

Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Names: Solar Fence Energizer **S6 Lithium** and **S12 Lithium**
Part Numbers: G34900
G349404
G34901
G349414
Company Name: Gallagher Group Limited
Address: c/- Gallagher Group Ltd
Private Bag 3026, Waikato Mail Centre,
Hamilton 3240, New Zealand.
Contact: [↗](#)
Emergency Phone: +64 0800 731 500

2. HAZARD INFORMATION

Gallagher Solar Energizers model **S6 Lithium** and **S12 Lithium** contain a photovoltaic solar panel and a lithium iron-phosphate battery (LFP). These batteries are sourced from a variety of manufacturers.

Solar panels are not hazardous in normal use.

LFP batteries are not hazardous in normal use. LFP batteries are classified as Class 9 Dangerous Goods, Miscellaneous dangerous substances, and articles. The battery has passed the test items of *UN Model Regulations, Manual of Test and Criteria* Section 38.3.

LFP battery inside the Energizer is not user replaceable. The LFP battery must be replaced by a trained professional using a Gallagher approved LFP battery. Return Energizer to a Gallagher Authorised Service Centre for battery replacement.

For further information refer to the attached battery safety datasheet.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

For detailed information refer to the attached battery safety datasheet.

4. FIRST-AID MEASURES

The fence Energizer and battery are not hazardous under normal conditions. But if Energizer is damaged, then leaking of electrolyte inside the battery can occur.

Caution: Avoid contact and inhalation of the electrolyte contained inside the battery.

5. FIRE-FIGHTING MEASURES

Hazard: Burning plastic and battery may produce toxic and corrosive gases.

Fire Extinguisher: Small Fire; Dry chemical, CO₂, water spray or regular foam. Large Fire; Water spray, fog, or regular foam. A Lith-Ex Aerosol extinguisher [\[i\]](#) is recommended.

Protection for fire fighters: Use filter mask or isolated breathing apparatus and wear clothes which can defend from fire in the upwind direction.

For further information refer to the attached battery safety datasheet.

6. ACCIDENTAL RELEASE MEASURES

For further information refer to the attached battery safety datasheet.

7. HANDLING AND STORAGE

Handling

Keep away from fire. Do not throw into fire.

Handle with care.

Do not disassemble Energizer.

Storage

Keep away from fire and heating sources. The Energizer should be stored in a cool, dry, and well-ventilated location (temperature: -20°C to 25°C, humidity 45% to 85%).

Charge the Energizer once every 3 months by leaving it outside for 3 or more days.

Charge the Energizer for 3 or more days before and after storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

For detailed information refer to the attached battery safety datasheet.

9. PHYSICAL AND CHEMICAL PROPERTIES

For detailed information refer to the attached battery safety datasheet.

10. STABILITY AND REACTIVITY

Conditions to avoid for LFP batteries: Heat above 90°C or incinerate. Deform, mutilate, crush, pierce, and disassemble.

For further information refer to the attached battery safety datasheet.

11. TOXICOLOGICAL INFORMATION

For further information refer to the attached battery safety datasheet.

12. ECOLOGICAL INFORMATION

When properly used or disposed, the Li-Ion batteries do not present environmental hazard.

For further information refer to the attached battery safety datasheet.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with applicable regulations which vary from country to country.

Lithium-Ion batteries should have their terminals insulated, discharged completely (to 0.0V) and be preferably wrapped in plastic bags prior to disposal.

Incineration: Incineration should never be performed by battery users but eventually by trained professionals in authorized facilities with proper gas and fumes treatment.

For further information refer to the attached battery safety datasheet.

14. TRANSPORT INFORMATION

In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation.

Prevent falling, dropping and breakage.

Prevent collapse of cargo piles and water damage.

The shipping and display carton must be handled carefully.

The transport of products containing LFP batteries is subject to international regulation which can differ if the products are transported by air, sea, or road. There are a range of fines for companies who do not comply with these regulations.

The LFP battery contained in the S6 and S12 Energizers complies with the United Nations Model of Regulations, section 2.9.4. As recommended by section 2.9.4 (g), a test summary is attached as specified in the Manual of Tests and Criteria, part III, subsection 38.3.

Transport by Air

The LFP battery contained inside the Energizers complies with International Air Transport Association (IATA) Dangerous Goods Regulations (61st Edition) under **Special Provision 188**.

The LFP battery contained inside the Energizers is offered to transport at a state of Charge (SOC) not exceeding 30% of their rated design capacity.

UN Classification: Dangerous Goods Class 9, UN3481.



