

DONGGUAN GOLDEN CEL BATTERY CO., LTD.

MATERIAL SAFETY DATA SHEET (MSDS)

According European Directive 2001/58/CE

Issue Date:03/09/2016

Rev: 2016-131G

1.Product & Company Identification

Product Description:	Li-Ion Polymer Battery	DONGGUAN GOLDEN CEL BATTERY CO., LTD www.celbattery.com	
Address:	YingHu industrial Zone,JiaoYiTang,TangXia Town,DongGuan		
Telephone:	+86-769-82195308	FAX:	+86-769-87982226

Product information:

Name:lithium-ion batteries Model:321129

Nominal voltage:3.7V Rated capacity:70mAh Electric energy: 0.259Wh

Chemical chearcterization:Mixture

Chemical Composition	Molecular formula	CAS NO.	Weight(%)
Lithium Cobalt Dioxide	LiCoO_2	12190-79-3	39.64
Aluminum	Al	7429-90-5	5.54
PVDF	$(\text{CH}_2\text{-CF}_2)_n$	24937-79-9	1.71
Craphite	C	7782-42-5	23.19
Copper	Cu	7440-50-8	9.7
SBR	...	9003-55-8	1.25
Polyethylene	PE	9002-88-4	0.05
Polypropylene	PP	9003-07-0	0.8
Lithium Hexafluorophoshate	LiPF_6	21324-40-3	15.4
Electrolyte Carbonate	EC	96-49-1	2.72

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3. Hazardous Identification:

Emergency overview:This product is an article which contains a chemical substance.

Safety information is given for exposure to the article as sold,Intended uses of the product should not result in exposure to the chemical substance.This is a battery.

In case of rupture:the below hazards exist.

GAS# 7429-90-5

Classification according to GHS

Specific target organ toxicity,repeated exposure(1)(Lung)

Hazardous to the aquatic environment,long-term hazard(4)

Label elements

Hazard pictogram(s):



Signal word:

Hazard statement(s):

H372 Causes damage to organs through prolonged or repeated exposure(Lung)

H413 May cause long lasting harmful effects to aquatic life

Precautionary statement(s):

Precaution:

P260 Do not breathe dust.

P264 Wash skin and clothing thoroughly after handling.

P270 Do not eat,drink or smoke when using this product.

P273 Avoid release to the environment.

Response:

P314 Get medical advice if you feel unwell.

Storage

None.

Disposal:

P501 Contents handling to approved waste treatment plants.



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Rev: 2016-131G

CAS#7440-50-8

Classification according to GHS

Specific target organ toxicity,single exposure;Respiratory tract irritation(3)

Specific target organ toxicity,repeated exposure(1)(liver)

Hazardous to the aquatic environment,long-term hazard(3)

Label elements

Hazard pictogram(s)



Signal pictogram(s):

Hazard statement(s):

H335 May cause respiratory irritation

H372 Causes damage to organs through prolonged or repeated exposure (liver)

H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s):

Prevention:

P271 Use only outdoors or in a well-ventilated area.

P260 Do not breathe dust:

P264 Wash skin and clothing thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

Response:

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER or doctor, if you feel unwell.



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MATERIAL SAFETY DATA SHEET (MSDS)

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Rev: 2016-131G

Storage

P403+P233 Store in a well-ventilated place.Keep container tightly closed.

Disposal:

P501 Contents or container handling to approved waste treatment plants.

Other hazards

Physical and chemical hazards:See Section 10

Human health hazards:See Section 11

Environmental hazards:See Section 12

4. First Aid Measures

Description of first aid measures

General information No special measures required.

After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

After skin contact

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

After inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After swallowing

Do not induce vomiting. Get medical attention.

Personal protective equipment for first-aid responders:Not available

Most important symptoms/effects,acute and delayed:Not available

Indication of immediate medical attention and special treatment needed:Not data available



5. Fire Fighting Measures

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Suitable extinguishing agents

Use extinguishing agent suitable for local conditions and the surrounding environment Such as dry powder , CO₂.

Unsuitable extinguishing media:

Not data available.

Special hazards arising from the chemical:

Special hazards arising from the substance or mixture

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150°C(302°F)), when damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

Specific protective actions fire-fighters:

Protective equipment:Wear self-contained respirator.Wear fully protective impervious suit.

6. Accidental Release Measures

Protective precautions:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Protective equipment:

Not data available.

