SAFETY DATA SHEET

Date of issue 07-26-2019 Canada/English

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

Product identifier		
Product Name	Polymer Li-ion Battery (JS801345)	
Other means of identification		
Recommended use of the chemical	and restrictions on use	
Recommended Use	LITHIUM ION BATTERIES	
Uses advised against	No information available	
Details of the supplier of the safety data sheet		
Initial supplier identifier	DongGuan JoySun New Energy Co., Ltd.	
Address	No. 21, Shuibian Industrial Zone, Hengli Town, Dongguan, Guangdong, China	
Telephone	+86-0769-38947473	
E-mail	2352889407@qq.com	
Emergency telephone number		
Company Emergency Phone Number	+86-0769-38947473	

2. HAZARDS IDENTIFICATION

Classification

This is a battery. In case of rupture:

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Danger

Hazard statements

This is a battery. In case of rupture:.

Causes skin irritation Causes serious eye irritation Suspected of causing 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 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)

Eves

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 If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life with long lasting effects

Unknown acute toxicity

30.9 % of the mixture consists of ingredient(s) of unknown toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

30.9 % 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	Percent (%)	Hazardous Material	Date HMIRA filed and

			Information Review Act registry number (HMIRA registry #)	date exemption granted (if applicable)
Styrene-Butadiene polymer	9003-55-8	1	-	-
Polyethylene	9002-88-4	8	-	-
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	50	-	-
Graphite	7782-42-5	25	-	-
Aluminum foil	7429-90-5	8	-	-
Copper	7440-50-8	7	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1	-	-

4. FIRST AID MEASURES

First aid measures		
General advice	First aid is upon rupture of sealed battery. IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.	
Inhalation	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	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.	
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.	
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).	
Most important symptoms and effect	ts, both acute and delayed	
Symptoms	Burning sensation.	
Indication of any immediate medical attention and special treatment needed		
Note to physicians	Treat symptomatically.	
5. FIRE-FIGHTING MEASURES		

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	CAUTION: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
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.
Other Information	Refer to protective measures listed in Sections 7 and 8.
Environmental precautions	
Environmental precautions	Prevent further leakage or spillage if safe to do so.
Methods and material for containme	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.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations

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. 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 Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Lithium Cobalt Oxide	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³
(CoLiO2)				
12190-79-3				
Graphite	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³
7782-42-5			-	_
Aluminum	TWA: 10 mg/m ³ TWA: 5	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³ TWA: 5
7429-90-5	mg/m ³		_	mg/m ³
Copper	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³
7440-50-8	TWA: 1 mg/m ³	TWA: 0.2 mg/m^3	TWA: 1 mg/m ³	TWA: 1 mg/m ³
Phosphate(1-),	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³
hexafluoro-, lithium	C C	C C	C C	C C

21324-40-3		
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, su	ch as personal protective equipment	
Eye/face protection	If splashes are likely to occur, wear safety glasses with side-shields.	
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	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.	

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid	
Appearance	No information available	
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/wate	r 0	
Autoignition temperature	No data available	None known
Decomposition temperature	Nondeaten erværilable	
Kinematic viscosity	Nondeaten erværilable	
Dynamic viscosity	Nondeatan awanilable	
Explosive properties	No information available.	
Oxidizing properties	No information available.	

Other Information	
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

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 irritation. (based on components). Irritating to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Information on toxicological effects	<u>8 </u>
Symptoms	Redness. May cause redness and tearing of the eyes.
Numerical measures of toxicity	
Acute Toxicity	
The following values are calculated ATEmix (oral) ATEmix (dermal)	I based on chapter 3.1 of the GHS document . 12,452.00 mg/kg 9,132.00 mg/kg

Unknown acute toxicity

ity 30.9 % of the mixture consists of ingredient(s) of unknown toxicity

- 30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Propylene carbonate	= 29000 mg/kg (Rat)	> 20 mL/kg (Rabbit)	-

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. Irritating to eyes.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	Classification based on data available for ingredients. Contains a known or suspected carcinogen.

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

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 mg/L (Pseudokirchneriella	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: =	-	48h EC50: = 0.03 mg/L

	subcapitata) 72h EC50:	1.25 mg/L (Lepomis		
	0.0426 - 0.0535 mg/L	macrochirus) 96h LC50: =		
	(Pseudokirchneriella	0.052 mg/L		
	subcapitata)	(Oncorhynchus mykiss)		
		96h LC50: = 0.2 mg/L		
		(Pimephales promelas)		
		96h LC50: < 0.3 mg/L		
		(Pimephales promelas)		
		96h LC50: = 0.112 mg/L		
		(Poecilia reticulata) 96h		
		LC50: = 0.3 mg/L		
		(Cyprinus carpio) 96h		
		LC50: = 0.8 mg/L		
		(Cyprinus carpio)		
Propylene carbonate	72h EC50: > 500 mg/L	96h LC50: > 1000 mg/L	EC50 > 10000 mg/L 17 h	48h EC50: > 500 mg/L
	(Desmodesmus	(Cyprinus carpio) 96h	_	-
	subspicatus)	LC50: = 5300 mg/L		
		(Leuciscus idus)		

Persistence and Degradability

No information available.

Bioaccumulation

Component Information

Chemical name	Log Pow
Propylene carbonate	0.48

Mobility

No information available.

Other adverse effects No information available.

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13. DISPOSAL CONSIDERATIONS

Waste from residues/unused	Dispose of in accordance with local regulations. Dispose of waste in accordance with
products	environmental legislation.

Contaminated packaging Do not reuse empty containers.

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 Transport 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"
TDG	Not regulated

DOT Proper Shipping Name Hazard Class Emergency Response Guide Number	NOT REGULATED NON-REGULATED N/A 147
<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
<u>RID</u>	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.
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

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<u>NFPA</u>	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical
<u>HMIS</u>	Health hazards 0	Flammability 0	Physical hazards 0	Properties - Personal Protection X
Prepared By	Guangzhou	CP-UP Certification Tech	nology Service Co., Ltd.	
Issuing Date	07-26-2019	9		
Revision Note	No informat	ion 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

Inhalation Statement Not Hazardous Hazard statements Signal word Precautionary Statements	dust This is a battery. In case of rupture: Causes damage to organs through prolonged or repeated exposure Danger P302 + P352 - IF ON SKIN: Wash with plenty of water and soap P321 - Specific treatment (see supplemental first aid instructions on this label) P332 + P313 - If skin irritation occurs: Get medical advice/attention P362 + P364 - Take off contaminated clothing and wash it before reuse P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face
	protection P308 + P313 - IF exposed or concerned: Get medical advice/attention P405 - Store locked up P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal plant
Signal word Skin corrosion/irritation	Danger Category 2
Hazard statements	Causes skin irritation
Signal word	Warning
Serious eye damage/eye irritation	Category 2A
Hazard statements	Causes serious eye irritation
Signal word	Warning
Carcinogenicity	Category 2
Hazard statements	Suspected of causing cancer
Signal word	Warning
Specific target organ toxicity (repeated exposure)	Category 1
Skin corrosion/irritation	- (H315)
Serious eye damage/eye irritation	- (H319)
Carcinogenicity	- (H351)
STOT - repeated exposure	- (H372)
STOT - repeated exposure	
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Graphic

Graphic

Graphic

Hazard statements

Hazard statements

Precautionary Statements - EU (§28, 1272/2008)

Precautionary Statements

Skin

Precautionary Statements

Precautionary Statements - Prevention

plant

eat, drink or smoke when using this product

instructions on this label)

Precautionary Statements - Response



P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal

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 Do not breathe dust/fume/gas/mist/vapors/spray Do not

IF exposed or concerned: Get medical advice/attention Specific treatment (see supplemental first aid

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 If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse
Precautionary Statements - Storage	Store locked up
Precautionary Statements - Disposal	Dispose of contents/container to an approved waste disposal plant
The following values are calculated based	
on chapter 3.1 of the GHS document	
ATEmix (oral)	12,452.00
Units	mg/kg
ATEmix (dermal)	9,132.00
Units	mg/kg
Contains Phosphate(1-), hexafluoro-, lithiu	
Unknown acute toxicity	90.77 % of the mixture consists of component(s) of unknown hazards to the aquatic environment
Unknown Acute Aquatic Toxicity	90.77
Unknown Chronic Aquatic Toxicity	90.77
Product ATE Oral Status	1
Product ATE Dermal Status	1
Product ATE Inhalation - Gas Status	1
Product ATE Inhalation - Vapor Status	1
Product ATE Inhalation - Dust/Mist Status	1
Product Skin Corrosion Status	1
Product Eye Damage Status	1
Product Respiratory Sens. Status	1
Product Skin Sensitization Status	1
Product Mutagenic Status	1
Product Carcinogenic Status	1
Product Reproductive Toxicity Status	1
Product STOT Single Status	1
Product STOT Repeated Status	1
Product Aquatic Toxicity Status	1
Product Aspiration Toxicity Status	1
Product Ozone Status	1
Product and Component Overall	1
Classification Status	
STOT - repeated exposure	- (H372)
Unknown acute toxicity	30.9 % of the mixture consists of ingredient(s) of unknown toxicity
30.9 % of the mixture consists of i	ngredient(s) of unknown acute oral toxicity
	ngredient(s) of unknown acute dermal toxicity
	ngredient(s) of unknown acute inhalation toxicity (gas)
	ngredient(s) of unknown acute inhalation toxicity (vapor)
30.9 % of the mixture consists of i	ngredient(s) of unknown acute inhalation toxicity (dust/mist)
Symbols/Pictograms	
Symbols/Pictograms	
, ,	
Other hazards	Very toxic to aquatic life with long lasting effects
Health hazards	Skull and Crossbones
Health hazards	Exclamation mark
Inhalation Statement	dust
Health hazards	1