

# LITHIUM BATTERY TEST SUMMARY AND SUPPLIER INQUIRY

IN ACCORDANCE WITH SUB-SECTION 38.3

OF MANUAL OF TESTS AND CRITERIA

<b>1. Name/Description of battery</b>
<b>Portable Power Station</b> LITHIUM ION BATTERIES
<b>1a. Name/Description of the cells inside the battery</b>
<b>Rechargeable Li-ion Battery</b>

The test summary of the cells inside the battery must either be presented or under checkpoint 9 and 9a it must be confirmed that the UN 38.3 test summary for the cells is available.

<b>2. Manufacturer of battery</b>	
Name	Henan Great Power Energy Co.,Ltd
Address	At the intersection of Huaihe Road and Zhongyuan Avenue,Zhumadian City,Henan Province
Phone	+86-0396-2709657
Email	liyongju@greatpower.net
Website	http://www.greatpower.net

<b>2a. Manufacturer of the equipment (if the battery is contained in equipment)</b>	
Name	ZHEJIANG LEIYA ELECTRONICS CO.,LTD.
Address	No.528, 4th Avenue,Binhai, Economic and Technological Development Zone,Wenzhou,Zhejiang,China
Phone	TEL :86-577-86829999
Email	agnes1@china-newfocus.com
Website	http://www.erayak.com

<b>3. Test laboratory of battery</b>	
Name	Shanghai Institute of Chemical Industry Testing Co.,Ltd.
Address	No.345 East Yunling Road,Putuo,Shanghai,China 200062
Phone	86-21-31765555
Email	battery@ghs.cn
Website	www.ghs.cn

<b>4. ID-number and date</b>			
Unique test report identification number	NO.1122080035	Date of test report	2022-8-26

## DESCRIPTION OF BATTERY

5. Mark the type of battery with an "X"					
X	Lithium ion battery		Lithium metal battery		Lithium hybrid battery

<b>6. Parameters</b>		
Mass in gram (g):		3960
Lithium ion: Indicate watt-hour rating (Wh):		315
Lithium metal: Indicate lithium metal content in gram (g):		
Lithium hybrid: Indicate lithium metal content in gram (g) and watt-hour rating (Wh):		

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<b>7. Physical description of battery</b>
<b>Appearance: cylinder</b>

<b>8. Model numbers</b>
INR18650-2500mAh

## TESTS AND RESULTS

<b>9. List of tests conducted and results - Mark N/A, pass or fail with an "X"</b>	N/A	Pass	Fail
T1 - Altitude simulation		X	
T2 - Thermal Test		X	
T3 - Vibration		X	
T4 - Shock		X	
T5 - External Short Circuit		X	
T6 - Impact - for cylindrical cells having a diameter of at least 18 mm See check point 1a and 9a.		X	
T6 - Crush - for prismatic cells, pouch cells, button cells and cylindrical cells having a diameter of less than 18 mm. See check point 1a and 9a.		X	
T7 - Overcharge		X	
T8 - Forced Discharge, only valid for cells. See check point 1a and 9a.		X	
9 List the tests conducted and results-T9 Text	X		
9 List the tests conducted and results-T10 Text	X		

<b>9a. UN 38.3 Test Confirmation for the Cells inside the battery</b> When no separate document for the cells is provided, this confirms that the cells inside the battery (see checkpoint 1.a.) have successfully passed the UN 38.3 test. In this case under checkpoint 9 the T.6 and T.8 must be marked as „passed“ and here under 9.a. „Cell UN 38.3 Test confirmed“ needs to be ticked.	<b>Cell UN 38.3 Test confirmed</b>	X	<b>Cell UN 38.3 Test NOT confirmed</b>	
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10. Reference to assembled battery testing requirements			
	Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Impact, Overcharge, Forced discharge	N/A	

<b>11. Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto</b>
ST/SG/AC. 10/11/Rev. 7 38. 3 UN Manual of Tests and Criteria ST/SG/AC. 10/11/Rev. 7 Section 38.

## ADDITIONAL SUPPLIER INQUIRY

<b>12. Quality management system for manufacturing batteries</b> Does the manufacturer of the battery manufacture the products based on a documented quality management system according to transport regulations?	yes	X	no	
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<b>13. Are the following parameters exceeded?</b> Lithium ion battery: more than 100 Wh		X	no	
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Lithium metal battery: more than 2 g Lithium	yes			
Lithium hybrid Battery: more than 1,5 g Lithium and/or more than 10 Wh				

<b>Check point 14 – 16 need to be answered when 13 has been ticked “YES”:</b>				
<b>14.</b> Does each battery incorporates a safety venting device or is designed to preclude a violent rupture under normal conditions of carriage?	Yes	X	no	
<b>15.</b> Is each battery equipped with an effective means of preventing external short circuits?	Yes	X	No	
<b>16.</b> Is each battery containing cells or series of cells connected in parallel equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc.)?	N/A	Yes	X	No

<b>17. Only in air transport: State of Charge (SoC) for UN 3480 Lithium ion batteries and lithium polymer batteries</b>				
State of Charge (SoC) max. 30 %	N/A	Yes	X	No

## BATTERIES INSTALLED IN EQUIPMENT

<b>18. Check point 18 needs to be answered when the batteries are installed in articles:</b>				
<b>18.a)</b> Only button cells enclosed?	Yes		No	X
<b>18.b)</b> Number of enclosed batteries per equipment				35
<b>When the equipment is intentionally active/switched on during transport e.g. data loggers:</b>				
<b>18.c)</b> Confirmation that no dangerous amount of heat is emitted from the equipment	N/A	Yes	X	No
<b>18.d)</b> Confirmation that the equipment when transported by air fulfills the defined air transport standards for electromagnetic radiation according to DO-160	N/A	Yes	X	No

<b>19. Place, Date</b>	<b>20. Title, Surname, First name and signature</b>	<b>21. Company stamp</b>
06.01.2023	CEO Pekcan Pascal 	Technaxx Deutschland GmbH & Co.KG Konrad-Zuse-Ring 16-18 61137 Schöneck-Kilianstädten Fon +49 (0)6187 / 200 92-0 • Fax -16





中国认可  
检验  
INSPECTION  
CNAS IB0071



NO.2622090125

# SAFETYDATASHEET

**Product Name:** Portable Power Station  
BDS-300A2/5V/12. 5Ah/315Wh

**Effective Date:** 2022-09-27

**Compiler:** Chen Yushuang

**Checker:** Dongxuesheng

**Approver:** Fengzhao



Shanghai Institute of Chemical Industry Testing Co., Ltd.





Ternary Materials	28.4%	182442-95-1	695-690-9
Graphite	17.1%	7782-42-5	231-955-3
Copper	5.7%	7440-50-8	231-159-6
Diethyl carbonate	4.7%	105-58-8	203-311-1
Dimethyl carbonate	3.8%	616-38-6	210-478-4
Ethylene carbonate	3.4%	96-49-1	202-510-0
Aluminum	2.5%	7429-90-5	231-072-3
Polypropylene	2%	9003-07-0	618-352-4
Lithium hexafluorophosphate	1.3%	21324-40-3	244-334-7

#### SECTION4 FIRST-AID MEASURES

##### Skin Exposure:

If in contact with the internal materials of battery, remove the contaminated clothing, shoes and socks, immediately flush with plenty of water for at least 20 minutes. Call a physician.

##### Eye Exposure:

If in contact with the internal materials of battery, lift your eyelids immediately and rinse them with running water for more than 20 minutes. Call a physician.

##### Inhalation Exposure:

If the internal materials of battery are inhaled, immediately remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician.

##### Oral Exposure:

Do not induce vomiting if the internal materials of battery are swallowed. Call a physician immediately.

##### Most Important Symptoms/Effects, Acute and Delayed:

No data available.

##### Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary:

No data available.

#### SECTION5 FIRE FIGHTING MEASURES

##### Suitable Extinguishing Media:

Suitable:Water spray or regular foam.

##### Specific Hazards Arising from the Chemical:

May decompose upon combustion to generate irritating, corrosive or toxic fumes. Fumes may cause dizziness or suffocation.

##### Special Protective Action for Fire-fighters:

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Fire-extinguishing work is done from the windward. Uninvolved persons should evacuate to a safe place.

#### SECTION6 ACCIDENTAL RELEASE MEASURES

##### Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protective equipment. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Entry to noninvolved personnel should be controlled around the leakage area by roping off. Remove all sources of ignition.



**Environmental Precautions:**

Avoid leakage getting into the earth, ditches or waters. Avoid directly releasing the washing waste-water into the environment.

**Methods and Materials for Containment and Cleaning up:**

If the electrolyte leaks, use soil, sand or other non-combustible materials to absorb. The leaked batteries and dirty adsorbents should be placed in metal containers.

**SECTION7 HANDLING AND STORAGE****Precautions for Safe Handling:**

Operators should be trained and strictly abide by operating procedures. Wear appropriate protective clothing and safety gloves. Keep away from ignition sources, heat and flame. No smoking at working site. Handling is performed in a well ventilated place. Avoid disassembling the battery at will and reversing battery polarity within the battery assembly. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. If the electrolyte leaks, avoid directly contacting with eyes and skin. Avoid inhalation. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives.

**Conditions for Safe Storage, Including Any Incompatibilities:**

Store in a cool, dry, and well-ventilated area. Keep away from ignition sources, heat and flame. Incompatibilities: Strong oxidizing agents, combustible materials and corrosives. The battery must be firmly packed in inner packaging so as to effectively prevent short circuits and short circuits caused by movement. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

**SECTION8 EXPOSURE CONTROL/PPE****Control Parameters:**

GBZ 2.1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace - Part 1: Chemical Hazardous Agents:

Nickel metal and insoluble compounds PC-TWA 1mg/m<sup>3</sup> Remarks: G1 (Nickel compounds), Sensitization

Cobalt and compounds, as Co: PC-TWA 0.05 mg/m<sup>3</sup>; PC-STEL 0.1 mg/m<sup>3</sup> Remarks: G2B; Sensitization

Manganese and inorganic compounds, as MnO<sub>2</sub>: PC-TWA 0.15 mg/m<sup>3</sup>

Aluminum metal, aluminum alloy dust: PC-TWA 3 mg/m<sup>3</sup> (Total dust)

Copper (calculated as Cu): Copper dust PC-TWA 1 mg/m<sup>3</sup>; Copper smoke PC-TWA 0.2 mg/m<sup>3</sup>

Graphite dust: PC-TWA 4 mg/m<sup>3</sup> (Total dust); PC-TWA 2 mg/m<sup>3</sup> (Inhalable dust)

Polypropylene dust: PC-TWA 5 mg/m<sup>3</sup> (Total dust)

ACGIH:

Aluminum: TLV-TWA 1 mg/m<sup>3</sup>

Copper: TLV-TWA 1 mg (Cu) /m<sup>3</sup> Dust, smoke; TLV-TWA 0.2 mg (Cu) /m<sup>3</sup> Smoke

Graphite: TLV-TWA 2 mg/m<sup>3</sup>

Nickel: TLV-TWA 1 mg/m<sup>3</sup>

**Appropriate Engineering Controls:**

Mechanical exhaust required. Safety shower and eye bath.

**Individual Protection Measures:****Eye/Face Protection:**

Wear chemical safety glasses if needed.

**Skin Protection:**

Hand Protection: Wear safety gloves.

Body Protection: Wear appropriate protective clothing.

**Respiratory Protection:**

Wear government approved respirator if needed.



**Thermal Hazards:**

No data available.

**Other Protect:**

No smoking, drinking and eating at working site. Wash thoroughly after handling.

**SECTION9 PHYSICAL/CHEMICAL PROPERTIES**

Appearance:	Multicolor plastics cement shell
Odor:	Odorless
pH Value:	8-9
Solubility:	Partial soluble in water
Boiling Point, Initial Boiling Point and Boiling Range:	No data available
Melting Point/Freezing Point:	>300°C
Flash Point (Closed Cup):	No data available
Density/Relative Density:	No data available
Kinematic Viscosity:	No data available
Lower/Upper Explosion Limit/Flammabili ty Limit:	No data available
Vapour Pressure:	No data available
Relative Vapor Density:	No data available
Partition Coefficient N-Octanol/Water( Log Value):	No data available
Autoignition Temperature:	No data available
Decomposition Temperature:	No data available
Particle Characteristics:	No data available
Flammability (Solid, Gas):	No data available

**SECTION10 STABILITY AND REACTIVITY****Reactivity:**

No data available.

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Possibility of Hazardous Reactions:**

No data available.

**Conditions to Avoid:**



Avoid misoperation, exposure to heat and open flame. Avoid mechanical or electrical abuse and overcharge.  
Prevent short circuits and short circuits caused by movement.

**Incompatible Materials:**

Strong oxidizing agents, combustible materials and corrosives.

**Hazardous Decomposition Products:**

Carbon oxides, metal oxides, etc.

**SECTION11 TOXICOLOGICAL INFORMATION**

**Acute Toxicity:**

No data available.

**Skin Corrosion/Irritation:**

The electrolyte in the battery causes skin irritation.

**Serious Eye Damage/Irritation:**

The electrolyte in the battery causes eye irritation.

**Respiratory Sensitization:**

No data available.

**Carcinogenicity:**

No data available.

**Skin Sensitization:**

No data available.

**Germ Cell Mutagenicity:**

No data available.

