



Safety Data Sheet

Issue Date: 27-Sep-2021

Revision Date: 04-May-2022

Version 2

1. IDENTIFICATION

Product identifier

Product Name Lithium ion cells and battery packs, phosphate-based

Other means of identification

SDS # LIT-001

Product Code	IFR18650EC	U1-12RT	U27-12XP	P75-12
	IFR26650EC	U1-12XP	U27-24XP	P30-36
	IFR26650PC	U1-24RT	U27-36XP	C576-30
	U1-12BMS	U24-12XP	UEV-18XP	20967-00001
	U1-12RJ	U24-24XP	P40-24	12V10
	12V10-B	12V9	LFP26650-4000	12V12-B

Synonyms Valence cell/module/battery/pack/system
Rechargeable lithium iron magnesium phosphate battery Battery
module/battery/pack/system
U-Charge module/battery/pack/system Valence Proven cell.

UN/ID No UN3480

Recommended use of the chemical and restrictions on use

Recommended Use Electrochemical energy storage device: battery cell/module/pack/system.

Details of the supplier of the safety data sheet

Supplier Address

Lithion Battery
1350 Wigwam Parkway
Henderson, NV 89074
Phone: 512-527-2900
www.lithionbattery.com/contact-us

Emergency telephone number

Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Emergency Overview Safety Data Sheets (SDS) are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an "article". OSHA has defined "article" as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees. Because all of our batteries are defined as "articles", they are exempt from the requirements of the Hazard Communication Standard, hence an SDS is not required. However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Appearance Battery**Physical state** Solid**Odor** Odorless**Classification**

The chemicals listed in section 3 are contained in a sealed container. Risk of exposure only occurs if battery is mechanically, thermally, or electrically abused.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms

Valence cell/module/battery/pack/system
 Rechargeable lithium iron magnesium phosphate battery Battery
 module/battery/pack/system
 U-Charge module/battery/pack/system Valence Proven cell.

Chemical name	CAS No	Weight-%
Positive Electrode Lithium Blend	Proprietary	Proprietary
Negative Electrode (Graphite)	Proprietary	Proprietary
Electrolyte Blend	Proprietary	Proprietary

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice	The following information applies if the battery is mechanically, thermally, or electrically abused.
Eye Contact	Flush with water for 30 minutes. Get immediate medical attention. Immediately flush eyes with water for 30 minutes while lifting the upper and lower lids. Get medical attention.
Skin Contact	Flush affected area with lukewarm water for at least 30 minutes. If skin irritation persists, call a physician.
Inhalation	If symptoms are experienced, remove source of contamination or move victim to fresh air. Get medical attention.
Ingestion	Do NOT induce vomiting. Call a physician or Poison Control Center.

Most important symptoms and effects, both acute and delayed

Symptoms	A shorted lithium battery can cause thermal and chemical burns upon contact with the skin.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water. Dry chemical. Carbon dioxide (CO₂). Foam.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Battery may vent when subjected to excessive heat-exposing, fire, or over voltage condition.

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO₂). Decomposition products can include and are not limited to: Aldehydes, hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and oxides of carbon, sulfur and phosphorus.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Personal Precautions** Use personal protective equipment as required. Ventilate affected area.
- Other Information** The material contained within the batteries is only expelled under abusive conditions.
- For Emergency Responders** If the battery material is released, remove personnel from the area until fumes dissipate.

Environmental precautions

Methods and material for containment and cleaning up

- Methods for Containment** Prevent further leakage or spillage if safe to do so.
- Methods for Clean-Up** Use a shovel and cover battery with sand or vermiculite, place in an approved container, and dispose in accordance with section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

- Advice on Safe Handling** Do not expose battery or cell to extreme temperatures or fire. Do not disassemble, crush or puncture battery. Avoid mechanical or electrical abuse.

Conditions for safe storage, including any incompatibilities

- Storage Conditions** Insulate positive and negative terminals to avoid short circuit. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Protect from direct sunlight.
- Incompatible Materials** If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Trade Secret	TWA: 0.02 mg/m ³ Mn respirable particulate matter TWA: 0.1 mg/m ³ Mn inhalable particulate matter	(vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ Mn	IDLH: 500 mg/m ³ Mn TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn
Trade Secret	TWA: 2 mg/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ natural respirable dust

Trade Secret	TWA: 2.5 mg/m ³ F	TWA: 15 mppcf natural TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F
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Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Not necessary under conditions of normal use. In case of battery rupture or leakage, use safety goggles.

Skin and Body Protection Not necessary under conditions of normal use. In case of battery rupture or leakage, wear rubber apron and Viton rubber gloves.

Respiratory Protection Not necessary under conditions of normal use. In case of battery venting or rupture, use a self contained full face respiratory mask.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Odorless
Appearance	Battery	Odor Threshold	Not applicable
Color	Not determined		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	Not applicable	
Melting point / freezing point	Not applicable	
Boiling point / boiling range	Not applicable	
Flash point	Not applicable	
Evaporation Rate	Not applicable	
Flammability (Solid, Gas)	Not determined	
Flammability Limit in Air		
Upper flammability or explosive limits	Not applicable	
Lower flammability or explosive limits	Not applicable	
Vapor Pressure	Not applicable	
Vapor Density	Not applicable	
Relative Density	Not applicable	
Water Solubility	Insoluble in water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not applicable	
Autoignition temperature	Not applicable	
Decomposition temperature	Not determined	
Kinematic viscosity	Not applicable	
Dynamic Viscosity	Not applicable	
Explosive Properties	Not determined	
Oxidizing Properties	Not applicable	

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to Avoid

Heating, mechanical and electrical abuse.

Incompatible materials

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

Inhalation, skin contact and eye contact are possible when the battery is opened. The following is based on exposure to internal contents

Eye Contact

Corrosive fumes will be very irritating to eyes.

Skin Contact

Corrosive fumes will be very irritating to skin.

Inhalation

Corrosive fumes will be very irritating to mucous membranes.

Ingestion

Do not ingest.

Component Information

Not available

Symptoms related to the physical, chemical and toxicological characteristics**Symptoms**

Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Carcinogenicity**

Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Component Information

Not available

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Not determined

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods**

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard class	9
Packing Group	II

IATA

UN number	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Transport hazard class(es)	9

IMDG

UN number	UN3480
Proper Shipping Name	LITHIUM ION BATTERIES
Transport hazard class(es)	9

15. REGULATORY INFORMATION**International Inventories**

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
Trade Secret	X	ACTIVE		X					
Trade Secret	X	ACTIVE	X	X		X	X	X	X
Trade Secret	X	ACTIVE	X	X	X	X	X	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Positive Electrode Lithium Blend -		Proprietary	1.0

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Trade Secret	X		X
Trade Secret	X	X	X
Trade Secret	X		

16. OTHER INFORMATION

NFPA

Health Hazards
Not determined

Flammability
Not determined

Instability
Not determined

Special Hazards
Not determined

HMIS

Health Hazards
Not determined

Flammability
Not determined

Physical hazards
Not determined

Personal Protection
Not determined

Issue Date: 29-Nov-2021
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Revision Note: New models added

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet