

Safety Data Sheet

Tropo-4841

RedEarth TROPPO-4841 LFP Battery
According to WHSQ Code of Practice 2021



Section 1.

Identification: Product identifier and chemical identity

Product identifier	Rechargeable Lithium Iron Phosphate (LFP) Battery
Other means of identification	Model number: TROPPO-4841 Synonyms: LiFePO ₄ , LFP, Lithium-ion battery Classification (UN/ID No.): UN3480
Recommended use of the chemical and restrictions on use:	Energy storage systems and battery systems
Details of Manufacturer:	RedEarth Energy Storage Ltd 15 Fienta Place, Darra, Brisbane, QLD 4076, Australia 1800 733 637 support@redearth.energy www.redearth.energy
Emergency phone number:	+61 487 002 451

Section 2.

Hazards Identification

This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the hazards listed below exist.

Classification of hazardous chemical:

- Acute toxicity, oral: Category 4
- Skin corrosion/irritation: Category 2
- Serious eye damage/ eye irritation: Category 2A
- Specific target organ toxicity, single exposure: Respiratory tract irritation: Category 3

Signal word: WARNING

Hazard statements

H302 Harmful if swallowed. H315 Causes skin irritation.
H319 Causes serious eye irritation. H355 May cause respiratory irritation.

Precautionary statements

Prevention:

P264 Wash skin and clothing thoroughly after handling
P261 Avoid breathing dust, fume, gas, mist, vapours, spray.

Response:

P314 Get medical advice/attention if you feel unwell.
P301 + P312 IF SWALLOWED: Call a POISON centre if you feel unwell.
P302 + P353 IF ON SKIN: Wash with plenty of water
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

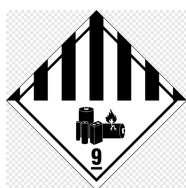
P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents to approved waste treatment plants

Label elements, including precautionary statements

The packaging includes labels for Transport of Dangerous Goods

**Other hazards**

Physical and chemical hazards: See Section 10

Human health hazards: See Section 11

Environmental hazards: See Section 12.

Section 3.**Hazards**

Chemical Name	CAS No	Weight (%)
SPCC-FE sheet steel	7439-89-6	20-30
Lithium Iron Phosphate (LiFePO4)	15365-14-7	20-30
Iron	7439-89-6	10-20
Carbon black	1333-86-4	10-20
Lithium hexafluorophosphate (1-)	21324-40-3	5-15
Copper	7440-50-8	5-10
Aluminum	7429-90-5	1-5
Polyamide	63428-84-2	1-5
Polyvinylidene fluoride	24937-79-9	1-3
Acrylonitrile-butadiene-styrene (ABS)	9003-56-9	0-1
Nickel	7440-02-0	0-1

Section 4.**First aid measures****Description of necessary first aid measures**

After eye contact:	Flush eyes with plenty of water for 15 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 for 15 minutes. Wash clothing and shoes before reuse. If irritation occurs get medical attention.
After inhalation:	Remove victim to fresh air area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After swallowing: Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention.

Symptoms caused by exposure

Symptoms: Exposure to battery contents may cause irritation and potential burns

Medical attention and special treatment

Notes to physician: Treat symptomatically

Section 5.

Firefighting measures

Suitable extinguishing media

Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. ABC extinguishers are not effective when the battery pack is on fire.

Specific hazards arising from the chemical

Contents react with water.

Battery may burst and release hazardous decomposition products when exposed to a fire situation. The battery contains flammable electrolyte that may vent, ignite, and produce sparks when subjected to high temperatures (>150degC), 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.

Specific protective equipment and precautions for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing.

Hazchem code: **4W**

Section 6.

Accidental release measures

Personal precautions, protective equipment, and emergency procedures

Avoid breathing vapour. Avoid skin contact. Ensure adequate ventilation. Remove all sources of ignition. Use Personal Protective Equipment (PPE)

Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or ground water.

Methods and materials for containment and cleaning up

If battery is damaged or ruptured, absorb any liquid with sand or similar dry medium. Contain spillage then collect and place in suitable containers for disposal according to local regulations.

Section 7.

Handling and storage

Precautions for safe handling

Before use carefully read the product manuals. The batteries are heavy, use correct lifting technique.

Avoid short circuiting the battery or installing with reversed polarity. Avoid mechanical damage of the battery. Do not open or disassemble.

In areas contaminated by damaged batteries use of safe work practices is recommended, including avoiding eye and skin contact and inhalation. Observe good personal hygiene, including removing contaminated clothing and washing hands before eating.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry well-ventilated area. Keep away from water, heat or ignition sources and foodstuffs. Ensure that batteries are protected from physical damage and include adequate labelling.

Do not stack more than 8 batteries on top of each other, to avoid mechanical damage.

Section 8.

Exposure controls and personal protection

Exposure control measures

This product presents no health hazards to the user when used according to label directions for its intended purposes.

Control banding

Control banding is not applied.

Biological monitoring

CAS No.	ACGIH	NIOSH	OSHA
15365-14-7	N/A	N/A	N/A
61789-96-6	N/A	N/A	N/A
24937-79-9	N/A	N/A	N/A
1333-86-4	TLV-TWA 3mg/m ³	REL-TWA 3.5mg/m ³	PEL-TWA 3.5mg/m ³
21324-40-3	N/A	N/A	N/A
7440-50-8	TLV-TWA 0.2mg/m ³ TLV-TWA 1mg/m ³	REL-TWA 1mg/m ³ REL-TWA 0.1mg/m ³	PEL-TWA 0.1mg/m ³ PEL-TWA 1mg/m ³
7429-90-5	TLV-TWA 1mg/m ³	REL-TWA 2mg/m ³ REL-TWA 5mg/m ³ REL-TWA 10mg/m ³	PEL-TWA 5mg/m ³ PEL-TWA 15mg/m ³
7439-89-6	N/A	N/A	N/A

Engineering controls

Use local exhaust ventilation to control sources of dust, mist, fumes, vapour and condensation.

