

Material Safety Data Sheet

File No.: EBO2112046-M071

Date of Issue: January 4, 2022

Page 1 of 7

1. Identification of Substance

Product Details

Product Name: Efest 18650 3000mah 3.7V battery
Product Model: 18650 3000mah
Manufacturer/Supplier By: SHENZHEN FEST TECHNOLOGY CO., LTD
Floor 8, Building C, SAR 1980 Cultural Industry Park, Minfu Road, Minzhi,
Longhua New District, Shenzhen, Guangdong, China
Emergency Tel: +86-755-89304183
Fax: +86-755-27764602

2. Hazards Identification

OSHA Regulatory Status: This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery. While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

For the battery cell, chemical materials are stored in a hermetically sealed metal or metal laminated plastic case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage. However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery cell case will be breached at the extreme, hazardous materials may be released. Moreover, if heated strongly by the surrounding fire, acrid gas may be emitted.

3. Composition/Data on Components

COMPONENT	CAS No.	% By wt.
Lithium Cobalt Dioxide	12190-79-3	38.80%
Aluminum	7429-90-5	5.56%
PVDF	24937-79-9	1.17%
Graphite	7782-42-5	24.2%
Copper	7440-50-8	9.6%
SBR	/	1.76%
Polyethylene	9002-88-4	0.09%
Polypropylene	9003-07-0	0.80%
Lithium Hexafluorophosphate	21324-40-3	15.30%

Material Safety Data Sheet

File No.: EBO2112046-M071

Date of Issue: January 4, 2022

Page 2 of 7

Electrolyte Carbonate Carbonate	/	2.72%
---------------------------------	---	-------

4. First aid Measures

- Eyes:** Rinse opened eye for at least 15 minutes under running water. Then consult a doctor.
- Skin:** Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
- Inhalation:** Supply fresh air. If necessary give oxygen. Keep patient warm.
Seek immediate medical advice.
- Ingestion:** Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.

5. Fire Fighting Measures

- Suitable extinguishing agents:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.
- Hazardous Combustion Products:** When burned, hazardous products of combustion including fume of carbon monoxide and carbon dioxide can occur.
- Basic Fire Fighting Procedures:** As in any fire, firefighters should wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. Accidental Release Measures

- Person related measures:** Wear personal protective equipment adapted to the situation (protection gloves, face protection, breathing protection).
- Environment protection measures:** Bind released ingredients with powder (rock salt, sand).
Dispose off according to the local law and rules.
Avoid leached substances to penetrate into the earth, canalization or water.
- Treatment for cleaning:** If battery casing is dismantled, small amounts of electrolyte may leak. Package the battery tightly including ingredients together with lime, sand or rock salt.
Then clean with water.

7. Handling and Storage

- Handling:** When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.
Use strong material for packaging boxes so that they will not be damaged by

Material Safety Data Sheet

File No.: EBO2112046-M071

Date of Issue: January 4, 2022

Page 3 of 7

vibration, impact, dropping and stacking during their transportation.

Do not short-circuit, deform, throw into fire or disassemble.

Charge according to the conditions specified.

Do not mix different type of batteries.

Do not solder directly onto batteries.

Insert the battery correctly in electrical equipment.

Storage:

Be sure to store batteries in well-ventilated, dry and cool conditions.

Keep away from water, rain, snow, frost or dew condensation.

Do not store batteries near source of heat or nozzle of hot air.

Do not store batteries in direct sunshine.

Enough number of fire fighting apparatuses should be installed in warehouse.

Keep batteries out of reach of children.

8. Exposure Controls and Personal Protection





Respiratory protection: If the battery leaks, the need for full ventilation.

Hand Protection: Under normal use, do not.

Personal Protection: Under normal use, do not.

Other protection: Under normal use, do not.

If the battery leaks, must wear the following protection products.

	Respiratory protection	In all fire situations, use self-contained breathing apparatus.
	Hand protection	In the event of leakage wear gloves.
	Eye protection	Safety glasses are recommended during handling.
	Other	In the event of leakage, wear chemical apron.

Material Safety Data Sheet

File No.: EBO2112046-M071

Date of Issue: January 4, 2022

Page 4 of 7

9. Physical and Chemical Properties

Nominal Voltage:	3.7V
Capacity:	3000mah
Watt-hour:	11.1Wh
Appearance characters:	Purple with odorless battery

10. Stability and Reactivity

Thermal decomposition / conditions to be avoided:	No decomposition if used according to specifications.
Dangerous Reactions:	No dangerous reactions known.
Dangerous products of decomposition:	No dangerous decomposition products known.

11. Toxicological Information

Primary irritant effect:	None, unless battery ruptures. In the event of exposure to internal contents, corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.
Inhalation:	Lung irritant.
Skin contact:	Skin irritant
Eye contact:	Eye irritant.
Ingestion:	Tissue damage to throat and gastro-respiratory tract if swallowed.
Medical conditions generally aggravated by exposure:	In the event of exposure to internal contents, eczema, skin allergies, lung injuries, asthma and other respiratory disorders may occur.

12. Ecological Information

General notes:	Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
-----------------------	----------------------------------------------------------------------------------------------------------------

13. Disposal Considerations

Waste Disposal Method:	Waste Lithium ion batteries are classified by the federal government as non-hazardous waste and are safe for disposal in the normal municipal waste stream. Large quantities of open batteries should be treated as hazardous waste. Dispose of in accordance with state regulations.
-------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Material Safety Data Sheet

File No.: EBO2112046-M071

Date of Issue: January 4, 2022

Page 5 of 7

Do not incinerate, since batteries may explode at excessive temperatures.

14. Transport Information

Lithium ion batteries are tested according to IATA DGR 63rd Edition 2022 and all applicable carrier and government regulations and 38.3 of the “UN Manual of Tests and Criteria” for compliance with the requirements of special provisions ADR 188, IMDG 188, DOT / 49 CFR § 173.102, 49 CFR Part 171 Subpart C. 49 CFR Parts 171 – 180, 49 CFR 175 and the requirements of IATA DGR packing instruction 965 Section II or 966 Section II and SP A201, A213, A334 are otherwise “excepted” from the requirements of the regulations.

Corrugated Box (Thickness > 6mm). Each package is labeled with lithium battery handling label UN CLASS: UN3480 or UN3481. Positive test results required for classification as “non-restricted” are stated in dedicated “Declarations of Conformity”. In addition, the following conditions for non-dangerous goods classification are fulfilled by our products in original.

PI 965, PI 966-Have been revised to:

- specifically reference that lithium cells or batteries identified as damaged or defective in accordance with Special Provision A154 are forbidden for transport; and
- in Section II identify that where there are packages from multiple packing instructions on one air waybill that the compliance statement may be combined into a single statement. Examples of such statements have been included in 8.2.7.

PI 965, PI 966-Have been revised to require that:

- equipment must be secured against movement in the outer packaging; and
- multiple pieces of equipment in a package must be packed to prevent damage from contact with other equipment in the package.

Lithium battery must make available the test summary as specified in the UN Manual of Tests and Criteria, Revision 6 and amend. 1, Part III, sub-section 38.3, paragraph 38.3.5.



There is no hazards in accordance with the UN recommendations tests (Manual of Tests and Criteria, Part III, sub-section 38.3, 1.2m Drop)

No.	ITEMS	RESULT	REMARKS
1	Altitude Simulation	Pass	
2	Thermal Shock	Pass	
3	Vibration	Pass	

Material Safety Data Sheet

File No.: EBO2112046-M071

Date of Issue: January 4, 2022

Page 6 of 7

4	Shock	Pass	
5	External Short	Pass	
6	Impact/Crush	Pass	For cell only
7	Overcharge	Pass	
8	Forced Discharge	Pass	For cell only
9	1.2m Drop Test	Pass	

Each consignment is accompanied with a document with an indication that:

the package contains lithium ion cells;

the package must be handled with care, and that a flammability hazard exists if the package is damaged;

special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and a telephone number for additional information.

Transport fashion: By air, by sea.

15. Regulations

• Sara

• **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

• **Section 313 (Specific toxic chemical listings):**

None of the ingredient is listed.

• **TSCA (Toxic Substances Control Act):**

None of the ingredient is listed.

Material Safety Data Sheets (MSDS) 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 exempted from the requirements of the Hazard Communication Standard.

16. Other Information

DISCLAIMER OF LIABILITY

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other

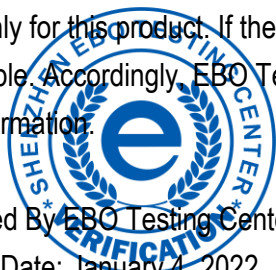
Material Safety Data Sheet

File No.: EBO2112046-M071

Date of Issue: January 4, 2022

Page 7 of 7

reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. Accordingly, EBO Testing Center will not be responsible for damages resulting from use of or reliance upon this information.



Prepared By EBO Testing Center.

Tel: 86-755-33126608

<http://www.MSDS51.com>

ebo@ebotest.com

Issuing Date: January 4, 2022