



Luoyang
Yuexing

Luoyang Moon&Star New Energy Technology Co. , LTD

Material Safety Data Sheet

Luoyang Moon&Star New Energy Technology Co.,LTD

Jingjin North Road Build B2, East science and Technology Park, Luoxin industrial agglomeration area, Luoyang, China

Data sheet NO. YX0119080201 Date: Aug.2.2019

Details info NO. : YX0119080202

Sample Name : Anode materials of li-ion battery- GS16

End Uses : Lithium ion batteries for power supply

Composition/Ingredient of sample: See Section 3 Composition/information on ingredients on the report

Job Receiving Date : 7.22,2019

Last Information Date : 8.2,2019

Preparation Period : 7.26-8.2,2019

Service Requested : Preparation of Safety Data Sheet (SDS) for the sample with submitted information

Summary : As per request, the contents and formats of the SDS are prepared in accordance with European Commission Directives 67/548/EEC,1999/45/EC, Regulation (EC) No 1272/2008, Regulation (EC) No 1907/2006 and Regulation (EU) No 453/2010, and is provided per attached.

Signed for and on behalf of Luoyang Moon&Star New Energy Technology Co.,LTD

William Yang

Quality Manager

Material Safety Data Sheet

Regulation No. 1907/2006/EC, 1272/2008/EC

Trade name: Anode materials of li-ion battery GS16

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· Product identifier

· Trade name: Anode materials of li-ion battery

· Registration number: Data not available

· Relevant identified uses of the substance or mixture and uses advised against

· Application of the substance/ the preparation: Lithium ion batteries for power supply

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Luoyang Moon&Star New Energy Technology Co.,LTD

Jingjin North Road Building B2, East science and Technology Park, Luoxin industrial agglomeration area, Luoyang, China

Tel: 0379-60212671

Fax: /

· Only Representative / other EU contact point

Buyer is not located in European Union. European Union Member State contact not available.

Further information obtainable from: Luoyang Moon&Star New Energy Technology Co.,LTD

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Reference number: YX0119080202

Material Safety Data Sheet

Regulation No. 1907/2006/EC, 1272/2008/EC

Trade name: Anode materials of li-ion battery GS16

SECTION 2: Hazards identification

- Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Sol. 1 H228 Flammable solid.

Self-heat. 1 H251 Self-heating; may catch fire.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

R10: Flammable.

- Label elements
- Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to Regulation (EC) No 1272/2008.

- Hazard pictograms



GHS02

- Signal word Danger
- Hazard-determining components of labelling: Not applicable
- Hazard statements

H228 Flammable solid.

H251 Self-heating; may catch fire.

- Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.

P413 Store bulk masses greater than ... kg at temperatures not exceeding ...°C.

P420 Store away from other materials.

- Other hazards Not applicable
- Results of PBT and vPvB assessment
- PBT: Not applicable
- vPvB: Not applicable

Material Safety Data Sheet

Regulation No. 1907/2006/EC, 1272/2008/EC

Trade name: Anode materials of li-ion battery GS16

SECTION 3: Composition/information on ingredients

Chemical characterization: Mixtures

· Description:

Mixture of the substances listed below with nonhazardous additions.

For the wording of the listed risk phrases refer to section 16.

· Dangerous components:

CAS: 7440-44-0 carbon 99.97%

EINECS: 231-153-3 R10



CAS: 7439-89-6 Iron 0.015%

EINECS: 231-096-4 FR11



CAS: 7440-48-4 cobalt 0.005%

EINECS: 231-158-0 Xn R 4.2 / 4.3



Index number: 027-001-00-9 R53



Resp.Sens.1.H334, Skin sens.1.H317; Aquatic Chronic4.H413



CAS: 7440-66-6 zinc 0.0025%

EINECS: 231-175-3 N R50/53



Index number: 028-002-01-4 Aquatic Acute 1, H400; Aquatic Chronic1, H317;



CAS: 7440-02-0 nickel powder (particle diameter < 1 mm) 0.0025%

EINECS: 231-111-4 T R48/233; Xn R 40; Xi R 43



Index number: 028-002-01-4 R 52/53

C arc.Cat.3



Carc.2,H351; STOT RE 1,H372; Skin Sens.1,H317;



Aquatic Chronic3H412

CAS: 7440-50-8 copper powder 0.002%

FR11; N R50



Flam.SOL.1,H228; Aquatic Acute 1,H400



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Trade name: Anode materials of li-ion battery GS16

CAS: 7440-21-3

silicon

0.002%

EINECS: 231-130-8



FR11



Flam.SOL2, H228;



Eye Irrit.2.H319;

CAS: 7429-90-5

aluminium powder (stabilised)

0.001%

EINECS: 231-072-3



FR11-15

Index number: 013-002-00-1



Flam.SOL.1, H288; Water-react.2, H261

Non-dangerous component: Not applicable

SECTION 4: First aid measures

Description of first aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

In the process of work, it is best not to wear contact lenses.

