



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



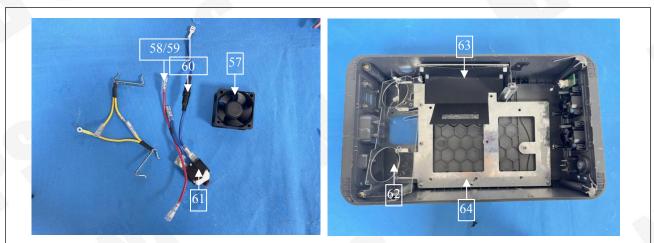
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Sample Test site



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Sample Photo:





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