VT5000ES48 Lithium Battery
Safety Data Sheet

ViTech Power Systems
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Section 1 - Identification: Product Identifier and Chemical Identity

Product Name: ViTech Power Lithium Battery

Model Number: VT5000ES48

Name of Sample		ViTech Power Lithium Battery
Manufacturer	Name	ViTech Power Systems Pty Ltd
	Address	5/364 Park Road, Regents Park, NSW 2143
	Telephone	1300 699 669
	Email	support@vitechpower.com.au
	Website	www.vitechpower.com.au

Section 2 - Hazards Identification

Classification of Danger:

See Section 14.

Primary Route(s) of Exposure:

Eye, skin contact, ingestion.

Health Hazard:

The batteries are not hazardous when used according to the instructions of the manufacturer. There is a hazard of rupture, fire, heat, and leakage of internal components in case of abuse, which could cause casualty loss. Abuses include but are not limited to the following cases: charged for a long time, short-circuited, put into the fire, struck with a hard object, punctured with an acute object, crushed, and broken.

Section 3 - Composition/Information on Ingredients

Chemical Name	Concentration or concentration ranges	CAS Number
Iron Lithium Phosphate (LiFePO4)	15~40	15365-14-7
Graphite	7~25	7782-42-5
Hexafluoropropylene-vinylidene fluoride Copolymer	3~15	9011-17-0
Lithium Hexafluorophosphate	0~5	21324-40-3
Acetylene Black	0~2	1333-86-4
Diethyl Carbonate	0~15	105-58-8
Dimethyl Carbonate	0~15	616-38-6
Ethyl Methyl Carbonate	0~15	623-53-0
Propylene Carbonate	0~15	108-32-7
Ethylene Carbonate	0~15	96-49-1

Labelling according to EC directives.

No symbol and Hazard phrase are required.

Note: CAS number is Chemical Abstract Service Registry Number.

N/A = Not applicable.

Section 4 - First Aid Measures

Eye	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
Inhalation	Remove from exposure and move to fresh air immediately. Use oxygen if available.
Ingestion	Give at least two glasses of milk or water. Induce vomiting unless the patient is unconscious. Call a physician.

Section 5 - First Fighting Measures

Characteristics of Hazard	Dust at sufficient concentrations can form explosive mixtures with air. Combustion generates toxic fumes.
Hazard Combustion Products	Carbon dioxide.
Fire-extinguishing Methods and Extinguishing Media	For small fires, use water spray, dry chemical, carbon dioxide, or chemical foam.
Attention in Fire-extinguishing	Wear self-contained breathing apparatus in pressure-demand, MSHA/ NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	In case of rupture, attention! Corrosive material. • Avoid contact with skin, eyes and clothing. • Ensure adequate ventilation. • Use personal protective equipment as required. Evacuate personnel to safe areas. • Keep people away from and upwind of spill/ leak. Refer to protective measures listed in Sections 7 and 8.
Environmental Precautions	Prevent product from contaminating soil and from entering sewers or waterways.
Methods and materials for Containment	1. Stop the leak if safe to do so. 2. Contain the spilled liquid with dry sand or earth. 3. Clean up spills immediately.
Methods and Materials for cleaning up	1. Absorb spilled material with an inert absorbent (dry sand or earth). 2. Scoop contaminated absorbent into an acceptable waste container. 3. Collect all contaminated absorbent and dispose of according to directions in Section 13. 4. Scrub the area with detergent and water. 5. Collect all contaminated wash water for proper disposal.

Section 7 – Handling and Storage

Handling	The battery may explode or cause burns if disassembled, crushed, or exposed to fire or high temperatures. Do not short or install with incorrect polarity.
Storage	• Store in a cool, dry, well-ventilated area away from incompatible substances. • Store locked up. • Keep out of the reach of children.
Other Precautions	In case of rupture, handle in accordance with good industrial hygiene and safety practice. • Avoid contact with skin, eyes or clothing. • Use personal protection equipment.

Section 8 – Exposure Controls/Personal Protection

Engineering Controls	Use adequate ventilation to keep airborne concentrations low. If used under conditions that generate particulates, the ACGIH TLV-TWA of 3mg/ m^3 respirable fraction (10mg/m^3 total) should be observed.
Personal Protective Equipment	Eye and Face Protection: None required for consumer use. If there is a Hazard of contact: Tight sealing safety goggles and face protection shield. Skin and Body Protection: None required for consumer use. If there is a Hazard of contact: Wear protective gloves and protective clothing. Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Section 9 – Physical and Chemical Properties

Physical State	Appearance: Prismatic
	Colour: Black
	Odour: If leaking, smells of medical ether.

Change in condition

pH	Not applicable as supplied.
Flash Point	Not applicable unless individual components exposed.
Flamibility	Not applicable unless individual components exposed.
Relative density	Not applicable unless individual components exposed.
Solubility (water)	Not applicable unless individual components exposed.
Solubility (other)	Not applicable unless individual components exposed.

Section 10 – Stability and Reactivity

Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Conditions to Avoid	Exposure to air or moisture over prolonged periods.
Incompatibile materials	Acids, Oxidizing agents, Bases.
Hazardous Decomposition Products	Carbon oxides.

Section 11 – Toxicological Information

Irritation	In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.
Sensitisation	Not Available.
Reproductive Toxicity	Not Available.
Toxicologically Synergistic Materials	Not Available.

Section 12 – Ecological Information

General Note	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Anticipated behaviour of a chemical product in environment/possible environmental impact/ ecotoxicity	Not Available.

Section 13 – Disposal Consideration

Waste Treatment	Recycle or dispose of in accordance with government, state and local regulations.
Attention for Waste Treatment	Deserted batteries should not be treated as ordinary trash. Should not be thrown into fire or placed in high temperature. Should not be dissected, pierced, crushed, or treated similarly. The best disposal method is recycling.

Section 14 – Transport Information

UN number	3480
Proper shipping name	Lithium ion batteries (limited to a maximum of 30% SoC)
Class or division	9
Label(s) / Placard Required	Miscellaneous Lithium battery

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

ICAO / IATA:	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section IB appropriate of IATA DGR 60th (2019 Edition) for transportation.
IMDG CODE:	The batteries are not restricted to IMDG Code 2018 Edition (Amdt 39-18) according to special provision 188.
DOT:	Other requirements for the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185.
ADR / ADN:	The batteries are not subject to the provisions of United Nations Economic Commission for Europe (UNECE) ADR/ADN if they meet the requirements of special provision 188 of Chapter 3.3. Applicable as from 1 January 2019.

In addition, to be permitted in transport each lithium cell and battery types must have passed the applicable tests set out in Subsection 38.3 of the UN Manual of Tests and Criteria.

Section 15 – Regulatory Information

- Dangerous Goods Regulations
- Recommendations on the Transport of Dangerous Goods-Model Regulations (20th revised edition)
- Recommendations on the Transport of Dangerous Goods-Manual of Tests and Criteria International Air Transport Association (IATA)
- International Maritime Dangerous Goods (IMDG Code 2018 Edition Amdt 39-18)
- Technical Instructions for the Safe Transport of Dangerous Goods
- Classification and code of dangerous goods (GB 6944-2012)
- 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
- Toxic Substance Control Act (TSCA)
- Code of Federal Regulations
- In accordance with all Federal, State and local laws

Section 16 – Additional Information

Sample photo:

To the best of our knowledge, the information contained herein is accurate. However, neither the aforementioned supplier nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the 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.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export-controlled information.

Manufacturer
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