MATERIAL SAFETY DATA SHEET

ISSUING PARTY： CARPLOUNGE TACKLE	**Date:** 20.April,*2021*	**VER：** *1.0*

Section 1. Identification of the Substance/Preparation and of the Company/Undertaking

Product name：	Lithium Iron Phosphate Battery
Product description:	PWR 4S 20Ah, PWR 4S 36Ah, PWR 4S 55Ah, PWR 4S 70Ah, PWR 4S 100Ah, PWR 4S 150Ah, PWR 4S 250Ah, PWR 4S3P, PWR 4S5P, PWR 4S7P
Company Address:	MEDIENSTR. 6, 47807 KREFELD, GERMANY
Telephone Number:	49-2154884200
Email	al@carplounge-tackle.de

Section 2. Composition/Information on Ingredients

Common Chemical Name/General Name	CAS #	Percent of Content (%)	Classification and Hazard labeling
Lithium Iron Phosphate	15365-14-7	40-43	Eye,skin,respiratory irritant
Carbon, as Graphite	7440-44-0	14-17	Eye,skin,respiratory irritant
Aluminum	7429-90-5	6-7	Inert
Copper	7440-50-8	9-11	Inert
Electrolyte		15-19	Mixture：Flammable；reactive；sensitizer；eye；skin &respiratory irritant
Ethylene carbonate	96-49-1		
Dimethyl carbonate	616-38-6		
Ethyl methyl carbonate	623-53-0		
Lithium hexafluorophosphate	21324-40-3		

Section 3. Hazardous Identification

Lithium Iron Phosphate Battery described in this MSDS data sheet are hermetically sealed and designed to withstand temperatures and pressures encountered during normal use. Under normal conditions of use, there is no physical danger of ignition, explosion or chemical danger of hazardous materials leakage. The materials contained in this battery may only represent a hazard if the integrity of the battery is compromised or if the battery is mechanically, thermally or electrically abused.

Caution： Do not open or disassemble the batteries. Do not expose the batteries to fire or

open flame. Do not mix batteries of varying sizes or chemistry. Do not short circuit, puncture, incinerate, crush, over-charge, over discharge, or expose the batteries to temperatures above the declared limit. Abuse of the batteries will result in the risk of fire or explosion, which could release hydrogen fluoride gas.

Human Health Hazard: Electrolyte may irritate skin and eyes. Electrolyte steam has an anesthesia action and irritates the respiratory tract.

Section 4. First Aid Measures

inhalation:	If contents of an opened cell are inhaled, remove source of contamination or move victim to fresh air .Obtain medical advice.
Eye contact:	Contact with the contents of an opened cell can cause burns. If eye contact with contents of an open cell occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.
Skin contact:	Contact with the contents of an opened cell can cause burns. If skin contact with contents of an open cell occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
Inhalation:	Contact with the contents of an opened cell can cause burns. If ingestion of contents of an open cell occurs, NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.

Section 5. Fire Fighting Measures:

Flammable Properties:	Lithium Iron Phosphate 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 overcharge). Burning cells can ignite other batteries in close proximity.
Suitable extinguishing Media:	Small Fires - Dry chemical, CO_2, water spray or regular foam. Large Fires - Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.
Unsuitable extinguishing Media:	Not Applicable
Explosion Data:	Not Applicable
Sensitivity to Mechanical Impact:	Extreme mechanical abuse will result in rupture of the individual battery cells.
Sensitivity to Static Discharge:	Electrostatic discharges imposed directly on the spilled electrolyte may start combustion.

Section 6. Accidental Release Measures:

Personal Precautions:	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. Keep out of low areas. Ventilate closed areas before entering. Wear adequate personal protective equipment as indicated in Section 8.
Environmental Precautions:	Prevent material from contaminating soil and from entering sewers or waterways.
Methods for Containment:	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods for Clean-up:	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

Section 7. Handling and Storage:

Handling/Transportation	Do not open or disassemble the batteries. Do not expose the batteries to fire or store near open flame. Do not mix batteries of varying sizes or chemistry. Do not connect the positive and negative battery terminals with conductive material or throw into fire. Do not heat or solder the batteries. Keep the batteries in plastic or non-conductive trays. Do not expose batteries to direct sun light for a prolonged time. Do not expose cell to temperatures outside the range of -40°C to 80°C.
Storage	Batteries should be stored in a well ventilated, cool area with sufficient clearance Between batteries and walls. Store the batteries in a cool (below 30°C) area and away from Moisture. Keep the batteries away from sources of heat, open flames, food and drink. Do not store the batteries above 55°C or below -30°C. Storing at elevated temperatures may reduce the life of batteries. Keep batteries away from strong oxidizers and acids. Elevated temperature storage such as 100°C may result in battery venting flammable liquid and gases.

