



RoHS TEST REPORT

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- **Report No.** : NPS2024040016
- Applicant : Zendure USA Inc.
- Address : 1765 E BAYSHORE RD # 201 EAST PALO ALTO, CA 94303-5501
- Manufacturer : ZENDURE TECHNOLOGY CO., LIMITED
- Address : RM 517,NEW CITY CENTRE, 2 LEI YUE MUN ROAD, KWUN TONG, KOWLOON.HK
- Product Name : Ace 1500 Off-grid Inverter
- Model No. : ZDACE1500

The above sample(s) and information were provided by the Applicant.

Test Requested : RoHS (Pb、Cd、Hg、Cr⁶⁺、PBBs、PBDEs、DEHP、BBP、DBP、DIBP)

- **Test Method** : Please refer to next page(s).
- Date of Test : April 16, 2024 ~ April 25, 2024
- **Test Results** : Please refer to next page(s).
- Conclusion: Based on the performed tests on submitted sample(s), the results of
Pb (Lead), Cd (Cadmium), Hg (Mercury), Cr⁶⁺ (Hexavalent chromium),
PBBs (Polybrominated biphenyls), PBDEs (Polybrominated Diphenyl Ethers),
DEHP (Di-2-ethylhexyl Phthalate), BBP (Butyl benzyl Phthalate),
DBP (Dibutyl Phthalate), DIBP (Disobutyl phthalate), Comply with the limits in
RoHS Directive 2011/65/EU and its amended Directive (EU) 2015/863.







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No.127, Chang'an Dezheng East Road, Chang'an, DongGuan, GuangDong, China Attention: To check the authenticity of testing /inspection report & certificate, please contact us attelephone: Phone (+86-769) 8701 5678 http://www.nps.gs.cn e mail:nps@nps.gs.cn Global RoHS Query http://www.rohs.gs



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Test Summary

| | | Test N | Limit | |
|---------------------------------------|--|--------------------|-------------------|-------------|
| Test Item(s) | Test Requirement | Chemical Method | X-ray Method | (mg/kg) |
| Pb (Lead) | EN 62321-3-1:2013 EN 62321-5:2013 | IEC 62321-5:2013 | | 1000 |
| Cd (Cadmium) | EN 62321-3-1:2013 EN 62321-6:2015 | IEC 62321-6:2015 | | 100 |
| Hg(Mercury) | EN 62321-3-1:2013 EN 62321-4:2017 | IEC 62321-4:2017 | IEC62321-3-1:2013 | 1000 |
| Cr ⁶⁺ (Chromium) | EN 62321-3-1:2013 EN 62321-7-2:2017 | IEC 62321-7-2:2017 | | 1000 |
| Br (PBBs+PBDEs) | EN 62321-3-1:2013 EN 62321-6:2015 | IEC 62321-6:2015 | | 1000 |
| DEHP (Di-2-ethylhexyl Phthalate) | | | | 1000 |
| BBP (Butyl benzyl Phthalate) | EN 62321-8:2017 | | | 1000 |
| DBP (Dibutyl Phthalate) | EN 02321-0.2017 | IEC 62321-8:2017 | | 1000 |
| DIBP (Diisobutyl phthalate) | | | | 1000 |

Test Conclusion

| Tested samples | Standard | Result |
|----------------------|--------------------------------|--------|
| Screening components | Screening by XRF spectroscopy | Pass |
| of submitted samples | and chemical confirmation test | Pass |

Remarks: Priority to refer to NPS internal standards to IEC 62321-3-1/4/5/6/7/8

(a) Part 3-1: Screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry

(b) Chemical test

- (1) 1 ppm =1 mg/kg = 0.0001%.
- (2) RL = Report Limit.
- (3) ND = Not Detected (< RL).
- (4) "N/A" = Not Applicable.

