

SDS Report

Sample Description Lithium ion cell
 TNL-ITR18650
 (3.7V 1800mAh 6.66Wh)

Applicant Tianneng Saft Energy Joint Stock Company



No.: BOI6PASP26193516

Code: sw7afm53am


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		成都实验室: (028) 87702708

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Safety Data Sheet (SDS)

According to GHS (ST/SG/AC.10/30/Rev.8)

Lithium ion cell TNL-ITR18650

Section 1: Identification

Chemical Product name: Lithium ion cell

Alternative names: N/A

Company product code: TNL-ITR18650

Recommended use: Power supply

Restrictions on use: No data available

Supplier name: Tianneng Saft Energy Joint Stock Company

Address: No. 18, Baoqiao Road, Huaxi Industrial functional zone, Changxing County, Zhejiang Province 313100 PEOPLES REPUBLIC OF CHINA

Phone number: +86(572) 6216 678

FAX: --

E-mail: wjy@tiannenggroup.com

Emergency phone number: +86(572) 6216 678

Section 2: Hazard identification

GHS Classification: Not applicable

GHS label elements:

pictogram(s): --

Signal word: --

Hazard statement(s):--

Precautionary statement(s):

•**Prevention:** --

•**Response:** --

•**Storage:** --

•**Disposal:** --

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Other Hazards:

Lithium ion batteries contain flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperatures (> 150 0 C (302 0 F)), when damaged or abused (e.g., mechanical damage or electrical overcharging). May burn rapidly with flare-burning effect. May ignite other batteries in close proximity.

Contact with battery electrolyte may be irritating to skin, eyes and mucous membranes. Fire will produce irritating, corrosive and/or toxic gases. Fumes may cause dizziness or suffocation.

Environmental hazards: If the battery is discarded into the environment, the harmful contents inside may be dangerous.

Section 3: Composition/information on ingredients

Article.

Chemical Name	CAS No.	Composition (% by weight)
Iron	7439-89-6	30-40
Cobalt lithium manganese nickel oxide	182442-95-1	25-30
Graphite	7782-42-5	15-20
Phosphate(1-), hexafluoro-, lithium (1:1)	21324-40-3	10-15
Copper	7440-50-8	5-9
Aluminum	7429-90-5	2-4
Lithium	7439-93-2	2-3
Polyvinylidene Fluoride	24937-79-9	0.5-1

Section 4: First-aid measures

Skin Contact	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
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	IF exposed or concerned: Get emergency medical help immediately.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.
Inhalation	IF INHALED: remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell.
Ingestion	IF SWALLOWED: Get emergency medical help immediately. Rinse mouth. Do NOT induce vomiting.

Personal protective equipment for first-aid responders:

Use proper personal protective equipment as indicated in Section 8.

Most important symptoms/effects, acute and delayed:

See Section 11 for more information.

Indication of immediate medical attention and special treatment needed:

Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Section 5: Fire-fighting measures

Suitable extinguishing media:

Small Fire:

Dry chemical, CO₂, water spray or regular foam.

Large Fire:

Water spray, fog or regular foam.

Unsuitable extinguishing media: No data available.

Specific Hazards arising from the chemical:

Lithium ion batteries contain flammable liquid electrolyte that may vent, ignite and produce sparks when subjected to high temperatures (> 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 close proximity.

Fire will produce irritating, corrosive and/or toxic gases.

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Burning batteries may produce toxic hydrogen fluoride gas.
Fumes may cause dizziness or suffocation.

Specific protective actions for fire-fighters:

Alert Fire Brigade and tell them location and nature of hazard.

As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.

Keep unauthorized personnel away.

Stay upwind, uphill and/or upstream.

Ventilate closed spaces before entering.

Move containers from fire area if you can do it without risk.

Wear positive pressure self-contained breathing apparatus (SCBA).

Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

Do not get water inside containers.

Cool containers with flooding quantities of water until well after fire is out.

Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

ALWAYS stay away from tanks engulfed in fire.

Section 6: Accidental release measures

Person-related Safety Precautions: See section 8.

Measures for Environmental Protection: See section 12.

Measures for Cleaning/Collecting:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Stop leak if you can do it without risk.

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Prevent entry into waterways, sewers, basements or confined areas.
Absorb with earth, sand or other non-combustible material.
Leaking batteries and contaminated absorbent material should be placed in metal containers.