**Reproductive Toxicity:**

No data available.

**Specific Target Organ Toxicity -Single Exposure:**

No data available.

**Specific Target Organ Toxicity -Repeated Exposure:**

No data available.

**Aspiration Hazard:**

No data available.

**SECTION12 ECOLOGICAL INFORMATION**

**Toxicity:**

No data available.

**Persistence and Degradability:**

No data available.

**Bioaccumulative Potential:**

No data available.

**Mobility in Soil:**

No data available.

**Other Adverse Effects:**

No data available.

**SECTION13 DISPOSAL CONSIDERATION**

**Disposal Methods:**



The disposal of discarded battery shall comply with the requirements of relevant laws, regulations, policies and standards such as the "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste" and "Technical Policy for the Prevention and Control of Waste Battery Pollution". Contact a licensed professional waste disposal service to dispose of wastes. Used battery being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.

## SECTION14 TRANSPORT INFORMATION

Only Lithium  
Battery during  
Transport:

The product has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3.

RID/ADR (2021  
Edition) :

Hazard Class: 9

UN Number: UN3480

Packaging Marks: Miscellaneous

Proper Shipping Name: Lithium ion batteries

According to 2.2.9.1.7 (g) of RID/ADR (2021 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

IATA DGR (63<sup>rd</sup>  
Edition) :

Hazard Class: 9

UN Number: UN3480

Packaging Marks: Miscellaneous

Proper Shipping Name: Lithium ion batteries

The product shall meet the General Requirements and section IA of Packaging Instruction 965.

According to 3.9.2.6.1(g) of IATA DGR (63<sup>rd</sup> Edition), Manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

IMO IMDG CODE

Hazard Class: 9

(2020 Edition) :UN Number: UN3480

Packaging Marks: Miscellaneous

Proper Shipping Name: Lithium ion batteries

EmS Number: F-A, S-I

According to 2.9.4.7 of IMO IMDG CODE (2020 Edition), Manufacturers and subsequent distributors of cells or batteries manufactured shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

## SECTION15 REGULATORY INFORMATION

Domestic Regulations:

Only Lithium Battery during Transport:

Regulations Concerning Road Transportation of Dangerous Goods (JT/T 617-2018) :

UN Number: 3480 Name and Description: Lithium ion batteries

List of Dangerous Goods (GB 12268-2012) :

UN Number: UN3480 Shipping Name: Lithium ion batteries Packing Group: II



**List of Dangerous Goods by Rail (2009 Edition) :**

Number: 91013 Name of Product: Lithium batteries

**International Regulations:****Directive 2006/66/EC and 2013/56/EU:**

The label, disposal and recycling of the battery shall meet the requirements of EU Directive 2006/66/EC and 2013/56/EU.

**ICAO TI:**

1. Unless be exempted according to ICAO TI, the lithium ion cell/batteries (UN 3480, PI 965) and lithium metal cell/batteries (UN 3090, PI 968) are forbidden for carriage on passenger aircraft.
2. Unless be approved according to ICAO TI, Lithium ion cells/batteries (UN 3480, PI 965) must be offered for transport at a state of charge (SoC) not exceeding 30% of their rated design capacity.
3. A shipper is not permitted to offer for transport more than one (1) package prepared according to Section II of PI 965 and PI 968 in any single consignment. Not more than one (1) package prepared in accordance with Section II of PI 965 and PI 968 may be placed into an overpack.
4. Packages prepared according to Section II of PI 965 and PI 968 must be offered to the operator separately from other cargo and must not be loaded into a unit load device (ULD) before being offered to the operator.

**SECTION16 OTHER INFORMATION****Preparation Date:**

2022-09-27

**Preparation Department:**

Shanghai Research Institute of Chemical Industry Testing Co., Ltd.  
Tel (Fax) : +86-21-52815377/31765555

**Revision:**

0

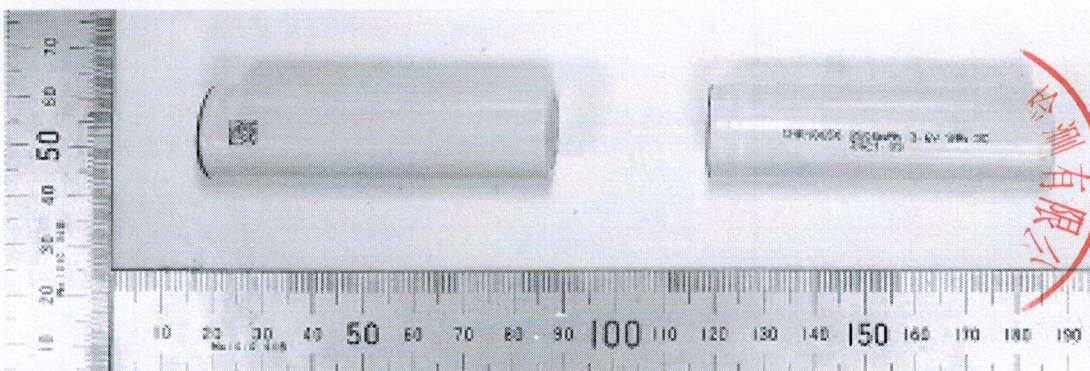
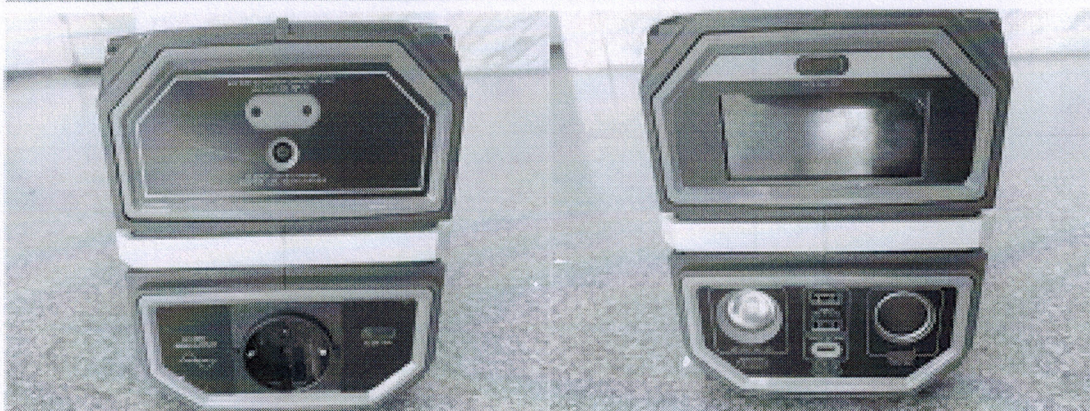
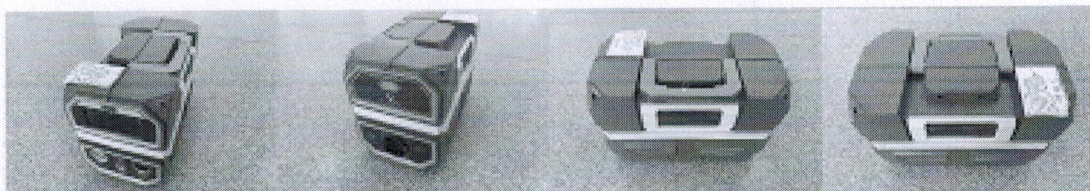
**Abbreviations and Acronyms:**

CAS: Chemical Abstracts Service EC: European Commission PC-TWA: Permissible concentration-time weighted average PC-STEL: Permissible concentration-short term exposure limit TLV-TWA: Threshold limit value-time weighted average ACGIH: American Conference of Governmental Industrial Hygienists G1: Carcinogenic to humans G2B: Possibly carcinogenic to humans Sensitization: The substance may have allergenic effects RID: Regulations concerning the International Carriage of Dangerous Goods by Rail ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road IATA DGR: International Air Transport Association Dangerous Goods Regulations IMO IMDG CODE: International Maritime Organization International Maritime Code for Dangerous Goods EmS: Emergency schedule EU: European Union ICAO TI: International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air PI: Packaging Instruction

**Other Information:**

This SDS is only compiled for battery and based on the information such as ingredients provided by the applicant and our current knowledge. This SDS shall be used only as a guide. If the battery is used as a component in another product, the information in this SDS may not be applicable. The users of this SDS must make independent judgments on the correctness and completeness and then decide its suitability according to the actual situation. The users should take the relevant legal responsibilities for the consequences of use.





Item No : BDS-300A2  
 Capacity : DC 25.2V/12.5Ah/315Wh  
 DC Input : DC 11-30V, 5A (100W Max)  
 USB-A Output (X2): DC 5V, 3.1A (Shared)  
 Type-C Output : DC 5V/9V/12V/20V, 3A (Max 60W)  
 DC Port Output: DC 12V, 10A (Max 120W)  
 AC Output : AC 230V, 50Hz, 300W Max  
 Isolated inverter  
 CE    
 ZHEJIANG LEIYA ELECTRONICS CO.,LTD.