Section 8. Exposure Controls/Personal Protection:

No engineering controls are required for normal operation. In case of cell leakage, increase the ventilation and use self contained full-face respiratory equipment.

Common Chemical Name/General Name	OSHA PEL-TWA
TLV	0.02mg/m^3
MAK	0.1mg/m3 (Germany)
electrolyte	Not established

OSHA：Occupational safety and health administration

PEL-TWA: permissible exposure limits-time weighted average concentration

ACGIH: American Council of Government Industrial Hygienist

TLV-TWA: Threshold Limit Value-Time Weighted Average Concentration

Personal Protective Equipment

Not required during normal use of the battery

In the event of a ruptured battery or fire

Respiratory protection:Self-contained full-face respiratory equipment.

Hand protection:Chemical protective gloves.

Eye protection:Self-contained full-face respiratory equipment.

Skin and body protection:Chemical protective clothing.

Section 9. Physical and Chemical Properties:

Physical state：	Solid	Vapor pressure（mm Hg@20°C）	N/A
Appearance:	Cell	Vapor density：	N/A
Ph:	N/A	Solubility in water：	N/A
Relative density：	N/A	Water/oil distribution coefficient：	Insoluble
Boiling point	N/A	Odor type：	Odorless
Melting point：	N/A	Odor threshold：	N/A
Viscosity：	N/A	Evaporative rate：	N/A
Oxidizing property	N/A	Auto ignition temperature(°C)	N/A
Flash point and method(°C)	N/A	Flammability limits（%）：	N/A

Section 10. Stability and Reactivity:

Stability:	Stable
Suitable extinguishing Media:	Avoid exposing the cell to fire or temperatures above 80°C. Do not disassemble, crush, short or install with incorrect polarity.Avoid

	mechanical or electrical abuse.
Incompatible Materials:	Do not immerse in seawater or other high conductivity liquids.
Hazardous Decomposition Products:	His material may release toxic fumes if burned or exposed to fire. Breaching of the cell enclosure may lead to generation of hazardous fumes which may include extremely hazardous HF (hydrofluoric acid).
Possibility of Hazardous Reactions:	Not available

Section 11. Toxicological Information:

Acute Toxicity Data **Other Toxicity Data** **Irritation:**	Acute oral, dermal and inhalation toxicity data are not available for this article. Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
Corrosivity:	Not applicable
Sensitization:	Not applicable
Neurological Effects:	Not applicable
Genetic Effects:	Not applicable
Reproductive Effects:	Not applicable
Developmental Effects:	Not applicable
Target Organ Effects:	Not applicable
Carcinogenicity:	Normal safe handling of this product will not result in exposure to substances that are considered human carcinogens by IARC (International Agency for Research on Cancer), ACGIH (American Conference of Governmental Industrial Hygienists, OSHA or NTP (National Toxicology Program).

Section 12. Ecological Information:

Not applicable for this product.

Section 13. Disposal Considerations:

Batteries should be discharged fully prior to disposal. The battery terminals should be capped to prevent a short circuit. Dispose the batteries in accordance with applicable local laws. Lithium ion batteries may be subject to federal, state or local regulations.

Section 14. Transportation information:

In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation.Take in a cargo of them without failing, dropping and breakage .Prevent collapse of cargo piles and wet by rain. The container must handle carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to section 7 handling and

storage too.

Code and classification according to：

International regulations for transport Air IATA-DGR：PI965/966/967

International regulations for transport Sea IMDG CODE: special provision 188

National regulations for transport land GB12268-2014

The UN classification number:3480/3481

However , since it corresponds to special provision PI965/966/967 of IATA DGR 62th edition for transportation, special provision 188 of IMDG CODE or the 《recommendations on the transport of dangerous goods-model regulations》 19th ,GB12268-2014 of land regulations, this battery cell can be conveyed normally.

Lithium battery does not contain any recalled/defective battery and meeting Packing Instruction 965/966/966 of IATA DGR.

Production of MSDS proving UN manual of tests and Criteria, part Ⅲ,sub-section 38.3 in met on MSDS.

Section 15. Regulatory information:

The transport of rechargeable lithium-ion batteries is regulated by various bodies (IATA, IMO, and ADR, US-DOT) that follow the United Nations “Recommendation on the Transport of Dangerous Goods, Model regulations, 5th revised edition-2009-Ref. STSG/AC.10/11 Rev. 5 A1”. Carplounge tackleproducts are assigned to UN3480 and are restricted by this regulation.

Section 16. Other Information/Disclaimer:

The information contained in this material data sheet has been compiled from sources considered to be dependable and is to the best of the knowledge and belief of International Battery, Inc., accurate and reliable as of the date of compilation. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information obtained herein. This information relates to the specific materials designated and may not be valid for such materials used in combination with any other materials or in any process. It is the user’s responsibility to satisfy him as to the suitability and completeness of this information for his particular use.

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