SAFETY DATA SHEET

Product Name: Lithium-ion
Rechargeable Battery

436 Kato Terrace, Fremont, CA 94539 U.S.A.
Tel: 510.687.0388 Fax: 510.687.0328
www.Tenergy.com

Tenergy Corporation
436 Kato Terrace
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Tel: 510.687.0388 Fax: 510.687.0328
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Lithium-ion Battery

Section 1 – Chemical Product and Company Identification

Chemical product identification

Product Name:	Lithium-ion Battery
Product Code:	None
Restrictions on use:	N/A

Company identification

Company:	Tenergy Corporation
Address:	436 Kato Terrace, Fremont, CA, United State
Post code:	94539
E-mail:	sales@Tenergy.com
Telephone :	510-687-0388
Fax:	510-687-0328

Section 2 – Hazards Identification

Emergency overview: Not considered dangerous as manufactured. If battery is damaged, exposure to product components may cause eye, skin, and respiratory tract irritation. Combustion products from a fire involving batteries may be harmful.
Classification according to GHS: Not a dangerous substance according to GHS.

Potential Health Effects

Eyes and skin:	None anticipated under normal product use and handling conditions. If battery is damaged, exposure may cause severe irritation or burns.
Injection:	Not considered a likely route of exposure under normal product use and handling conditions. Ingestion of material from a damaged battery may cause serious burns to mouth, esophagus, and gastrointestinal tract.
Inhalation:	None anticipated under normal product use and handling conditions. If battery is damaged, exposure to vapors or mist may cause respiratory irritation.

HMIS Ratings:

Health:	0
Fire:	0
HMIS Reactivity:	0

Hazard Scale: 0=minimal 1=slight 2=moderate 3=serious 4=severe *=chronic hazard

Emergency overview: In case of accident or if you feel unwell, seek medical advice immediately. See Section 4 for more information.

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Section 3 – Composition, Information on Ingredients

Chemical characterization: Mixture
Emergency overview: N/A

Chemicals	Composition (% by weight)	CAS NUMBER
Lithium Metal Oxide (Co, Mn, Ni)	37%	12190-79-3
Graphite powder	23%	7782-42-5
Polypropylene	4%	9003-07-0
Electrolyte	13%	21324-40-3
Polyethylene	0.8%	9002-88-4
Copper	7%	7440-50-8
Aluminium	8%	7429-90-5
Polyvinylidene fluoride	0.9%	24937-79-9
Silicon	1.4%	7440-21-3
EpoxyResin	1.6%	38891-59-7
PVC	0.4%	9002-86-2
Nickel	2.5%	7440-02-0
Gold	0.3%	7440-57-5
Tin	0.1%	7440-31-5

Section 4 – First Aid Measures

First Aid: Eyes

Flush eyes with lukewarm water for at least 30 minutes while holding the eyelids open. Seek immediate medical care.

First Aid: Skin

Remove contaminated clothing, shoes and leather goods. Flush with water for at least 30 minutes. Seek medical attention if symptoms persist.

First Aid: Ingestion

Never give anything by mouth if victim is unconscious. Rinse mouth thoroughly water. Do not induce vomiting. Seek immediate medical attention.

First Aid: Inhalation

Remove person to fresh air away from source of contamination.

Section 5 – Fire Fighting Measures

General Fire Hazards

See section 9 for flammability properties. Battery cells may rupture when exposed to excessive heat.

Hazardous Combustion Products

May release toxic fumes if burned or exposed to fire

Suitable extinguishing agent:

Use extinguishing agent suitable for local conditions and the surrounding environment. Such as dry powder, CO_2. For damaged or ruptured cells, use Class D extinguisher or other appropriate agent. Class C fire extinguishers should be used to extinguish electrical fires. Do not use water to extinguish electrical or ruptured cell related fires.

Specific 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. 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.

Fire-fighting measures and protection for fire-fighters:

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

Section 6 – Accidental Release Measures

Containment Procedures:

Stop the flow of material, if this is without risk

Clean-up Procedures:

Absorb spill with inert material. Shovel material into appropriate container for disposal. Clean spill area with detergent and water; collect wash water for proper disposal.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

Avoid skin contact with the spilled material.

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 the United Nations, the national and local 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.

Section 7 – Handling and Storage

Handling Procedures

Avoid damaging or rupturing battery.

Storage Procedures

Store in a dry location at room temperature. Avoid extreme heat or fire. Keep out of reach of children.

