SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1 **Issue Date** 11-Nov-2015
Product Name Polymer Lithium Battery **Revision date** 11-Nov-2015

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

Product identifier

Product Name	Polymer Lithium Battery
Chemical Name	Lithium Ion Battery

Other means of identification

Product Code	18650; Voltage: 3.7V;Watt-hour: 9.25WH; Weight: 49g

Recommended use of the chemical and restrictions on use

Recommended Use	Used in electric tools, Bluetooth audio, etc.
Uses advised against	No information available

Details of the supplier of the safety data sheet

Supplier	Shenzhen Huayou Polymer Li-ion Battery Co., Ltd.
Address	Building D, JinXiongDa Industrial Park, Guanlan Town, Shenzhen, China
Postal Code	518110
Phone	+86-0755-29588859
FAX	+86-0755-2958851
E-mail	jingshaowei@foxmail.com

Emergency telephone number

+86-0755-29588859

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	10 - 35

Graphite	7782-42-5	10 - 35
Aluminum chlorohydrate	12042-91-0	10 - 35
Copper	7440-50-8	7 - 13
Other organic chemicals	96-49-1	5 - 10
Aluminum foil	7429-90-5	3 - 7
1,1-Difluoroethylene polymer	24937-79-9	1 - 5
Styrene-Butadiene polymer	9003-55-8	1 - 5
Naphthenic acids, nickel salts	61788-71-4	1 - 5
Polyethylene	9002-88-4	0.1 - 1

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 chlorohydrate (CAS #: 12042-91-0)	TWA: 1 mg/m^3 respirable fraction	-	-	-	-
Electrolytes, cobalt-manufg. (CAS #: 121053-28-9)	TWA: 0.02 mg/m^3 Co	-	-	TWA: 0.01 mg/m^3	-
Aluminum foil (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	-
Naphthenic acids, nickel salts (CAS #: 61788-71-4)	-	-	-	TWA: 0.01 mg/m^3 TWA: 0.05 mg/m^3	-

Chemical Name	Latvia	France	Finland	Germany	Italy
Aluminum foil (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	-

Chemical Name	Poland	Portugal	Spain	Switzerland	Netherlands
Aluminum foil (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

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	-
Electrolytes, cobalt-manufg. (CAS #: 121053-28-9)	-	-	-	Skin	-
Aluminum foil (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	-
Naphthenic acids, nickel salts (CAS #: 61788-71-4)	-	-	0.1 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	130 °C
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

No data available.

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	-	-	-
Electrolytes, cobalt-manufg. (CAS #: 121053-28-9)	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)	-

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	California Hazardous Waste Status
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic
Electrolytes, cobalt-manufg. 121053-28-9	Toxic
Aluminum foil 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

The Polymer Lithium Battery (model: 673450) tested according to the requirements of the UN manual of tests and Criteria, Part III, subsection 38.3;

The Polymer Lithium Battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;

The Polymer Lithium Battery according to Section II of PACKING INSTRUCTION 965, or Section II of PACKING INSTRUCTION 966～967 of the 2015 IATA Dangerous Goods regulations 56th Edition may be transported.as non-dangerous goods and meet the requirements of 49CFR 173.185 to be transport as non-dangerous goods and meets the requirements of IMDG Special Provision 188 to be transport as non-dangerous goods.

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 (10 - 30)	X	X	X	X	X	X	-	X
Graphite 7782-42-5 (10 - 30)	X	X	X	-	X	X	X	X
Aluminum chlorohydrate 12042-91-0 (10 - 30)	X	X	-	-	X	-	-	-
Electrolytes, cobalt-manufg. 121053-28-9 (3 - 7)	-	X	-	-	-	-	-	-
Aluminum foil 7429-90-5 (3 - 7)	X	X	X	-	X	X	X	X
1,1-Difluoroethylene polymer 24937-79-9 (1 - 5)	X	X	-	X	X	X	X	X
Styrene-Butadiene polymer 9003-55-8 (1 - 5)	X	X	-	X	X	X	X	X
Naphthenic acids, nickel salts 61788-71-4 (1 - 5)	X	X	-	-	X	-	-	-
Polyethylene 9002-88-4 (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 foil - 7429-90-5	1.0

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
Naphthenic acids, nickel salts 61788-71-4	-	X	-	-

CERCLA

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

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Naphthenic acids, nickel salts - 61788-71-4	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 foil 7429-90-5	X	X	X

16. OTHER INFORMATION

Revision Note

Issue Date	11-Nov-2015
Revision date	11-Nov-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 --------