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XRF Screening Limit in ppm for regulated elements in various matrices.

| Element | Polymer materials | Metallic materials | Composite materials |
|---------|-----------------------------------|-----------------------------------|-----------------------------------|
| Cd | BL ≤(70 -3σ)< X <(130+3σ)≤OL | BL ≤(70 -3σ) < X < (70 +3σ)≤OL | LOD < X < (150 +3σ) ≤OL |
| Pb | BL≤ (700 -3σ) < X < (1300 +3σ)≤OL | BL≤ (700 -3σ) < X < (1300 +3σ)≤OL | BL≤ (500 -3σ) < X < (1500 +3σ)≤OL |
| Hg | BL≤ (700 -3σ) < X < (1300 +3σ)≤OL | BL≤ (700 -3σ) < X < (1300 +3σ)≤OL | BL≤ (500 -3σ) < X < (1500 +3σ)≤OL |
| Cr | BL ≤ (700-3σ)< X | BL ≤ (700-3σ)< X | BL ≤ (500-3σ)< X |
| Br | BL ≤(300-3σ)< X | Not Applicable | BL ≤(250 -3σ)< X |

Remark:

-A "BELOW LIMIT" (BL) or "OVER LIMIT" (OL) determination will be set at 30 % (50 % for composite materials) less than or greater than the limit, respectively. The margins of safety have been agreed upon based on the experience of many experts and practitioners in the industry. Further explanation for this approach to estimating uncertainty.

-The symbol "X" marks the region, where further investigation is necessary.

-LOD means Limit of Detection.

-The term "3σ" expresses the repeatability of the analyzer at the action level.

Other notes

Remark:

-Chemical confirmation tests were conducted to verify the inconclusive results, Chromium(VI)(Cr⁶⁺), Poly brominated biphenyls(PBBs) and Poly brominated diphenyl ethers(PBDEs) content.

-As requested by the applicant, only components shown in this report were screened by XRF spectroscopy for 2011/65/EU (EU) 2015/863)other components were not screened included in this report.

Disclaimers:

This XRF Screening Report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF Screening Report is sufficient for its/his/her purposes.

The results shown in this XRF Screening Report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. Plastic, Rubber, Metal, Glass, Ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

- Photos are included.

Possible test case verdicts

-Specimens, which requested to determine Cadmium, Mercury and Lead Content by chemical test, have been dissolved completely.

- 1ppm = 1mg/kg (parts per million)
- N.D.= Not detected(<RL)
- RL= Report Limit
- N/A= Not Applicable
- "--"= Not Applicable
- BL= BELOW LIMIT
- OL= OVER LIMIT
- IN= Inconclusive

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Screening by XRF Spectroscop (and Chemical Confirmation Test)

Test Item(s):Pb,Cd,Hq,Cr,Br

X-ray Method:IEC 62321-3-1:2013

Chemical method:IEC/EN62321-4、IEC/EN62321-5、IEC/EN62321-6、IEC/EN 62321-7-2

| No | No. Sample name | | XRF Results | | | | Chemical confirmation | Conclusion | |
|-----|-------------------------|------|-------------|------|------|----------|-----------------------|------------|--|
| NO. | Sample name | Pb | Cd | Hg | Cr | Br | result (mg/kg) | | |
| 1 | Black shell plastic | N.D. | N.D. | N.D. | N.D. | N.D. | - | Pass | |
| 2 | Black screws | N.D. | N.D. | N.D. | IN | | Cr(VI): N.D. | Pass | |
| 3 | White large screw | N.D. | N.D. | N.D. | N.D. | | | Pass | |
| 4 | White small screw | N.D. | N.D. | N.D. | BL | <u> </u> | - | Pass | |
| 5 | White soft plastic | N.D. | N.D. | N.D. | BL | N.D. | | Pass | |
| 6 | Cuboid white metal | N.D. | BL | N.D. | N.D. | | | Pass | |
| 7 | Black soft plastic | N.D. | N.D. | N.D. | BL | N.D. | | Pass | |
| 8 | Green Plastic | N.D. | BL | N.D. | N.D. | N.D. | | Pass | |
| 9 | Coarse copper wire | N.D. | N.D. | N.D. | BL | | | Pass | |
| 10 | Blue plastic | N.D. | BL | N.D. | BL | N.D. | | Pass | |
| 11 | Black rubber plastic | N.D. | N.D. | N.D. | BL | N.D. | | Pass | |
| 12 | Capacitor Cases | N.D. | N.D. | N.D. | N.D. | | | Pass | |
| 13 | Black plastic patch | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass | |
| 14 | Dark yellow plastic | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass | |
| 15 | Small iron sheet | N.D. | N.D. | N.D. | BL | | | Pass | |