Packing Instruction: Section II of PI967: lithium-ion batteries contained in equipment.

Maximum Number of Energizers per package: 4 (1 battery cell per Energizer).

UN Manual of Tests and Criteria (Section 38.3). A Test Summary is attached as per the recommendations of section 38.3.

Transport by Sea

The LFP battery contained inside the Energizers complies with International Maritime Dangerous Goods (IMDG) Code (2018 Edition) under **Special Provision 188**.

Lithium Battery Test Summary 锂电池测试概要			
Manufacturer Information 制造商信息		Test Laboratory Information 测试实验室信息	
Shenzhen Hailei New Energy Co., Ltd 深圳市海雷新能源有限公司 Addr.: NO.69, Lijing South Road, Pingshan, Shenzhen, Guangdong, China. 深圳市坪山区荔景南路 69 号 Tel: 020-39137866 E-mail: Sally.guo@tacbattery.com Web.: www.tacbattery.com		Guangzhou MCM Certification & Testing Co., Ltd. 广州邦禾检测技术有限公司 Addr.: 1 F No.13, Zhong San Section, ShiGuang Road, Panyu District, Guangzhou City, Guangdong Province, China 中国广东省广州市番禺区市广路钟三路段 13 号之一 Tel.: 0086-20-34777662 / 0086-20-34777663 E-mail: mark.miao@mcmtek.com Web.: Http://www.mcmtek.com	
Product Information 产品信息			
Production: 产品名称	Lithium Iron Phosphate Battery 磷酸铁锂电池	Product Type: 产品类型	Rechargeable lithium-ion single cell battery 可充电锂离子单电芯电池
Type/ Model: 型号规格	IFM32700 3.2V 6Ah	Feature: 特征	Blue, Cylindrical 蓝色, 圆柱形
LC/Wh Rating: 锂含量/瓦时数	19.2Wh	Mass: 质量	143.5g (Approx.)
Test Report Information 测试报告信息			
Report Number 测试报告编号	XZ20200909U01	Test Date: 测试时间	2020.09.09 - 2020.10.09
Test Standard: 测试标准	Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria ST/SG/AC.10/11, section 38.3 《关于危险货物运输的建议书 试验和标准手册》ST/SG/AC.10/11, section 38.3		
Edition 版本:	Rev.6, amend1		
Test Item 测试项目	Result 结果	Test Item 测试项目	Result 结果
38.3.3 (f) Small battery assemble 小型组装电池	N/A	38.3.4.5 External short circuit 外部短路	P
38.3.3 (g) Large battery assemble 大型组装电池	N/A	38.3.4.6 Impact 撞击	P
38.3.4.1 Altitude simulation 高度模拟	P	38.3.4.6 Crush 挤压	N/A
38.3.4.2 Thermal test 温度循环	P	38.3.4.7 Overcharge 过度充电	P
38.3.4.3 Vibration 振动	P	38.3.4.8 Forced discharge 强制放电	P
38.3.4.4 Shock 冲击	P	※ P = Pass, 合格; N/A = Not Applicable, 不适用.	
Issued Information 签发信息			
The Test Summary Edited by: Guangzhou MCM Certification & Testing Co., Ltd. 本概要由广州邦禾检测技术有限公司编辑		Signature: 批准人签名  Approval Engineer	
		Issued Date: 签发日期 2020.10.20	

Note: The test summary of previous versions issued by MCM may still be used.
 注: 由 MCM 发行的以往版本的测试概要仍可使用。



中国认可
国际互认
检验
INSPECTION
CNAS IB0551



MATERIAL SAFETY DATA SHEET

Report No.: XZ20200909MSDS01

Product Name: Lithium Iron Phosphate Battery

Type/Model: IFM32700 3.2V 6Ah 19.2Wh

Revision Date: October 20, 2020

Compiler: *Zhuo hui ye*

Reviewer: *Ana Huang*

Approver: *Hongbin Xu*

邦禾检测
广州邦禾检测



广州邦禾检测技术有限公司
Guangzhou MCM Certification & Testing Co., Ltd.



Material Safety Data Sheet

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION	
Product Name:	Lithium Iron Phosphate Battery
Type/Model:	IFM32700 3.2V 6Ah 19.2Wh
Company:	Hong Kong TAC Industrial Co., Ltd
Address:	FLAT C, 9/F WINNING HOUSE NO.72 AND74 WING LOK STREET HK
Fax:	/
Zip code:	/
E-mail:	Sally.guo@tacbattery.com
Emergency Telephone:	020-39137866

SECTION 2 - HAZARDS IDENTIFICATION
<p>Hazards Identification: Lithium batteries itself are classified to Class 9 Dangerous Goods, Miscellaneous dangerous substances and articles. The battery has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3, and Report No.: XZ20200909U01. The sealed intact battery is not hazardous in normal use.</p> <p>Emergency Overview: Caution: Avoid contact and inhalation the electrolyte contained inside the battery.</p>

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENT			
Ingredient	Molecular formula	CAS No.	Weigh
Lithium Iron Phosphate	LiFePO ₄	15365-14-7	30.6%
Graphite	C ₂₄ X ₁₂	7782-42-5	17.1%
Organic Electrolyte	/	RR-14099-8	14.2%
Polypropylene	(C ₃ H ₆) _n	9003-07-0	2.8%
Copper	Cu	7440-50-8	6.5%
Aluminium	Al	7429-90-5	28.8%

SECTION 4 - FIRST AID MEASURES
<p>Eye Exposure: In case of contact with eyes, flush with copious of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.</p> <p>Skin Exposure: If the internal battery materials of an opened battery cell come into contact with skin, immediately flush with plenty of water or soap.</p> <p>Inhalation Exposure: If inhaled the internals of battery vomiting. Seeking Immediate medical attention.</p> <p>Ingestion Exposure: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.</p>

SECTION 5 - FIRE FIGHTING MEASURES
<p>Danger characteristic: Exposure to excessive heat can cause venting of the liquid electrolyte. Battery may burst and release hazardous decomposition products when exposed to a fire situation.</p>
<p>Hazardous combustion products: Corrosive and toxic gas may be emitted during fire.</p>
<p>Fire-Fighting method: The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.</p>
<p>Fire-Fighting media: Plenty of water, dry chemical powder or carbon dioxide.</p>

SECTION 6 - ACCIDENTAL RELEASE MEASURES
<p>Emergency treatment: If the battery material is released, remove personnel from area until the batteries cool down and fumes dissipate. Provide maximum ventilation to clear out hazardous gases and avoid skin and eye contact or inhalation of vapors Remove spilled liquid with absorbent and incinerate waste.</p>

SECTION 7 - HANDLING AND STORAGE
<p>Handling:</p> <ol style="list-style-type: none"> 1. Do not allow battery terminates to contact each other, or contact with other metals. 2. Do not put the cell or battery into a fire or heat it. Do not solder the cell directly. Do not use or leave the cell or battery in a place near fire or heaters. 3. Do not expose the battery to excessive physical shock or vibration. 4. Do not immerse, throw, and wet a battery in water. 5. Short-circuiting should be avoided. Short circuit will reduces the life of the battery and can lead to ignition of surrounding materials. Physical contact with to short- circuited battery can cause skin burn. 6. The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. 7. Place the cell beyond the child packing and container. 8. Do not connect the battery directly to an electric outlet or cigarette socket in a car. 9. Be sure to use the specified charger for battery, and follow the charging instructions correctly. 10. Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer batteries or product. <p>Storage:</p> <ol style="list-style-type: none"> 1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks. 2. Keep the sample in the cool, dry and well-ventilated place (temperature: -20~30 °C, humidity: 45~85%). Do not exposure to direct sunlight for long periods. Keep away from fire and heating sources. Don't keep the samples with oxidizer and acid. 3. Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divulgence handling. 4. For rechargeable battery, charge the battery every 6 months to the amount specified by the manufacture, even if the battery is not used.



SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION	
Engineering Control:	Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place.
Respiratory Protection:	Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.
Eyes Protection:	Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery.
Skin and Body Protection:	Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.
Hands Protection:	Not necessary under conditions of normal use. Wear chemical resistant rubber glove.
Other Protections:	No smoking, dining and drinking water in the workplace. Keep good habit of hygiene.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	Blue
Physical state:	Solid
Form:	Cylindrical
Odor:	Odorless
Solubility:	Insoluble in water.

SECTION 10 - STABILITY AND REACTIVITY	
Stability:	Stable under normal temperature and pressure.
Distribution of Ban:	Explosives, inflammables, strong oxidants and corrosives
Conditions to Avoid:	Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature above 100°C, direct sunlight and high humidity, immerse in water or overcharge.
Hazardous Polymerization:	Will not occur.
Hazardous Decomposition Products:	Metal oxides, carboxyl compound such as CO, CO ₂ , etc.

SECTION 11 - TOXICOLOGICAL INFORMATION	
Acute Toxicity:	No information is available.
Sub-acute and Chronic Toxicity:	No information is available.
Irritation Data:	The internal battery materials may cause irritation to eyes and skin.
Sensitization:	The liquid in the battery may cause sensitization to some person.

沈
 专用

<p>Mutagenicity: No information is available.</p>
<p>Carcinogenicity: Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).</p>
<p>Others: Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.</p>

SECTION 12 - ECOLOGICAL INFORMATION
<p>Eco-toxicity: No information is available.</p>
<p>Biodegradable: No information is available.</p>
<p>Mobility in soil: No information is available.</p>
<p>Bioconcentration or biological accumulation: No information is available.</p>
<p>Other harmful effects: Don't abandon the battery into environment, may cause water or soil pollution.</p>

SECTION 13 - DISPOSAL CONSIDERATIONS
<p>Appropriate Method of Substance: The battery should be completely discharged prior to disposal in order to prevent short circuit. The battery contains recyclable materials, and it is suggested recycle. Refer to National or Local regulations before handling. Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in National or Local regulations of hazardous waste treatment and hazardous waste transportation.</p>

SECTION 14 - TRANSPORT INFORMATION	
<p>Lithium batteries are classified to Lithium ion batteries (including lithium ion polymer batteries) and Lithium metal batteries (including lithium alloy batteries). Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "PI965-970 section II of IATA-DGR" or "special provision 188 of IMO-IMDG Code".</p>	
Air transportation, according to IATA DGR 61 st Edition (Effective 1 January-31December 2020)	
UN Number	UN 3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	Class 9
Packaging requirement	PACKING INSTRUCTION 965 of section IB
UN Number	UN 3481
Proper Shipping Name	LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Hazard Class	Not restricted
Packaging requirement	PACKING INSTRUCTION 966-967 of section II

安全
 标志
 印章

Report No.: XZ20200909MSDS01



Sea transportation, according to IMO IMDG Code (Amend 39-2018)	
UN Number + Proper Shipping Name	UN 3480 LITHIUM ION BATTERIES, or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Not-restricted goods
EmS No.	F-A, S-I

SECTION 15 - REGULATORY INFORMATION

Dangerous Goods Regulation (DGR)
Recommendations on the Transport of Dangerous Goods Model Regulations
International Maritime Dangerous Goods (IMDG)
Occupational Safety and Health Act (OSHA)
Toxic Substances Control Act (TSCA)
Code of Federal Regulations (CFR)
Technical Instructions for the Safe Transport of Dangerous Goods
California Proposition 65
Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)
 In accordance with all Federal, State and local laws.

SECTION 16 - ADDITIONAL INFORMATION

Accordinging standard:

GB/T 16483-2008 Safety data sheet for chemical products Content and order of sections
ISO 11014:2009(E) Safety data sheet for chemical products – Content and order of sections

Editing date:

October 09,2020

Department:

Guangzhou MCM Certification and Testing Co., Ltd.
 1 F No.13, Zhong San Section, ShiGuang Road, Panyu District, Guangzhou City, Guangdong Province, China.
 Tel.:0086-20-34777662, 0086-20-34777663
 WEB: [Http://www.mcmtek.com](http://www.mcmtek.com)
 Email: mark.miao@mcmtek.com

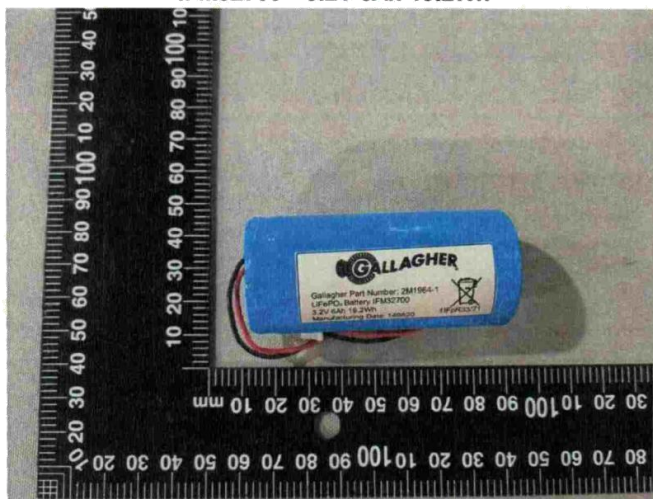
Other Information:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damage of any third party or for last profits or any special, indirect, consequential or exemplary damages arising from using the above information.



Sample Reference Photo

IFM32700 3.2V 6Ah 19.2Wh



Gallagher Part Number: 2M1964-1	
LiFePO ₄ Battery IFM32700	
3.2V 6Ah 19.2Wh	
Manufacturing Date: 140820	
	 1IFpR33/71