Individual protection measures (PPE)

Eye and face protection: None required under normal conditions. If battery case and cells are damaged, wear tight-fitting safety goggles or face shield.

Hand protection: None required under normal conditions. Wear appropriate gloves if handling damaged battery.

Skin and body protection: None required under normal conditions. If battery is damaged, wear suitable protective clothing to minimise contact with skin.

Respiratory protection: None required under normal conditions. If exposure to fumes from a damaged battery is possible then ventilate or evacuate to a well-ventilated area. SCBA is required for larger leakages.

Thermal hazards: None required under normal conditions. If the battery case is damaged or hot wear protective gloves if handling. Do not handle if the battery is producing sparks or flame.

Electrical protection: None required under normal conditions. If the battery is damaged use avoid touching the battery with conductive material or items.

Section 9.

Physical and chemical properties

Information on basic physical and chemical properties:

Colour	Dark grey
Physical state	Rectangular enclosure with handle
Odour	Not determined
Odour threshold	Not determined
Ph	Not determined
Melting point/freezing point	Not determined
Initial boiling point and boiling range	Not available
Flash point	Not determined
Evaporation rate	Not determined
Flammability (solid/gas)	Not available
Explosion limits (vol% in air)	Not determined
Vapour pressure; kPa at 20degC	Not available
Vapour density	Not available
Relative density (water=1)	Not determined
Solubility in water	Not available
Partition coefficient; n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Other information:	
Voltage	51.2Vdc
Electrical energy	4,086 Wh

Section 10.

Stability and reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Chemical stability

Stable under normal use and recommended storage conditions.

Possibility of hazardous reactions

This product is considered stable if used as prescribed, however avoid misuse (e.g., short-circuiting or connecting with reverse polarity).

Conditions to avoid

Heat above 70°C or mechanical damage or short circuiting of the battery. Avoid all sources of ignition: heat, sparks, open flame. Avoid all sources of water: rain, condensation, spillage. Avoid exposure to humid conditions over a long period of time.

Incompatible materials

Strong oxidisers or acids.

Hazardous and decomposition products

No hazardous decomposition products if handled and stored as prescribed/indicated. May evolve carbon monoxide, carbon dioxide, lithium oxide fumes when heated to decomposition.

Section 11.

Toxicology information

Information on possible routes of exposure

Acute toxicity:

No specific toxicity data exists for this product.

The battery consists of a sealed metallic enclosure containing several chemicals and materials of construction that may be hazardous upon release.

Inhalation: Not a likely route of exposure under normal conditions. Toxicity data and effects of inhalation exposure not available.

Ingestion: Not a likely route of exposure under normal conditions. Toxicity data and effects of ingestion not available.

Skin contact: Not a likely route of exposure under normal conditions. Toxicity data and effects of skin contact exposure not available.

Eye contact: Not a likely route of exposure under normal conditions. Toxicity data and effects of eye contact exposure not available.

CAS No.	LC50/LD50
15365-14-7	No data available.
61789-96-6	No data available.
24937-79-9	No data available.
1333-86-4	No data available.
21324-40-3	No data available.
7440-50-8	No data available.
7429-90-5	No data available.
7439-89-6	No data available.

Early onset symptoms related to exposure

Refer to Section 4.

Exposure to battery contents may cause irritation and potential burns.

Delayed health effects from exposure

No information available.

Exposure levels and health effects

Not determined.

Mixtures of chemicals

No information available.

Other information

No information available.

Section 12.

Ecological information

Ecotoxicity

This product is not classified as environmentally hazardous.

Persistence and degradability

Not determined.

Bio accumulative potential

Not determined.

Mobility in soil

Not determined.

Other adverse effects

Not determined.

Section 13.

Disposal considerations

Disposal methods

Recycling is recommended. Do not allow product to enter water bodies or sewage systems. Dispose of in accordance with current local regulations.

Contaminated packaging should be disposed of in accordance with current local regulations.

Section 14.

Transport information

Term	Description
UN number	3480
Proper shipping name	Lithium-ion batteries
Transport hazard class	9
Packing group number	II
Environmental hazards – Marine pollutant	No
Additional information (UN)	4G/Y49/S/20 CN/C420219 PI:010

The battery State of Charge (SoC) is not to exceed 30% of the rated capacity.

The battery is to be transported in the approved packaging, or in an approved battery system, with the appropriate markings on the outside of the packaging.



The battery has passed the test UN38.3. The battery can be transported by sea or by air.

Section 15.

Regulatory information

Safety, health, and environmental regulations

Other regulatory information on the hazardous chemical that is not provided elsewhere in this SDS.

Refer to:

- Australian Code for the transport of Dangerous Goods by Road and Rail, June 2018
- IATA – International Air Transport Association
- Safe Work Australia – Classifying hazardous chemicals – National guide July 2020

Section 16.

Any other relevant information

Document details

Original Preparation Date: 25th Jan 2021
 Prepared by: RedEarth Energy Storage Ltd.
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 Brisbane, QLD 4076 Australia

Product details

Packaging
 Product: TROPPO-4841



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