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| No | No. Sample name | | XRF Results | | | | Chemical confirmation | Conclusion |
|-----|----------------------------|------|-------------|------|------|------|-------------------------|------------|
| NO. | Sample name | Pb | Cd | Hg | Cr | Br | result (mg/kg) | Conclusion |
| 16 | Brown circular plastic | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 17 | Yellow adhesive plastic | N.D. | N.D. | BL | BL | N.D. | - | Pass |
| 18 | Red copper wire | N.D. | N.D. | N.D. | BL | | | Pass |
| 19 | Yellow circular plastic | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 20 | Yellow adhesive tape | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 21 | Black cylindrical metal | N.D. | N.D. | N.D. | N.D. | 0 | - | Pass |
| 22 | Black soft plastic | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 23 | Black hard plastic | N.D | N.D. | N.D. | BL | IN | PBBs:N.D. PBDEs:N.D. | Pass |
| 24 | Yellow plastic capacitor | N.D. | N.D. | N.D. | N.D. | IN | PBBs:N.D. PBDEs:N.D. | Pass |
| 25 | Yellow plastic resistor | N.D. | N.D. | N.D. | BL | N.D. | | Pass |
| 26 | Resistor blue plastic | N.D. | N.D. | N.D. | BL | N.D. | | Pass |
| 27 | PCB board | N.D. | N.D. | N.D. | N.D. | IN | PBBs:N.D. PBDEs:N.D. | Pass |
| 28 | Rectangular iron sheet | N.D. | N.D. | N.D. | N.D. | | | Pass |
| 29 | Small component plastic | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 30 | Soldering tin | N.D. | N.D. | N.D. | N.D. | | | Pass |
| 31 | Large component plastic | N.D. | N.D. | N.D. | N.D. | N.D. | - | Pass |
| 32 | Yellow large paper | N.D. | N.D. | N.D. | BL | N.D. | | Pass |

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| No | No. Sample name | | XRF Results | | | | Chemical confirmation | Conclusion |
|-----|-----------------------------|------|-------------|------|----------------|------------|-------------------------|------------|
| NO. | Sample name | Pb | | | result (mg/kg) | Conclusion | | |
| 33 | White hard shell plastic | N.D. | N.D. | N.D. | BL | IN | PBBs:N.D. PBDEs:N.D. | Pass |
| 34 | Black thick line | N.D. | BL | N.D. | N.D. | N.D. | - | Pass |
| 35 | Silver white copper wire | N.D. | N.D. | N.D. | BL | | | Pass |
| 36 | Pink thick line | N.D. | N.D. | N.D. | BL | N.D. | | Pass |
| 37 | Yellow plastic interface | N.D. | N.D. | N.D. | BL | IN | PBBs:N.D. PBDEs:N.D. | Pass |
| 38 | White plastic patch socket | N.D. | N.D. | N.D. | N.D. | N.D. | - | Pass |
| 39 | White thin line | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 40 | Blue thin line | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 41 | Red thin line | N.D. | N.D. | N.D. | BL | N.D. | | Pass |
| 42 | Black thin line | N.D. | BL | N.D. | N.D. | N.D. | | Pass |
| 43 | Black plastic hard shell | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass |
| 44 | Square iron sheet | N.D. | N.D. | N.D. | IN | | Cr(VI): N.D. | Pass |
| 45 | Yellow hard plastic | N.D. | N.D. | N.D. | BL | IN | PBBs:N.D. PBDEs:N.D. | Pass |
| 46 | Single ear iron plate | BL | N.D. | N.D. | N.D. | | | Pass |
| 47 | Cuboid white plastic | N.D. | N.D. | N.D. | BL | N.D. | | Pass |
| 48 | Small cube black plastic | N.D. | N.D. | BL | N.D. | N.D. | - | Pass |
| 49 | Small cube black metal | N.D. | BL | N.D. | IN | | Cr(VI): N.D. | Pass |

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| No. | Sample name | XRF Results | | | | Chemical confirmation | Conclusion | | |
|-----|-----------------------------------|-------------|------|------|------|-----------------------|-------------------------|------------|--|
| NO. | Sample name | Pb | Cd | Hg | Cr | Br | result (mg/kg) | Conclusion | |
| 50 | Purple plastic | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass | |
| 51 | USB socket iron plate | N.D. | N.D. | N.D. | IN | - (| Cr(VI): N.D. | Pass | |
| 52 | USB socket white plastic | N.D. | N.D. | N.D. | BL | N.D. | | Pass | |
| 53 | Grey white plastic | N.D. | BL | N.D. | BL | N.D. | | Pass | |
| 54 | White flexible ribbon cable | N.D. | N.D. | BL | N.D. | IN | PBBs:N.D. PBDEs:N.D. | Pass | |
| 55 | Blue flexible ribbon cable | N.D. | BL | BL | BL | IN | PBBs:N.D. PBDEs:N.D. | Pass | |
| 56 | Circular rubber gasket | N.D. | N.D. | N.D. | BL | N.D. | | Pass | |
| 57 | Black plastic small fan | N.D. | BL | N.D. | N.D. | IN | PBBs:N.D. PBDEs:N.D. | Pass | |
| 58 | Terminal rubber sleeve | N.D. | N.D. | N.D. | N.D. | N.D. | | Pass | |
| 59 | Terminal iron sheet | N.D. | N.D. | N.D. | BL | | | Pass | |
| 60 | Black plastic safety tube | N.D. | BL | N.D. | BL | N.D. | | Pass | |
| 61 | Black plastic protector | N.D. | N.D. | N.D. | N.D. | N.D. | - | Pass | |
| 62 | Glass sheets | N.D. | N.D. | N.D. | BL | N.D. | | Pass | |
| 63 | Black plastic insulation sheet | N.D. | N.D. | N.D. | BL | BL | | Pass | |
| 64 | Rack iron sheet | N.D. | N.D. | N.D. | BL | | | Pass | |

Note:--

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Chemical Phthalates Test

Test Item(s):Phthalates(DEHP,BBP,DBP,DIBP)

Test method: IEC/EN62321-8

| Test Item(s) | CAS No. | | RL | Conclusion | | |
|----------------------------------|----------|-------|----------------|------------|---------|------------|
| rest item(s) | CAS NO. | 1+5+7 | 8+10+11 | 13+14+16 | (mg/kg) | Conclusion |
| Di-(2-ethylhexyl)Phthalate(DEHP) | 117-81-7 | N.D. | N.D. | N.D. | 30 | PASS |
| Dibutyl Phthalate(DBP) | 84-74-2 | N.D. | N.D. | N.D. | 30 | PASS |
| Benzylbutyl Phthalate(BBP) | 85-68-7 | N.D. | N.D. | N.D. | 30 | PASS |
| Diisobutyl Phthalate(DIBP) | 84-69-5 | N.D. | N.D. | N.D. | 30 | PASS |
| | | | | | | |
| Test Item(s) | CAS No | | Result (mg/kg) | | RL | Conclusion |

| CASNO | (ing) | | | | Conclusion |
|----------|--------------------|--|--|--|---|
| CAS NO. | 17+19+20 | 22+23+24 | 25+26+27 | (mg/kg) | Conclusion |
| 117-81-7 | N.D. | N.D. | N.D. | 30 | PASS |
| 84-74-2 | N.D. | N.D. | N.D. | 30 | PASS |
| 85-68-7 | N.D. | N.D. | N.D. | 30 | PASS |
| 84-69-5 | N.D. | N.D. | N.D. | 30 | PASS |
| | 84-74-2 85-68-7 | CAS No. 17+19+20 117-81-7 N.D. 84-74-2 N.D. 85-68-7 N.D. | 17+19+20 22+23+24 117-81-7 N.D. N.D. 84-74-2 N.D. N.D. 85-68-7 N.D. N.D. | CAS No. 17+19+20 22+23+24 25+26+27 117-81-7 N.D. N.D. N.D. 84-74-2 N.D. N.D. N.D. 85-68-7 N.D. N.D. N.D. | CAS No. 17+19+20 22+23+24 25+26+27 (mg/kg) 117-81-7 N.D. N.D. N.D. 30 84-74-2 N.D. N.D. N.D. 30 85-68-7 N.D. N.D. N.D. 30 |