Section 7: Handling and storage

Precautions for safe handling:

DO NOT allow material to contact humans, exposed food or food utensils.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.
Avoid contact with incompatible materials.
When handling, DO NOT eat, drink or smoke.
Avoid physical damage to containers.
Always wash hands with soap and water after handling.
Work clothes should be laundered separately. Launder contaminated clothing before re-use.
Use good occupational work practice.

Conditions for safe storage:

Store in original containers.
Keep containers securely sealed.
Store in a cool, dry, well-ventilated area.
Use explosion-proof lighting and ventilation facilities;
Cells and batteries must not be packed in the same outer packaging with goods classified in Class 1 other than Division 1.4S, Division 2.1, Class 3, Division 4.1 or Division 5.1.
Check all containers are clearly labelled and free from leaks.
Keep away from incompatible substances (see section 10), any sources of ignition or heat (e.g. open flames, hot surfaces), feedstuffs, beverages and foods.
The storage area should be equipped with the corresponding species and quantity of fire-fighting equipments and emergency equipment.

Section 8: Exposure controls/personal protection

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Occupational exposure limits:

CAS No.	ACGIH TLV	NIOSH REL	OSHA PEL
7439-89-6	No data available	No data available	No data available
182442-95-1	No data available	No data available	No data available
7782-42-5	2 mg/m ³ (respirable dust) TWA	2.5 mg/m ³ (respirable dust) TWA	(15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction) TWA
21324-40-3	No data available	No data available	No data available
7440-50-8	1 mg/m ³ TWA	1 mg/m ³ TWA	1 mg/m ³ TWA
7429-90-5	No data available	10 mg/m ³ (total) TWA 5 mg/m ³ (resp) TWA	15 mg/m ³ (total) TWA 5 mg/m ³ (resp) TWA
7439-93-2	No data available	No data available	No data available
24937-79-9	No data available	No data available	No data available

Emergency limits

CAS No.	Revised IDLH
7439-89-6	No data available
182442-95-1	No data available
7782-42-5	1250 mg/m ³
21324-40-3	No data available
7440-50-8	100 mg/m ³ (as Cu)
7429-90-5	No data available
7439-93-2	No data available
24937-79-9	No data available

Appropriate engineering controls:

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

The design of a ventilation system must match the particular process and chemical or contaminant in use.

Personal protective equipment:

☎ Hotline 400-819-5688 Pony Testing Group Shanghai Co.,Ltd.

www.ponytest.com

Company Address:2F.,No.7 Building, No.99, Wen Xiangdong Road,SongJiang District,Shanghai,China Tel:021-37895599

Test Address:No.6 Building,No.7/1F Building,No.7/3F Building, No.99, Wen Xiangdong Road, SongJiang District, Shanghai, China

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Eyes Protection:

Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted.

Eye wash unit.

Skin and Body Protection:

Overalls.

P.V.C. apron.

Respiratory Protection:

No special requirement under normal conditions.

It is recommended to wear appropriate protective respiratory masks when work environment needed.

A full face positive pressure supplied-air respirator or a self contained breathing apparatus should be used when large spilled or fire.

If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand Protection:

Wear protective gloves, e.g. PVC.

Thermal hazards: Not Available.

Section 9: Physical and chemical properties

Physical State/ Colour: : Blue cylindrical solid

Odour: Odorless

Melting range/ Freezing Point: No data available

Boiling point or initial boiling point and boiling range: No data available

Explosive limits, vol% in air: No data available

Flash Point (°C): No data available

Auto-ignition Temperature: No data available

Decomposition temperature: No data available

pH: No data available

Kinematic viscosity: No data available

Solubility in Water: No data available

Partition coefficient: n-octanol/water: No data available

Vapor Pressure: No data available

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Density / Relative density: No data available
Relative vapor density: No data available
Particle characteristics: No data available
Flammability (solid, gas): No data available
Other: Nominal voltage:3.7V, Rated capacity:1800mAh,
Nominal energy 6.66Wh

Section 10: Stability and reactivity

Reactivity: Unstable in the presence of incompatible materials. See section 7.

Chemical Stability:

Hazardous polymerisation will not occur.

When a battery cell is exposed to an external short-circuit, crushed, modification, high temperature, open flames, it will be the cause of heat generation and ignition.

Conditions to Avoid:

Stable under normal storage and handling conditions.

Incompatibilities with Other Materials:

Strong oxidants, strong acids, strong bases, conductive material, sea water.

Hazardous Decomposition Products: see section 5.

Section 11 – Toxicological information

Acute toxicity:

CAS No.	LD ₅₀ /LC ₅₀
7439-89-6	LD ₅₀ =30000mg/kg rat oral
182442-95-1	Fatal if inhaled (ECHA)
7782-42-5	No data available
21324-40-3	No data available
7440-50-8	No data available

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7429-90-5	No data available
7439-93-2	No data available
24937-79-9	No data available

Skin irritation/corrosion:

CAS#21324-40-3

Causes severe skin burns and eye damage.

(ECHA)

CAS#7439-93-2

It was set as Category 1 from description that caustics or severe irritation is indicated to the eye .

(ICSC (J), (1999), HSFS (1999), and SITTIG (4th, 2002))

Serious eye damage/irritation:

CAS#21324-40-3

Causes serious eye damage.

(ECHA)

CAS#7439-93-2 as shown above.

Respiratory or Skin sensitisation: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity:

CAS#182442-95-1

May cause cancer through 《Inhalation》 .

(ECHA)

Reproductive toxicity: No data available.

Specific target organ toxicity-Single exposure:

CAS#7439-93-2

When inhaling it, pulmonary edemas is caused.

(HSFS (1999), and SITTIG (4th, 2002))

Specific target organ toxicity-Repeated exposure:

CAS#182442-95-1

May cause damage to organs <lung> through prolonged or repeated exposure 《Inhalation》 .

(ECHA)

CAS#21324-40-3

Causes damage to organs <Bones, teeth> through prolonged or repeated exposure.

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(ECHA)

Aspiration hazard: No data available.

Section 12 - Ecological information

Toxicity:

CAS No	Ecological Toxicity
7439-89-6	No data available
182442-95-1	Harmful to aquatic life with long lasting effects (ECHA)
7782-42-5	96hr LC50 for fish =100mg/L 48 hr EC50 for aquatic invertebrates=100mg/L 72 hr EC50 for aquatic algae and cyanobacteria= 100mg/L
21324-40-3	96hr LC50 for fish =51 - 369 mg/L 48 hr NOEC for aquatic invertebrates=100 mg/L 96 hr EC50 for aquatic algae and cyanobacteria=100mg/L
7440-50-8	96hr LC50 for fish =0.0028 - 9.150 mg/L 48 hr EC50 for aquatic invertebrates=0.001-1.213 mg/L 96 hr EC50 for aquatic algae and cyanobacteria=0.047 mg/L
7429-90-5	96hr LC50 for fish =0.078 - 218. 6441 mg/L 48 hr EC50 for aquatic invertebrates=1.5- 2.56 mg/L 96 hr EC50 for aquatic algae and cyanobacteria=0.0054 - 0.570 mg/L
7439-93-2	96hr LC50 for fish =109 mg/L 48 hr EC50 for aquatic invertebrates=19.1 - 34.3 mg/L 72 hr EC50 for aquatic algae and cyanobacteria=41.62 - 153.44 mg/L
24937-79-9	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.

Section 13 - Disposal considerations

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Disposal method:

Disposal should be in accordance with applicable regional, national and local laws and regulations.

The generation of waste should be avoided or minimized wherever possible.

Contaminated Packaging:

Contaminated packaging material should be treated equivalent to residual chemical. Clean packaging material should be subjected to waste management schemes (recovery recycling, reuse) according to local legislation. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14 - Transport information

Air transport (IATA DGR 61st)

UN Number: UN3480

UN Proper Shipping Name: Lithium metal batteries

Transport hazard class: 9

Subsidiary risk: --

Packaging group: --



Packaging Sign:

Other Information:

The UN38.3 test passed (Report No.: BOIMKL9077668521 Pony Testing International Group Shanghai Co., Ltd.), the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5. (Report No.: BOIHHPYO77709721 Pony Testing International Group Shanghai Co., Ltd.). The package passed the 1.2m drop test. (Report No.: BOIAGHZO19072746 Pony Testing International Group Shanghai Co., Ltd.)

Aircraft limitations: Cargo Aircraft Only

Packing Instructions: PI965 section IB

Special provisions: --

Maximum Qty / Pack: 10kg

Special precautions for user:

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Electrical batteries containing lithium ion encased in a rigid metallic body. Lithium ion batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.

Sea transport (IMDG CODE 39-18 edition)

UN Number: --

UN Proper Shipping Name: LITHIUM ION BATTERIES

Transport hazard class: --

Subsidiary risk: --

Packaging group: --



Packaging Sign:

Other Information:

The UN38.3 test passed (Report No.: BOIMKL9077668521 Pony Testing International Group Shanghai Co., Ltd.), the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5. (Report No.: BOIHPYO77709721 Pony Testing International Group Shanghai Co., Ltd.).

The package passed the 1.2m drop test. (Report No.: BOIAGHZO19072746 Pony Testing International Group Shanghai Co., Ltd.)

Packing Instructions: --

IBC Instructions: --

Maximum Qty / Pack: 30kg GW

Special provisions: 188

The goods are not subject to other provisions of IMO IMDG Code according to special provision 188.

Special precautions for user:

Electrical batteries containing lithium ion encased in a rigid metallic body. Lithium ion batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.

Marine Pollutant (Y/N): N

Land transport (TDG21st)

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UN Number: --

UN Proper Shipping Name: LITHIUM ION BATTERIES

Transport hazard class:--

Subsidiary risk: --

Packaging group: --



Packaging Sign:

Other Information:

The UN38.3 test passed (Report No.: BOIMKL9077668521 Pony Testing International Group Shanghai Co., Ltd.), the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5. (Report No.: BOIHHPY077709721 Pony Testing International Group Shanghai Co., Ltd.). The package passed the 1.2m drop test. (Report No.: BOIAGHZO19072746 Pony Testing International Group Shanghai Co., Ltd.)

Packing Instructions: --

IBC Instructions: --

Maximum Qty / Pack: 30kg GW

Special provisions: 188

The goods are not subject to other provisions of TDG according to special provision 188.

Special precautions for user:

Electrical batteries containing lithium ion encased in a rigid metallic body. Lithium ion batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.

Section 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

CAS No.	TSCA	IECSC	EINECS/ ELINCS/	DSL/NDSL

			NLP	
7439-89-6	Listed	Listed	Listed	DSL
182442-95-1	Listed	Listed	Listed	--
7782-42-5	Listed	Listed	Listed	DSL
21324-40-3	Listed	Listed	Listed	NDSL
7440-50-8	Listed	Listed	Listed	DSL
7429-90-5	Listed	Listed	Listed	DSL
7439-93-2	Listed	Listed	Listed	DSL
24937-79-9	Listed	Listed	Listed	DSL

Section 16 – Other information

Issue Time: 2020-06-15

Issue Department: Technical department

Modification record:

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Other Information:

CAS: (Chemical Abstracts Service);

DNELs: Derived No- or Minimal Effect Level (DN(M)EL) ;

EC: (European Commission);

ACGIH: (American Conference of Governmental Industrial Hygienists);

NIOSH: (US National Institute for Occupational Safety and Health);

OSHA: (US Occupational Safety and Health);

TLV: (Threshold Limit Value);

TWA: (Time Weighted Average);

STEL: (Short Term Exposure Limit);

PEL: (Permissible Exposure Level);

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REL: (Recommended Exposure Limit);
PC-STEL: (Permissible concentration-time weighted average);
PC-TWA: (Permissible concentration-short time exposure limit);
PNECs: Predicted No-Effect Concentration;
LC50: (Lethal concentration, 50 percent kill);
LD50: (Lethal dose, 50 percent kill);
IARC: (International Agency for Research on Cancer);
EC50: (Median effective concentration);
BCF: (Bioconcentration Factor);
BOD: (Biochemical oxygen demand);
NOEC: (No observed effect concentration);
NTP: (US National Toxicology Program);
RTECS: (Registry of Toxic Effects of Chemical Substances);
IATA: (International Air Transport Association);
IMDG: (International Maritime Dangerous Goods);
TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations);
TOC: (Total Organic Carbon);
TSCA: (Toxic Substances Control Act of USA);
DSL: (the Domestic Substances List of Canada);
NDSL: (the Non-domestic Substances List of Canada)

***End of report ***