· **After swallowing:**

Rinse out mouth with water.

Never give anything by mouth to an unconscious person.

If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

Material Safety Data Sheet

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Trade name: Anode materials of li-ion battery GS16

SECTION 5: Firefighting measures

- *Extinguishing media*
- *Suitable extinguishing agents:*
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- *For safety reasons unsuitable extinguishing agents: Water with full jet*
- *Special hazards arising from the substance or mixture No further relevant information available.*
- *Advice for firefighters*
- *Protective equipment:*
Wear fully protective suit.
Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

- *Personal precautions, protective equipment and emergency procedures*
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Avoid formation of dust.
Keep away from ignition sources.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Avoid contact with eyes.
- *Environmental precautions: Do not allow to enter sewers/ surface or ground water.*
- *Methods and material for containment and cleaning up:*
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
- *Reference to other sections*
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- *Handling:*
- *Precautions for safe handling*
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Keep receptacles tightly sealed.
Prevent formation of dust.
Avoid contact with eyes.
- *Information about fire – and explosion protection:*
Keep ignition sources away – Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

Material Safety Data Sheet

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Trade name: Anode materials of li-ion battery GS16

- Storage:
- Conditions for safe storage, including any incompatibilities:
- Requirements to be met by storerooms and receptacles:
Store in a cool location.
Store only in the original receptacle.
- Information about storage in one common storage facility:
Store away from foodstuffs.
Store away from flammable substances.
Protect from humidity and water.
- Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.
- Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

· Control parameters

· ingredients with limit values that require monitoring at the workplace:
7440-44-0 carbon
AGW(G) Long-term value: $3 \cdot 10^{-2} \text{ mg/m}^3$ 2 (II) ; *alveolanige**einatembare Fraktion;AGS
WEL(GB) Long-term value: 10^{-4} mg/m^3 *inhalable dust**respirable
7440-66-6 zinc
MAK(G) Long-term value: $0.1 \cdot 10^{-2} \text{ mg/m}^3$ *alveolengangig;**einatembare
7440-50-8 copper powder
MAK(G) Long-term value: 0.1 Emg/m^3 WEL(GB) Short-term value: $2 \cdot 10^{-1} \text{ Emg/m}^3$ Long-term value: $0.2 \cdot 10^{-1} \text{ Emg/m}^3$ *fume**dusts and mists(as Cu)
VME(F) Short-term value: 2 mg/m^3 Long-term value: $0.2 \cdot 10^{-1} \text{ mg/m}^3$ *fumees**poussieres,en Cu
7440-02-0 nickel powder (particle diameter < 1 mm)
MAK(G) einatembare Fraktion; vgl.Abschn.XII VME(F) Long-term value: 1 mg/m^3 C2
7440-02-0 cobalt
MAK(G) einatembare Fraktion;vgl.Vgl.Abschn.XIII

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Trade name: Anode materials of li-ion battery GS16

7440-21-3 silicon

WEL(GB) Long-term value: $10 \cdot 4 \cdot \text{mg/m}^3$
*inhalable dust **respirable dust
VME(F) Long-term value: 10mg/m^3

DNELs: Data not available

· PNECs: Data not available

· Additional information: The lists valid during the making were used as basis.

· Exposure controls

· Based on composition shown in Section 3, the following measures are suggested for occupational safety measure:

· Personal protective equipment:

· General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

· Respiratory protection: Suitable respiratory protective device recommended.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form: Powder

Colour: Gray and black

· Odour: Odourless

· Odour threshold: Data not available

PH 值:

6.0-8.0

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Trade name: Anode materials of li-ion battery GS16

Change in condition

- Melting point/Melting range: Data not available
- Boiling point/Boiling range: Data not available
- Freezing point: Data not available
- Flash point: Data not available
- Flammability (solid, gaseous): Data not available
- Auto-ignition temperature: Data not available
- Decomposition temperature: Data not available
- Self-igniting: Product is not selfigniting.
- Explosive properties: Product does not present an explosion hazard.
- Explosion limits:
 - Lower: Data not available
 - Upper: Data not available
- Oxidizing properties Data not available.
- Vapour pressure: Data not available
- Density: 0,8~1,1 g/cm³
- Relative density Data not available
- Vapour density Data not available
- Evaporation rate Data not available
- Solubility in / Miscibility with water: Insoluble.
- Partition coefficient (n-octanol/water):
Data not available
- Viscosity:
Dynamic: Data not available
Kinematic: Data not available

SECTION 10: Stability and reactivity

- Reactivity No decomposition if used according to specification.
- Chemical stability Stable under recommended storage conditions.
- Possibility of hazardous reactions No dangerous reactions known.
- Conditions to avoid No further relevant information available.
- Incompatible materials: Strong oxidizing agents
- Hazardous decomposition products: Hazardous decomposition products formed under fire conditions.

SECTION 11: Toxicological information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values relevant for classification:
 - 7439-89-6 Iron Oral LD50 30000mg/kg (rat)
 - 7440-48-4 cobalt Oral LD50 6170mg/kg (rat)
 - 7440-21-3 silicon Oral LD50 3160mg/kg (rat)
- Primary irritant effect:
 - on the skin: Irritating effect possible.
 - on the eye: Irritating effect possible.

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Trade name: Anode materials of li-ion battery GS16

SECTION 12: Ecological information

- *Toxicity*
- *Aquatic toxicity: No further relevant information available.*
- *Persistence and degradability No further relevant information available.*
- *Behaviour in environmental systems:*
- *Bioaccumulative potential No further relevant information available.*
- *Mobility in soil No further relevant information available.*
- *Additional ecological information:*
- *General notes: Generally not hazardous for water*
- *Results of PBT and vPvB assessment*
- *PBT: Not applicable.*
- *vPvB: Not applicable.*

SECTION 13: Disposal considerations

- *Waste treatment methods*
- *Recommendation Smaller quantities can be disposed of with household waste.*
- *Uncleaned packaging:*
- *Recommendation: Disposal must be made according to official regulations.*

SECTION 14: Transport information

UN No.

ADR, IMDG, IATA

UN1361

UN proper shipping name

ADR

1361 CARBON

IMDG, IATA

CARBON

- *Transport hazard class(es)*
- *ADR, IMDG, IATA*



· *Class*

4.2 Substances liable to spontaneous combustion.

· *Label*

4.2

· *Packing group*

· *ADR, IMDG, IATA*

II

· *Environmental hazards*

· *Marine pollutant:*

No

· *Special precautions for user*

Warning: Substances liable to spontaneous combustion.

· *Danger code (Kemler):*

40

· *EMS Number:*

F-A,S-J

Material Safety Data Sheet

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Trade name: Anode materials of li-ion battery GS16

· Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code Not applicable.

· Transport/Additional information:

· ADR

· Limited quantities (LQ) 0

· Transport category 2

· Tunnel restriction code D/E

UN "Model Regulation": UN1361, CARBON, 4.2, II

SECTION 15: Regulatory information

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

· MAK (German Maximum Workplace Concentration)

7440-48-4 cobalt

· National regulations:

· Waterhazard class: Generally not hazardous for water.

· Other regulations, limitations and prohibitive regulations

SVHC Candidate List of REACH Regulation Annex XIV Authorisation (20/6/2013)

None of the ingredients is listed.

· REACH Regulation Annex XVII Restriction (13/2/2013)

None of the ingredients is listed.

· REACH Regulation Annex XIV Authorization List (17/4/2013)

None of the ingredients is listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

· Relevant phrases

H228 Flammable solid.

H251 Self-heating: may catch fire.

H261 In contact with water releases flammable gases.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H351 Suspected of causing cancer.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

R10 Flammable.

R11 Highly flammable.

R15 Contact with water liberates extremely flammable gases.

R40 Limited evidence of a carcinogenic effect.

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Trade name: Anode materials of li-ion battery *GS16*

R42/43 May cause sensitisation by inhalation and skin contact.

R43 May cause sensitisation by skin contact.

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R50 Very toxic to aquatic organisms.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R53 May cause long-term adverse effects in the aquatic environment.

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The contents and format of this SDS are in accordance with REGULATION (EC) No 1272/2008, REGULATION (EC) No 1907/2006, Regulation (EU) No 453/2010 and EU Commission Directive 1999/45/EC, 67/548/EEC.

DISCLAIMER OF LIABILITY

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· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International

Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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