13)	X	X	X	-	X	X	X	X
Polypropylene 9003-07-0 (3 - 7)	X	X	-	X	X	X	X	X
Nickel 7440-02-0 (1 - 5)	X	X	X	-	X	X	X	X
Polyethylene 9002-88-4 (1 - 5)	X	X	-	X	X	X	X	X
Styrene-Butadiene polymer 9003-55-8 (0.1 - 1)	X	X	-	X	X	X	X	X
Carbon black 1333-86-4 (0.1 - 1)	X	X	X	X	X	X	X	X
1,1-Difluoroethylene polymer 24937-79-9 (0.1 - 1)	X	X	-	X	X	X	X	X
Sodium carboxymethyl cellulose 9004-32-4 (0.1 - 1)	X	X	-	X	X	X	X	X
Tin 7440-31-5 (0.1 - 1)	X	X	X	-	X	X	X	X

"-" Not Listed
"X" Listed

US Federal Regulations

SARA 313

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

Chemical Name	SARA 313 - Threshold Values %
Aluminum - 7429-90-5	1.0
Nickel - 7440-02-0	0.1

SARA 311/312 Hazard Categories

Does not apply

CWA (Clean Water Act)

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

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

CERCLA

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

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Nickel 7440-02-0	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

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

U.S. State Right-to-Know Regulations

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

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Aluminum 7429-90-5	X	X	X
Nickel 7440-02-0	X	X	X

16. OTHER INFORMATION

Revision Note

Issue Date	14-Jul-2015
Revision date	14-Jul-2015
Revision Note	Not applicable

Key or legend to abbreviations and acronyms used in the safety data sheet

TWA - TWA (time-weighted average)
STEL - STEL (Short Term Exposure Limit)
Ceiling - Maximum limit value
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Disclaimer

The information provided in this Material 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 --------