Emergency procedures:

Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water.

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and materials for containment and cleaning up:

All waste must refer to United Nations,the national and regulations for disposal.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.



7. Handling & Storage

DONGGUAN GOLDEN CEL BATTERY CO., LTD.

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Precautions for safe handling

Consumption of food and beverage should be avoided in work areas.

Wash hands with soap and water before eating, drinking.

Ground containers when transferring liquid to prevent static accumulation and discharge.

Information about fire and explosion protection

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles

Store in a cool, dry, well-ventilated place.

Information about storage in one common storage facility

Keep away from heat, avoiding the long time of sunlight.

Further information about storage conditions

Keep container tightly sealed.

Specific and use

No further relevant information available.

8. Exposure Control/Personal Protection

Control parameters

CAS No	ACGIH	NIOSH	OSHA
12190-79-3	N/A	N/A	N/A
24937-79-9	N/A	N/A	N/A
7782-42-5	TLV-TWA 2mg/m3	RELs-TWA 2.5mg/m3	RELs-TWA 15mppct
61789-96-6	N/A	N/A	N/A
96-49-1	N/A	N/A	N/A
7429-90-5	TLV-TWA 10mg/m3 TLV-TWA 5mg/m3	RELs-TWA 2mg/m3 RELs-TWA 5mg/m3 RELs-TWA 10mg/m3	RELs-TWA 5mg/m3 RELs-TWA 5mg/m3
7440-50-8	TLV-TWA 0.2mg/m3 TLV-TWA 1mg/m3	RELs-TWA 1mg/m3 RELs-TWA 0.1mg/m3	RELs-TWA 0.1mg/m3 RELs-TWA 1mg/m3
9002-88-4	N/A	N/A	N/A
21324-40-3	N/A	N/A	N/A
9003-07-0	N/A	N/A	N/A

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Appropriate engineering controls:

The usual precautionary measures for handling chemicals should be followed

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Personal Protective Equipment

Respiratory protection: Wear suitable protective mask in order to reduce the respiratory System. A large number of leakage,

wear chemical protective clothing, including self-contained breathing apparatus.

Hand Protection: Wear appropriate protective gloves to reduce skin contact.

Eyes Protection: Wear safety goggles or eye protection combined with respiratory protection

Skin and Body Protection: Working environment required, wear suitable protective clothing to minimize contact with skin.

The type of protective equipment must be according to the concentration and the content of certain hazardous

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Colour:

Silver.

Physical State:

Prismatic.

Odour:

Not available.

Odour:

Not available.

pH:

Not available.

Melting point/freezing point:

Not available.

Initial boiling point and boiling range:

Not available.

Flash point:

Not available.

Evaporation rate:

Not available.

Flammability(solid, gas):

Not available.

Explosion Limits(vol% in air):

Not available.

Vapour pressure, kPa at 20°C:

Not available.

Vapour density:

Not available.

Density/Relative density(water=1):

Not available.

solubility(ies):

Not available.

Partition coefficient:n-octanol/water:

Not available.

Auto-ignition temperature:

Not available.

Decomposition temperature:

Not available.

Viscosity

Not available.

Other information:

Voltage

3.7V

Electric capacity

70mAh

Electric Energy

0.259Wh

10. Stability and Reactivity

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Rev: 2016-131G

Reactivity: Data not available.

Chemical stability: Stable.

Possibility of hazardous reactions: Data not available.

Conditions to Avoid: Flames, sparks, and other sources of ignition, incompatible materials

Incompatibilities materials: Oxidizing agents, acid, base

Hazardous decomposition products: Carbon monoxide, carbon dioxide, lithium oxide fumes

11. Toxicological information

Acute Toxicity

CAS No.	LC50/LD50
12190-79-3	Not available.
24937-79-9	Not available.
7782-42-5	Not available.
61789-96-6	Not available.
96-49-1	LD50Rat(Oral):10g/kg
9003-07-0	Not available.
7429-90-5	Not available.
7440-50-8	Not available.
9002-88-4	Not available.
21324-40-3	Not available.

Skin corrosion/irritation: Not available.

Serious eye damage/irritation: Not available.

Respiratory or Skin sensitization: Not available.

Germ Cell mutagenicity: Not available.

Carcinogenicity: Not available.

Reproductive toxicity: Not available.

Specific target organ toxicity-Single exposure: Not available.

Specific target organ toxicity-Repeated exposure: Not available.

Aspiration hazard: Not available.

Information on the likely of exposure: Not available.

Eye: Not available.

Skin: Not available.

Ingestion: Not available.

Inhalation: Not available.

12. Ecological information

Ecological toxicity: No data available.

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Other adverse effects: No data available.

13. Disposal considerations



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Disposal methods:

Recommendation:

Consult state,local or national regulations to ensure proper disposal.

Uncleaned packaging

Recommendation:Disposal must be made according to official regulations.

14. Transport Information

According to the Packing Instruction 965~967 IATA DGR 57th Edition for transportation, or the special provision 188 of IMDG, or the <<Recommendations On The Transport Of Dangerous Goods-Model Regulations>> (18).

More information concerning shipping, testing, marking and packaging can be obtained from Label master at <http://www.labelmaster.com>.

Separate Lithium-ion batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain.

Transport Fashion: By air, by sea, by railway, by road.

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

CAS No.	TSCA	IECSC	DSL/NDSL	EINECS/ELINCS/NLP
12190-79-3	Listed	Listed	Listed DSL	Listed
24937-79-9	Listed	Listed	Listed DSL	Listed
24937-79-9	Listed	Listed	Listed DSL	Listed
9002-88-4	Listed	Listed	Listed DSL	Listed
7440-50-8	Listed	Listed	Listed DSL	Listed
7429-90-5	Listed	Listed	Listed DSL	Listed
9003-07-0	Listed	Listed	Listed DSL	Not Listed
61789-96-6	Listed	Listed	Listed DSL	Not Listed
21324-40-3	Listed	Listed	Listed DSL	Listed
96-49-1	Listed	Listed	Listed DSL	Listed

16. Additional Information

Abbreviations and acronyms

CLP: EU regulation (EC) No 1272/2008 on classification, labelling and packaging of chemical substances and mixtures.

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CAS:	Chemical Abstracts Service (Division of the American Chemical Society).
ACGIH:	American Conference of Governmental Industrial Hygienists
TLV:	Threshold Limit Value
IATA:	International Air Transport Association
IMDG:	International Maritime Dangerous Goods
LC50:	lethal concentration, 50 percent kill
LD50:	lethal dose, 50 percent kill
TWA:	Time Weighted Average
TSCA:	United States Toxic Substances Control Act Section 8(b) Inventory
EINECS:	European Inventory of Existing Commercial Chemical Substances
Model:	Recommendations on the Transport of Dangerous Goods Model
Regulations:	Regulations

17.UN Classes:

Classified as Lithium ion batteries (UN3481), 2016IATA Dangerous Goods regulations 57th edition Packing Instruction PI965~967 Section II is applied. The product is handled as Non-Dangerous Goods by meeting the following requirements. (1)

Lithium ion cells and batteries offered for transport are not subject to other additional requirements of the UN Regulations if they meet the following: (1) (3)

1. for cells, the watt-hour rating is not more than 20Wh;
2. for batteries, the watt-hour rating is not more than 100Wh.
3. each cell or battery is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria Part III subsection 38.3.

All Li Polymer batteries with the necessary testing requirements under the UN38.3 Manual of Tests and Criteria as referenced in the following transportation regulations.

1. UN recommendations on the Transport of Dangerous Goods Model Regulations.
2. U.S Department of Transportation of Dangerous Goods Model Regulations.
3. International Civil Aviation Organization (ICAO) Technical Instructions
4. International Maritime Dangerous Goods (IMDG) code

Li Polymer Battery are exempted from these regulations since they meet all UN testing requirements and contain no more than 8 grams of equivalent lithium content (see 49 CFR 173.185 of the US HMR, IATA Dangerous Goods Regulations and Special Provision 188 of the IMDG Code and UN model Regulations.

18. Other information

The information contained herein is furnished without warranty of any kind. Users should consider this data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

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Reference

Chemical substances information: Japan Advanced Information center of Safety and Health
International Chemical Safety Cards (ICSCs): International Occupational Safety and Health Information
Centre (CIS)
2002 TLVs and BEIs: American Conference of Governmental Industrial Hygienists (ACGIH)
Dangerous Goods Regulations -The 57th edition 1 January 2016: International Air Transport
Association (IATA)
IMDG Code - 2006 Edition: International Maritime Organization (IMO)
RTECS (CD-ROM)
MSDS of raw materials prepared by the manufacturers.



End