Section 8 – Exposure Controls, Personal Protection

A: Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

Engineering Controls
Not necessary under normal product use conditions.
PERSONAL PROTECTIVE EQUIPMENT
Personal Protective Equipment: **Eyes/Face**
Not necessary under normal product use conditions. Wear safety glasses if handling a damaged battery.
Personal Protective Equipment: Skin
Not necessary under normal product use conditions. Wear neoprene or natural rubber gloves when handling a damaged battery.
Personal Protective Equipment: Respiratory
Not necessary under normal product use conditions.
Personal Protective Equipment: General
Eyewash fountains and emergency showers are required.

Section 9 – Physical and Chemical Properties

Information on basic physical and chemical properties
General information

Appearance: Various shaped battery	Specific Gravity: NA
Odor: None	Evaporation Rate: NA
Physical State: Solid	VOC: NA
pH: NA	Octanol/H2O Coeff.: NA
Vapor Pressure: NA	Flash Point: NA
Vapor Density: NA	Flash Point Method: NA
Boiling Point: NA	Upper Flammability Limit (UFL): NA
Melting Point: NA	Lower Flammability Limit (LFL): NA
Solubility (H2O): Insoluble	Burning Rate: NA
Auto Ignition: NA	

Section 10 – Stability and Reactivity

Chemical Stability: This is a stable material.
Chemical Stability: Conditions to Avoid
Avoid exposure to elevated temperatures and fire.
Incompatibility
Not Available.
Hazardous Decomposition
May release toxic fumes if burned or exposed to fire.
Possibility of Hazardous Reactions
Not Available.

Section 11 – Toxicological Information

Organic Electrolyte
・Acute toxicity: LD50, oral - Rat 2,000mg/kg or more

・Irritating nature: Irritative to skin and eye

Section 12 – Ecological Information

Persistence/degradability:
Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.

Section 13 – Disposal Considerations

Recommended methods for safe and environmentally preferred disposal:
Product (waste from residues)
Specified collection or disposal of lithium ion battery is required by the law like as "battery control law" in several nations. Collection or recycle of the battery is mainly imposed on battery's manufacturer or importer in the nations recycle is required.
Contaminated packaging
Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

Section 14 – Transport Information

According to PACKING INSTRUCTION 967 (UN3481) / 965 (UN3480) of IATA DGR 59th Edition for transportation, the special provision 188 of IMDG (including Amendment 35-10), these batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrate and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle and ship must be cleaned and sterilized otherwise it is not allowed to assemble articles. During transport, the vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area. Forbid to use wooden, cement for bulk transport.

(a) UN Number	3480 & 3481
(b) UN Proper Shipping Name	LITHIUM ION BATTERIES (including lithium ion Cylindrical batteries) or LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion Cylindrical batteries)
(c) Transport hazard class(es)	9
(d) Packing group (if applicable)	II
(e) Marine pollutant (Yes/No)	None
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	No information available
(g) Special precautions	No information available

(h) Organizations governing the transport of lithium batteries

Area	Method	Organization	Special Provision
U.S.A	Air, Rail, Road, Marine	DOT	49 CFR Section 173.185

Section 15 – Regulatory Information

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

CAS No.	USA TSCA	EU EINECS	Japan ENCS	Korea ECL	China IECSC	Canada DSL
7782-42-5	Listed	Listed	Not listed	Listed	Listed	Listed
21324-40-3	Not listed	Listed	Listed	Listed	Listed	Not listed
9002-88-4	Listed	Listed	Listed	Listed	Listed	Listed
7440-50-8	Not listed	Listed	Listed	Listed	Listed	Not listed
7440-02-0	Not listed	Listed	Listed	Listed	Listed	Not listed
24937-79-9	Listed	Not listed	Listed	Listed	Listed	Listed
9003-07-0	Listed	Listed	Listed	Listed	Listed	Listed
7429-90-5	Listed	Listed	Listed	Listed	Listed	Listed
7440-21-3	Listed	Listed	Listed	Listed	Listed	Not listed
38891-59-7	Not listed	Not listed	Listed	Listed	Not listed	Not listed
9002-86-2	Listed	Not listed	Listed	Listed	Listed	Not listed
7440-57-5	Listed	Listed	Listed	Listed	Listed	Not listed
7440-31-5	Listed	Not listed	Listed	Listed	Listed	Not listed

Section 16 – Additional Information

Revision Information:
Date of this revision: 01/16/2018
Training advice:
Provide adequate information, instruction and training for operators.
Abbreviations and acronyms:

GHS:	Globally Harmonized System of Classification Labeling of Chemicals.
CAS:	Chemical Abstracts Service registration number.
NIOSH:	US National Institute for Occupational Safety and Health
OSHA:	US Occupational Safety and Health
LD50:	Lethal Dose, 50 percent kill
ITAT	International Air Transport Association
IMDG:	International Maritime Dangerous Goods
TSCA:	Toxic Substances Control Act,
IECSC:	Inventory of existing chemical substances in China

Disclaimer to reader:

The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage