

Report No.: SZARR190920009-01

Test Report

Client Name : Hefei zhonghe power new energy technology co. LTD

Address No.58 yihu west road, high-tech industrial development

zone, lujiang county, hefei city, anhui province, China

Product Name : Lithium ion battery

Date : Sept. 29, 2019

Shenzhen Anbotek Compliance Laboratory Limited





Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 1 of 13

Applicant : Hefei zhonghe power new energy technology co. LTD

Address : No.58 yihu west road, high-tech industrial development zone, lujiang

county, hefei city, anhui province, China

The submitted sample and sample information was/were submitted and identified by/on the behalf

of the client

Sample Name : Lithium ion battery

Model No. : 18650-2500mAh

Manufacturer : Hefei zhonghe power new energy technology co. LTD

Sample Received Date : Sept. 20, 2019

Testing Period : Sept. 20, 2019 to Sept. 29, 2019

Test Requested : As specified by client, to test the Lead(Pb), Cadmium(Cd),

Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated

Biphenyl(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Diisobutyl

phthalate (DIBP), Dibutyl phthalate(DBP), Benzyl butyl

phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP) in the submitted sample in accordance with the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 with

effective from 22 July 2019.

Test Method: Please refer to the following page(s).

Test Result(s): Please refer to the following page(s).

Edited by Yuqiu Sun

Reviewed by Rose Targ









Date: Sept. 29, 2019 Report No.: SZARR190920009-01 Page 2 of 13

Test Method:

A. XRF Screening Test

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC 62321-3-1:2013 Unit (mg/kg)					
	Polymers	Metals	Composite material			
Cd	BL≤(70-3σ) <x <(130+3σ)≤ol<="" td=""><td>BL≤(70-3σ) <x <(130+3σ)≤ol<="" td=""><td>LOD<x <(150+3σ)≤ol<="" td=""></x></td></x></td></x>	BL≤(70-3σ) <x <(130+3σ)≤ol<="" td=""><td>LOD<x <(150+3σ)≤ol<="" td=""></x></td></x>	LOD <x <(150+3σ)≤ol<="" td=""></x>			
Pb	BL≤(700-3σ) <x <(1300+3σ)≤OL</x 	BL≤(700-3σ) <x <(1300+3σ)≤OL</x 	BL≤(500-3σ) <x <(1500+3σ)≤OL</x 			
Hg	BL≤(700-3σ) <x <(1300+3σ)≤OL</x 	BL≤(700-3σ) <x <(1300+3σ)≤OL</x 	BL≤(500-3σ) <x <(1500+3σ)≤OL</x 			
Br	BL≤(300-3σ)< X	N.A.	BL≤(250-3σ)< X			
Cr	BL≤(700-3σ)< X	BL≤(700-3σ)< X	BL≤(500-3σ)< X			

Note:

- -N.A. = Not Applicable
- -BL = Under the XRF screening limit
- -OL = Further chemical test will be conducted while result is above the screening limit
- -X= The symbol "X" marks the region where further investigation is necessary
- -3σ= The reproducibility of analytical instruments
- -LOD= Detection limit

B. Chemical Test

Test Item(s)	Test Method	Measured Equipment(s)	otek MDL Moot	Limit
Lead (Pb)	IEC 62321-5:2013	Yu. Polek	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017	ek Wholek	2 mg/kg	1000 mg/kg
Lieuwa alema Charansi ya Car() (I)	IEC 62321-7-1:2015	UV-VIS	0.10µg/cm ²	1000 mg/kg
Hexavalent Chromium Cr(VI)	IEC 62321-7-2:2017	00-015	8 mg/kg	
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	Anbotek A	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	5 mg/kg	1000 mg/kg
Phthalates (DIBP, DBP, BBP, DEHP)	IEC 62321-8:2017	potek Anbotek	50 mg/kg	1000 mg/kg

Shenzhen Anbotek Compliance Laboratory Limited



Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 3 of 13

Test Results:

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
botek	Anbore. And	tek Phootek	Anbo BL botek	Anborg Ar	otek .
	Anbotek Ar	tek Cd nbotek	Anbor BL An hotel	Anyoten	Anbotek
	Anbotek	Anbo Hg Hg botek	Anbore BL Ans	Hek Anbotek	Anborer
	-k hotek	Cr(Cr(VI))	K Ant BL And	tek I nbotek	Auporg
1 Anb	Green plastic scarfskin	Br(PBBs&PBDEs)	otek BLotek A	hoot abor	PASS
	Up	DBP	N.A.	N.D.	otek Anb
	Anbotek Anbot	BBP	N.A.	N.D.	rotek !
	Anboten An	DEHP	N.A.	N.D.	Anboatek
	Anborek	DIBP	N.A.	N.D.	Aupo
VUP	lek Pupolek	Anbo. Pb	Anb BL And	work / Anbotek	Aupo.
	botek Anbotek	Anbo Cd	atek ABLOTE A	tek / nbote	k Aupote
	ipo, W.	An Hg	BL,botek	Aupo	otek Anb
	Anbore An	Cr(Cr(VI))	nb tek BL nbotek	Pupo, I	notek p
Amb 2ek	White plastic sheet	Br(PBBs&PBDEs)	Anbe lek BL abotek	Anbgin	PASS
	200,	AND DBP Model	N.A.	N.D.	Anboatek
	ek Anbotek	BBP	N.A.	N.D.	Anbotek Anbotek
	otek subotek	DEHP	N.A.	N.D.	Aupor
	bo, we upole	DIBP	N.A.	N.D.	otek Anbo
otek	Anbor of	otek Pp	otek BL nbotek	Aupo.	wotek A
	Anbotek Anb	Cd	Anb tek BL aborek	Vupo.	Anbotek III
	Anborek	Hg Model	Anbo BL short	A Moore	Ann
	k Anboten	Cr(Cr(VI))	Anbound BL	otek /Anbotes	Anbo
3 ^{Anbot}	Silvery metal	Br(PBBs&PBDEs)	N.A.	Lotek / Anbotek	PASS
	shell	DBP	N.A.	And tek	kek Vupo,
		BBP	N.A.	Aupo.	botek Ar
	Anbotek Anbo	DEHP	MAN.A. Model	Anbore	botek
	Anbore. A	DIBP	N.A. bote	k ANDORES	Aur







Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 4 of 13

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
otek l	inbo. Anbo	rek AnPb An	otek BL nbotek	Aupo.	ootek Anb
nbotek	- CV	Cdoo ^{ter}	Ando tek BL nbotek	Anbold A	hotek p
Anbotek	Anbotek Ar	Hg nbotek	Anbo BL bote	- Muhose	Anbotek
Vii. Potel	\A/hita plaatia	Cr(Cr(VI))	Anbor BL Ar	rek Inbotes	Anbo
4.nbotel	White plastic film	Br(PBBs&PBDEs)	k AnbBL And	work / Anborek	PASS
Anb	nbotek Anbotek	DBP	N.A.	N.D.	ek Anbore
ek b	hotek Anbot	BBP	N.A. botes	N.D.	otek Anb
potek	Anbotek Anbot	DEHP	N.A. mbotek	N.D.	-potek
abotek	Anbore An	DIBP DOTE	N.A.	N.D.	Ann
Anborek	Anbore	And otek Pb Anbotek	Anbot BL	lek Yupoje	Anbotek
Vu.	tek Anbotek	And Cd nbore	Anb BL ATT	hotek / Anbotek	Anbo
Anbo	notek Anbotek	And Hg	Hek ABLON A	work / Aupore	K Anbo.
ik bi	loo tek Lanbott	Cr(Cr(VI))	hotek BLhboten	And tell and	otek Pup,
5	Copper-colored foil paper	Br(PBBs&PBDEs)	N.A. Modell	Anbo Lok	PASS
anbotek ak	ioli papei	DBP	N.A. Nootek	Anbo	Anbotek
Anbotek	Anbore	BBP Mbores	N.A.	ek Wpose	Ann
Anbo	ek Anboten	DEHP	N.A.	potek / Anbote	Anba
P.L.	otek Anbotek	DIBP	N.A.	hotek / Anbote	Anbo
br.	Anbotek Anbote	Pb	botek Bloote	Ann stell and	otek Anbe
ntek.	VUm	Cd	hotek BL Anboter	And	abotek A
nbotek	Anbotek Anb	obotek Hg/bote	Annuatek BL anbotek	Anbo	spotek
Anborek	Auport 1	Cr(Cr(VI))	Ant BL nobot	ek Moore	VII.
6 Anbot	Positive electrolyte	Br(PBBs&PBDEs)	Anba BLok	otek /Anbore	PASS
	electrolyte	DBP	N.A.	botek N.D. Anbote	Anba
, Vu	hotek Anbotel	BBP	N.A.	N.D.	lek Vupo,
yer.	Anbo Anbo	DEHP	notek N.A.nborek	N.D.	botek An
obotek	Aupo, W.	DIBP	And tek N.A.	N.D.	hotek



Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 5 of 13

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
otek l	inbo. Anbo	rek AnPb An	otek BL nbotek	Aupo.	ootek Anb
nbotek	V (1)	Cdoo ^{ter}	Anbotek BL nbotek	Anboy A	notek p
Anbotek	Anbotek Ar	ntek Hg nbotek	Anbo. BL hote	AU YOYE	Anborek
Vi. Potel	LAnboten	Cr(Cr(VI))	Anbor BL Ar	rek Anboten	Anbo
7 ^{nbotel}	Negative electrolyte	Br(PBBs&PBDEs)	k AnbBL And	notek / anbotek	PASS
Anb	electionyte	DBP	N.A.	N.D.	ek Anbore
lek b	upo, rak upo,	BBP	N.A. botel	N.D.	otek Anb
potek	Anbotek Anbot	DEHP	N.A. nbotek	N.D.	hotek 1
abotek	Anbore. An	DIBP	N.A.	N.D.	Ann
Anborek	Anbores	And tek Pb Anbotek	Anbou BL	iek Tupoter	Vunn Jek
Vur.	tek Anbotek	Cd	Anb BL And	hotek / Anbotek	Anbotek
Anbo	otek unbotek	Hg	stek ABLOSE A	niek / ambore	k Aupo,
P. D.	ipo tek vipoti	Cr(Cr(VI))	hotek BLhboten	And tell	otek Anb
8	Silvery foil paper	Br(PBBs&PBDEs)	ntek N.A. Mbotek	Aupo lok	PASS
Aupotek ok	Anbore An	DBP	N.A.	Aupor	Anbotek
Anborek	Anborer	BBP Model	N.A.	ok Woose	Annatek
VII.	ek Anboten	DEHP	N.A.	otek / Anbore	Anbo
Anbo	otek Anbotek	DIBP	N.A.	hotek / Anbote	Anbo
V.	Anbotek Anbote	Pb	hotek Blobores	Amb stell amb	otek Vupo
otek	V 11 12	Cd	Lotek BL Anbotet	And lek	abotek A
nbotek	Anbotek Anb	Hg botte	Arra otek BL onbotek	Wipp.	bołek
Anborek	Anbore A	Cr(Cr(VI))	Anb BL abor	W Moor	Vir
9 Anbor	Yellow adhesive	Br(PBBs&PBDEs)	Anba BL _{ak}	otek /Anbores	PASS
	tape	DBP	N.A.	N.D.	Anbe
Y AU	hotek Anbotel	BBP	N.A.	N.D.	lek Wupo,
rer.	Anborek Anbr	DEHP	N.A. noores	N.D.	botek An
obotek	Aupo. Al.	DIBP DIBP	N.A. Model	N.D.	botek



Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 6 of 13

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
itek I		rek ArPb An	otek BLanbotek	Aupo.	ootek Anb
hotek		Cdoo ^{ter}	Anbotek BL nbotek	Anbor A	hotek
Anbotek		Hg nbotek	Anbo. BL abote	- Muhose	Anbotek
Anh		Cr(Cr(VI))	Anbor BL Ar	rek Anbotes	Anbo
10	White paper ring	Br(PBBs&PBDEs)	k AnbBL And	notek / anbotek	PASS
PULC		DBP	N.A.	N.D.	Sk Aupore
ek P		BBP	N.A. botel	N.D.	otek Anb
potek		DEHP	N.A. nbotek	N.D.	hotek
abotek		DIBP	N.A.	N.D.	And
Anbotek	Anbore	And tek Pb Anbotek	Anbou BL	ek Tupoter	Vuga Cick
AUT.		Cd	Anb BL And	hotek / Anbotek	Anbotek
Anbo		Hg	stek ABLOSE A	niek / ambore	k Aupo,
ik bi	lpo wek whole	Cr(Cr(VI))	hotek BLhboten	And tell	otek Anb
*11	Black plastic	Br(PBBs&PBDEs)	otek BL nobotek	Aupo lok	PASS
inbotek	sheet	DBP	N.A.	N.D.	Anbotek
Aupotek		BBP Model	N.A.	N.D.	Anna
VII.		DEHP	N.A.	otek N.D. above	Anbo
Anbo'		DIBP	N.A.	where N.D. Andore	Anbo.
P.L.	Anbotek Anbote	Pb	hotek Bloboten	Ann otek and	otek Aupe
stek.		Cd	Lotek BL Anbotet	And lek	abotek A
nbotek		Hg botte	Arra otek BL onbotek	Aupo,	bojek
Anbotek	Anbore A	Cr(Cr(VI))	Anb BL abor	W Moor	Vilek
12	White rubber	Br(PBBs&PBDEs)	Anba BL _{ak}	otek /Anbores	PASS
	seal ring	DBP	N.A.	N.D.	Anbe
, Vu,		BBP	N.A.	N.D.	lek Vupo,
ter		DEHP	N.A. noores	N.D.	botek Ar
botek		DIBP DIBP	N.A. Model	N.D.	botek



Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 7 of 13

Note:

- The screening results are only used for reference.
- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.
- -BL = Under the XRF screening limit
- -OL = Further chemical test will be conducted while result is above the screening limit
- -X= The symbol "X" marks the region where further investigation is necessary
- -LOD= Detection limit
- -MDL = Method Detection Limit
- -N.A. = Not Applicable
- -N.D. = Not Detected (<MDL)
- -/=Not tested
- -mg/kg = ppm = parts per million
- μg/cm² = microgramme per square centimetre
- -Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than $0.10ug/cm^2$.
- -Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.13ug/cm².

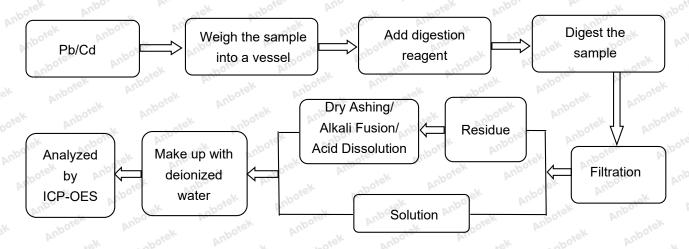




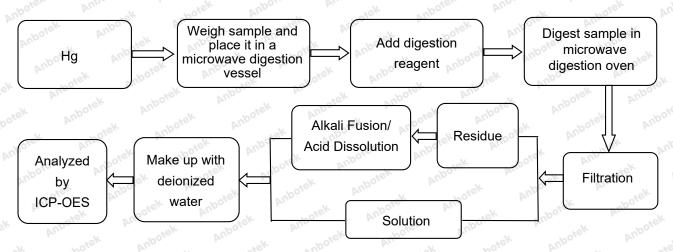
Date: Sept. 29, 2019 Report No.: SZARR190920009-01 Page 8 of 13

Test Process:

IEC 62321-5:2013



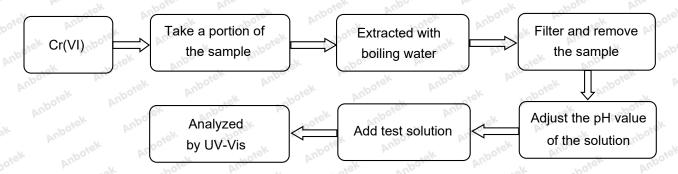
IEC 62321-4:2013+AMD1:2017



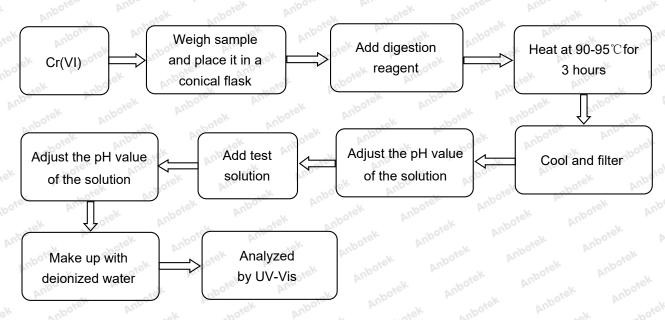


Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 9 of 13

♦ IEC 62321-7-1:2015



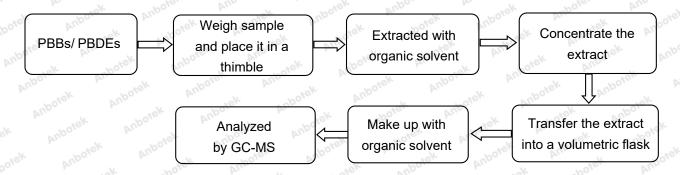
♦ IEC 62321-7-2:2017



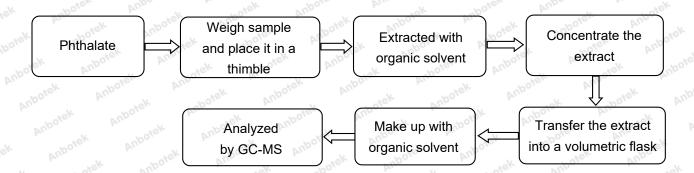


Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 10 of 13

♦ IEC 62321-6:2015



◆ IEC 62321-8:2017





Report No.: SZARR190920009-01 Date: Sept. 29, 2019

Page 11 of 13

Photograph of Sample



Photo(s) of the tested component(s)

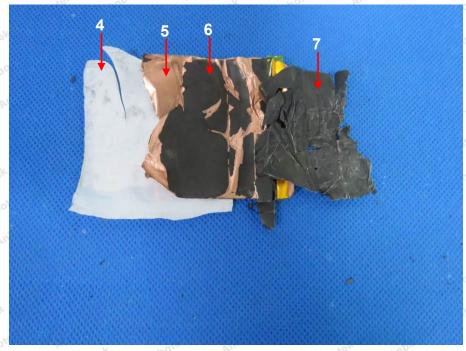


Shenzhen Anbotek Compliance Laboratory Limited

Hotline 400-003-0500



Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 12 of 13







Report No.: SZARR190920009-01 Date: Sept. 29, 2019 Page 13 of 13



***** End of Report *****

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of Anbotek, this report can't be reproduced except in full.