| Test Item(s) | CAS No. | | Result (mg/kg) | | | | |
|----------------------------------|----------|----------|----------------|----------|---------|------------|--|
| rest item(s) | CAS NO. | 29+31+32 | 33+34+36 | 37+38+39 | (mg/kg) | Conclusion | |
| Di-(2-ethylhexyl)Phthalate(DEHP) | 117-81-7 | N.D. | N.D. | N.D. | 30 | PASS | |
| Dibutyl Phthalate(DBP) | 84-74-2 | N.D. | N.D. | N.D. | 30 | PASS | |
| Benzylbutyl Phthalate(BBP) | 85-68-7 | N.D. | N.D. | N.D. | 30 | PASS | |
| Diisobutyl Phthalate(DIBP) | 84-69-5 | N.D. | N.D. | N.D. | 30 | PASS | |

Explain: others are glass, ceramic and metallic materials without testing phthalates.

Remarks :

1. 1ppm = 1mg/kg = 0.0001%.
2. N.D.= Not Detected(less than report limit).

3. RL = Report Limit.

4. The results shown in this test report refer only to the sample tested.

5.3 points for a group of data ≤300mg/kg is judged to be qualified,>300mg/kg requires independent testing.

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| | CAS No. | | Result (mg/kg) | | RL | Conclusion |
|----------------------------------|----------|-------------|----------------|----------|------------|-------------|
| Test Item(s) | CAS NO. | 40+41+42+63 | 43+45+47 | 48+50+52 | (mg/kg) |)Conclusion |
| Di-(2-ethylhexyl)Phthalate(DEHP) | 117-81-7 | N.D. | N.D. | N.D. | 30 | PASS |
| Dibutyl Phthalate(DBP) | 84-74-2 | N.D. | N.D. | N.D. | 30 | PASS |
| Benzylbutyl Phthalate(BBP) | 85-68-7 | N.D. | N.D. | N.D. | 30 | PASS |
| Diisobutyl Phthalate(DIBP) | 84-69-5 | N.D. | N.D. | N.D. | 30 | PASS |
| Test Item(s) | CAS No. | | | RL | Conclusion | |
| Test item(s) | CAS NO. | 53+54+55 | 56+57+58 | 60+61+62 | (mg/kg) | Conclusion |
| Di-(2-ethylhexyl)Phthalate(DEHP) | 117-81-7 | N.D. | N.D. | N.D. | 30 | PASS |
| Dibutyl Phthalate(DBP) | 84-74-2 | N.D. | N.D. | N.D. | 30 | PASS |
| Benzylbutyl Phthalate(BBP) | 85-68-7 | N.D. | N.D. | N.D. | 30 | PASS |
| Diisobutyl Phthalate(DIBP) | 84-69-5 | N.D. | N.D. | N.D. | 30 | PASS |

Explain: others are glass, ceramic and metallic materials without testing phthalates.

Remarks :

- 1. 1ppm = 1mg/kg = 0.0001%.
- 2. N.D.= Not Detected(less than report limit).
- 3. RL = Report Limit.
- 4. The results shown in this test report refer only to the sample tested.
- 5.3 points for a group of data ≤300mg/kg is judged to be qualified,>300mg/kg requires independent testing.

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Sample Test site



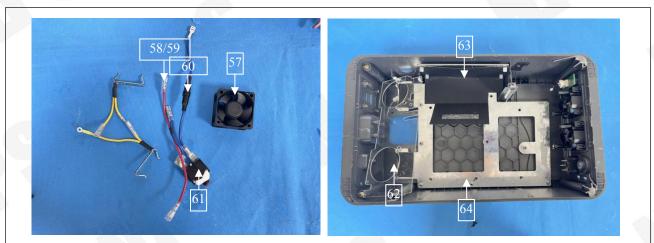
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Sample Test site



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Sample Photo:





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