

Report No.: 18270BC00132205

MSDS REPORT

Client Name : Shenzhen EcoFlow Technology Limited
Address : Room 607, Block G3, TCL Science Park International E city,
Nanshan District, Shenzhen, 518055, China
Product Name : R600 Portable Power Station Solar Generator
Date : Jul. 10, 2020

Shenzhen Anbotek Compliance Laboratory Limited



MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Identification

Sample name: R600 Portable Power Station Solar Generator
Battery model: EF4
Rating: Battery Nominal Voltage: 28.8V
AC Output (x3): 600W(Surge 1200W)
USB-A Output (x2): 5Vdc,2.4A,12W Max,per port
USB-A Fast Charge Output (81): 5Vdc,9Vdc,12Vdc,2.4A,28W
USB-C Output (x1): 5Vdc,9Vdc,12Vdc,15Vdc 20Vdc 5A,100W
Car Power Output (x1): 13.6Vdc,10A,136W Max
X-STREAM Charge: 250W(500W with Excess Battery) Max
AC Charge Input Voltage: 100-120Vac,50Hz/60Hz
AC Charge Input Voltage: 100-120Vac,50Hz/60Hz
Rated Capacity: 10000mAh, 288Wh
Weight: 5.22Kg
Manufacturer: Shenzhen EcoFlow Technology Limited
Address: Room 607, Block G3, TCL Science Park International E city,
Nanshan District, Shenzhen, 518055, China
Factory: Shenzhen EcoFlow Technology Limited
Address: Room 607, Block G3, TCL Science Park International E city,
Nanshan District, Shenzhen, 518055, China
Telephone no: /
Fax: /
E-mail: /
Date of received: Jun. 23, 2020
Date of report: Jun. 24, 2020

Written by: *Fannie Zhu*Approved by: *Davis Yang*

2. Composition/Information on Ingredients

Chemical Name	Percent of Content	CAS No.
Li(NiCoMn)O ₂	25%~35%	113066-89-0
Graphite (C)	15%~20%	7782-42-5
Poly Vinylidene Fluoride (PVDF)	1%~5%	24937-79-9
Acetylene Black (SP)	0.5%~3%	1333-86-4
Aluminum(AL)	21%~23%	7429-90-5
Copper(Cu)	10%~11%	7440-50-8
Lithium hexafluorophosphate (LiPF ₆)	10%~15%	21324-40-3

3. Hazards Summarizing

Danger sort: N/A

Routes of entry:

1. Eyes and Skin—When leaking, the electrolyte solution contained in the battery irritates to ocular tissues and the skin.
2. Inhalation—Respiratory (and eye) irritation may occur if fumes are released due heat or an abundance of leaking batteries.
3. Ingestion—The ingestion of the battery can be harmful. Content of open battery can cause serious chemical burns of mouth, esophagus and gastrointestinal tract.

Health harm:

Exposure to leaking electrolyte from ruptured or leaking battery can cause:

1. Inhalation—Burns and irritation of the respiratory system, coughing, wheezing, and shortness of breath.
2. Eyes—Redness, tearing, burns. The electrolyte is corrosive to all ocular tissues.
3. Skin—The electrolyte is corrosive and causes skin irritation and burns.
4. Ingestion—The electrolyte solution causes tissue damage to throat and gastrointestinal track.

Environment harm: Not necessary under conditions of normal use.

Explosion danger: The battery may be explosive at high temperature (above 150°C) or exposing to the fire.

4. First Aid Measures

Skin contact: Not anticipated. If the battery is leaking and the contained material contacts the skin, flush with copious amounts of clear water for at least 15 minutes.

Eye contact: Not anticipated. If the battery is leaking and the contained material contacts eyes, flush with copious amounts of clear water for at least 15 minutes. Get medical attention at once.

Inhalation: Not anticipated. If the battery is leaking, remove to fresh air. If irritation persists, consult a physician.

Ingestion: Not anticipated. If the battery is leaking and the contained material is ingested, rinse mouth and surrounding area with clear water at once. Consult a physician immediately for treatment.

5. Fire Fighting Measures

Unusual Fire and Explosion Hazards: Battery may explode or leak potentially hazardous vapors subject to: exposed to excessive heat (above the maximum rated temperature as specified by the manufacturer) or fire, over-charged, short circuit, punctured and crushed.

Hazardous Combustion Products: Fire, excessive heat, or over voltage conditions may produce hazardous decomposition products. Damaged batteries can result in rapid heating and the release of flammable vapors.

Extinguishing Media: Dry chemical type extinguishers are the most effective means to extinguish a battery fire. A CO₂ extinguisher will also work effectively.

Fire Fighting Procedures: Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire. Full protective clothing is necessary. During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.

6. Accidental Release Measures

The material contained within the battery would only be released under abusive conditions. In the event of battery rupture and leakage, collect all the released materials that are not hot or burning in an appropriate waste disposal container while wearing proper protective clothing and ventilate the area. Placed in approved container and disposed according to the local regulations.

7. Handling and Storage

Handling:

1. Batteries are designed to be recharged. However, improperly charging a battery may



cause the battery to flame. When charging the battery, use dedicated chargers and follow the specified conditions.

2. Never disassemble or modify a battery.
3. Do not immerse, throw, and wet a battery in water.
4. Should a battery unintentionally be crushed, thus releasing its contents, rubber gloves must be used to handle all battery components. Avoid the inhalation of any vapors that may be emitted.
5. Short circuit causes heating. In addition, short circuit 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. Avoid reversing the battery polarity, which can cause the battery to be damaged or flame.
7. In the event of skin or eye exposure to the electrolyte, refer to Section 4, First Aid Measures.

Storage:

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. Do not place batteries near heating equipment, nor expose to direct sunlight for long periods.
2. Do not store batteries above 35°C or below -20°C. Store batteries in a cool (about 20°C±5°C) in a long time, dry and ventilated area that is subject to little temperature change. Elevated temperatures can result in reduced battery cycle life. Battery exposure to temperatures in excess of 60°C will result in the battery venting flammable liquid and gases.
3. Keep batteries in original package until use and do not jumble them.

8. Exposure Controls/Personal Protection

Engineering Controls: Keep away from heat and open flame.

Ventilation: Not necessary under conditions of normal use. In case of abuse, use adequate mechanical ventilation (local exhaust) for the battery that vent gas or fumes.

Respiratory Protection: Not necessary under conditions of normal use. If battery is burning, leave the area immediately. During fire fighting fireman should use self-contained breathing, full-face respiratory equipment. Fires may be fought but only from safe fire fighting distance, evacuate all persons from the area of fire immediately.

Eye Protection: Not necessary under conditions of normal use. Use safety glasses with side shields if handling a leaking or ruptured battery.



Body Protection: Not necessary under conditions of normal use. Use rubber apron and protective working in case of handling a leaking of ruptured battery.

Protective Gloves: Not necessary under conditions of normal use. Use chemical resistant rubber gloves if handling a leaking or ruptured battery.

Others: Use good chemical hygiene practice. Wash hands thoroughly after cleaning-up a battery spill caused by leaking battery. No eating, drinking, or smoking in battery storage area.

9. Physical and Chemical Properties

State:	Solid
Odor:	N/A
pH:	N/A
Vapor pressure:	N/A
Vapor density:	N/A
Boiling point:	N/A
Solubility in water:	Insoluble
Specific gravity:	N/A
Density:	N/A

10. Stability and Reactivity

Stability: Stable

Conditions to Avoid: Do not heat, throw into fire, disassemble, short circuit, immerse in water or overcharge, etc.

Incompatibility: None during normal operation. Avoid exposure heat, open flame and corrosives.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: The battery may release irritative gas once the electrolyte leakage.

11. Toxicological Information

The battery does not elicit toxicological properties during routine handling and use. If the battery is opened through misuse or damage, discard immediately. Internal components of cell are irritant and sensitization.

Irritancy: The electrolytes contained in this battery can irritate eyes with any contact. Prolonged contact with the skin or mucous membranes may cause irritation.

Sensitization: No information is available.

Teratogenicity: No information is available.



Carcinogenicity: No information is available.

Mutagenicity: No information is available.

Reproductive toxicity: No information is available.

12. Ecological Information

1. When properly used and disposed, the battery does not present environmental hazard.
2. The battery does not contain mercury, cadmium, or lead.
3. Do not let internal components enter marine environment. Avoid releasing to water ways, wastewater or ground water.

13. Disposal Considerations

1. Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation.
2. The battery should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. When completely discharged it is not considered hazardous.
3. The battery contains recyclable materials. Recycling options available in your local area should be considered when disposing of this product, through licensed waste Carrier.

14. Transport Information

According to PACKING INSTRUCTION 965 of IATA DGR 61st Edition for transportation, the special provision 230 of IMDG (inc Amdt 39-18). The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrate and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle and ship should be cleaned and sterilized before transport. During transport, the vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area.



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(a) UN number

3480

(b) UN Proper shipping name

LITHIUM ION BATTERIES (including lithium ion polymer batteries)

(c) Transport hazard class(es)

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(d) Packing Instruction (if applicable)

965 IA

(e) Marine pollutant (Yes/No)

No

(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

No information available.

(g) Special precautions

No information available.

15. Regulatory Information

The transport of rechargeable lithium-ion batteries regulated by the united nations as detailed in the “model Regulations on the transport of dangerous Goods Ref. ST/SG/AC.10/1 Revision 20 2017”.

Defined by UN in the “Recommendations on the transport of Dangerous Goods Chapter 38.3 Manual of Tests and Criteria Ref. ST/SG/AC.10/11 Rev.6/Amend.1 2017”. The Lithium-ion Cells and the battery Packs may or may not be assigned to the UN No. 3480 Class-9 that is restricted for transport.

16. Other Information

Prepared Department: Shenzhen EcoFlow Technology Limited

-- End of report --



Report No.: 18270BC00132202

报告编号

LITHIUM CELLS OR BATTERIES TEST SUMMARY IN ACCORDANCE WITH SUB-SECTION 38.3 OF
MANUAL OF TESTS AND CRITERIA

基于《试验和标准手册》第 38.3 部分的锂电芯或锂电池试验概要

BATTERY TRANSPORTION INFORMATION 电池运输信息

Model, Name and Parameter of Lithium Cell or Battery:

锂电芯或电池型号、名称及参数

Name 名称: R600 Portable Power Station Solar Generator 便携式移动太阳能锂电发电储能设备Model 型号: EF4

Type 类型:

Li-Metal Cell 锂金属电芯 Single Cell Li-Metal Battery 单电芯锂金属电池 Li-Metal Battery 锂金属电池组 Li-ion Cell 锂离子电芯 Single Cell Li-ion Battery 单电芯锂离子电池 Li-ion Battery 锂离子电池组 Battery assemble 集成电池

Watt-hours/Lithium Content 瓦时/锂含量: 288WhMass 质量: 5.23kgPhysical shape 物理形状: Prismatic 棱柱形

Informations of Manufacturer:

锂电芯或电池制造商信息

Name: Shenzhen EcoFlow Technology Limited名称: 深圳市正浩创新科技有限公司Address: Room 607, Block G3, TCL Science Park International E city, Nanshan District, Shenzhen, 518055, China地址: 深圳市南山区 TCL 国际 E 城 G3 栋 607 室Tel 电话: 0755-86660185E-mail 邮箱: company@ecoflow.comWebsite 网站: https://ecoflow.com/

Information of Test Lab:

测试机构信息

Name: Shenzhen Anbotek Compliance Laboratory Limited名称: 深圳安博检测股份有限公司Address: East of 4/F., Building A, Hourui No.3 Industrial Zone, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China地址: 广东省深圳市宝安区西乡街道后瑞第三工业区 A 栋 4 楼东Tel 电话: +86-755-26066126E-mail 邮箱: service@anbotek.comWebsite 网站: www.anbotek.com

UN38.3 Test Item UN38.3 测试项目:

Test T.1: Altitude Simulation 高度模拟 : Pass/ 通过

Test T.2: Thermal test 热测试 : Pass/ 通过

Test T.3: Vibration 振动 : Pass/ 通过

Test T.4: Shock 冲击 : Pass/ 通过

Test T.5: External Short Circuit 外部短路: Pass/ 通过

Test T.6: Impact 撞击 : Pass/ 通过

Test T.7: Overcharge 过充电 : Pass/ 通过

Test T.8: Forced Discharge 强制放电 : Pass/ 通过

Test Report Number:

测试报告编号

18270BC00132201

Date of Test Report:

测试报告日期

2020-07-10

Reference to assembled battery testing requirements 集成电池组试验要求:

 Not application 不适用 UN38.3.3(f) UN38.3.3(g)

Edition of used Sub-section 38.3 of Manual of Tests and Criteria 关于所用《试验和标准手册》38.3 章节修订版本:

<United Nations Recommendations on the Transport of Dangerous Goods: Manual of Tests and Criteria> (Sixth revised edition Amendment 1)

《联合国关于危险品运输建议书-试验和标准手册》(ST/SG/AC.10/11/Rev.6/Amend. 1)

Approved by (Laboratory Manager):

批准(实验室经理)

杨译

Check by (Project Engineer):

审核(项目工程师)

白德勇

Date 日期: 2020-07-10Date 日期: 2020-07-10

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