

Test Report

Report No.: RBT2609006801E

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Applicant: Qingdao Chenyang Electrical Technology Co.,Ltd.

Address: No.5 Yunshui 2ndRoad,Jimo,Qingdao , China

The following test sample information is provided and confirmed by the applicant:

Sample name: LFP energy-storage battery pack

Sample model: **Please refer to the next page for detailed information**

Manufacturer name: Qingdao Chenyang Electrical Technology Co.,Ltd.

Manufacturer address: No.5 Yunshui 2ndRoad,Jimo,Qingdao , China

Date of sample(s) received: Sep. 03, 2026

Date of test period: Sep. 03, 2026 - Sep. 09, 2026

Date of report: Sep. 14, 2026

TEST REQUESTED

1.As specified by client, to determine the EU RoHS Directive 2011/65/EU Annex II and amending Directive (EU) 2015/863 substance content in the submitted sample.

CONCLUSION

PASS

Compile: Xiaozi Yan

Review: Jiang Jiajie

Issue: Wang Wentu



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Sample model: BD-16SIP-51.2V-314AH-1,BDW40-800/24-100-1,BDW1-1000/50-100-1,BDW40-1000/50-100-1,
BDW80-1000/50-200-1,BDW160-1000/50-400-1,BDW240-1000/50-600-1,
BDW320-1000/50-800-1,BDW400-1000/50-1000-1,
BDW800-1000/50-2000-1,BSP40-800/24-100-1,
BSP80-1000/24-300-1,BSP150-1000/24-500-1,BSP300-1000/24-800-1,
BSP450-1000/24-1000-1,BSP600-1000/24-1200-1,BSP800-1000/24-1600-1,
BDM20-1000/50-50-1,BDM40-1000/50-100-1,BDM80-1000/50-200-1,
BDM160-1000/50-400-1,BDM320-1000/50-800-1,BDM400-1000/50-1000-1,
BDM500-1000/50-1000-1,BDM600-1000/50-1200-1,
BDM800-1000/50-1400-1,BD60-1000/24-200-1,BD80-1000/24-300-1,
BD100-1000/24-400-1,BD120-1000/24-400-1,BD150-1000/24-500-1,
BD200-1000/24-800-1,BD40-800/24-100-1,BD240-1000/24-400-1,
BD300-1000/24-1000-1,BD400-1000/24-900-1,BD400-1000/24-1000-1,
BD500-1000/24-1000-1,BD600-1000/24-1200-1,BD-S40-800/24-800-1,
BD-S60-1000/24-200-1,BD-S80-1000/24-1200-1,BD-S80-1000/24-800-1,
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BD-S500-1000/24-1000-1,BD-S800-1000/24-1200-1,BDEL20-1000/50-50-1,
BDEL40-1000/50-100-1,BDEL80-1000/50-200-1,BDEL160-1000/50-400-1,
BDEL320-1000/50-800-1,BDEL400-1000/50-1000-1,
BDEL500-1000/50-1000-1,BDEL600-1000/50-1200-1,
BD-40S1P-128V-168AH-1,BD-40S1P-128V-150AH-1,BD-40S1P-128V-314AH-1,
BD-16S1P-51.2V-168AH-1,BD-16S1P-51.2V-314AH-1,
BD-16S2P-51.2V-628AH-1,BD-52S1P-166V-314AH-1,BD-52S2P-166V-628AH-1



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Test Result(s):

1. EU RoHS Directive 2011/65/EU Annex II and amending Directive (EU) 2015/863 substance content

1.1 SCREENING BY X-RAY FLUORESCENCE SPECTROSCOPY AND CONFIRMED BY WET CHEMICAL METHOD OF LEAD, CADMIUM, MERCURY, CHROMIUM AND BROMINATED FLAME RETARDANTS (PBB & PBDE)

TESTED MATERIAL	SCHEME	TARGET RoHS SUBSTANCES	TEST METHOD USED	XRF RESULT (in mg/kg)	CHEMICAL TEST RESULT (in mg/kg)
001	001	All	XRF	Cd: N.D.	N/T
				Cr: N.D.	
				Pb: N.D.	
				Hg: N.D.	
				Br: N.D.	
002	002	All	XRF	Cd: N.D.	N/T
				Cr: N.D.	
				Pb: N.D.	
				Hg: N.D.	
				Br: N.A	
003	003	All	XRF	Cd: N.D.	N/T
				Cr: N.D.	
				Pb: N.D.	
				Hg: N.D.	
				Br: N.D.	

Remark(s):

- RL = Report Limits
- N.D. = Not Detected (<RL)
- mg/kg = parts per million = ppm
- N/T = Not tested(No Chemical tests)
- N.A = Not applicable
- The customer selects the testing site, and the chemical testing conclusion only applies to the selected part.



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1.2 Total Phthalates Content

Test Method: IEC 62321-8: 2017

Analyte	CAS No.	Requirement (Max.), %	Reporting Limit, %	Sample, %
				001+003
Diisobutyl Phthalate, DIBP	84-69-5	0.1	0.005	<0.005
Dibutyl Phthalate, DBP	84-74-2	0.1	0.005	<0.005
Benzyl Butyl Phthalate, BBP	85-68-7	0.1	0.005	<0.005
Diethylhexyl Phthalate, DEHP	117-81-7	0.1	0.005	<0.005
Rating				PASS

Remark(s):

-All concentrations are expressed as percentages

-<"means less than

-All plasticizers are measured by gas chromatography-mass spectrometry

-The customer selects the testing location, and the chemical testing conclusion is only applicable to the selected component.

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TEST METHODS:

- (1) Sample prepared with reference to IEC 62321-2 Ed1.0:2021 Determination of certain substances in electrotechnical products – Part 2: Disassembly, disjunction and mechanical sample preparation;
- (2) Sample Screening testing with reference to IEC 62321-3-1 Ed1.0:2013 Determination of certain substances in electrotechnical products – Part 3-1: Screening – Lead, mercury, Cadmium, total chromium and total bromine using X-ray fluorescence spectrometry;
 - (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr⁶⁺.
 - (b) Results are obtained by XRF for primary screening, and further chemical testing by ICP-OES(for Cd, Pb, Hg), UV-Vis(for Cr⁶⁺) and GC/MS(for PBBs, PBDEs) is recommended to be performed.

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1 Ed1.0:2013

ELEMENT	POLYMER	METALS	COMPOSITE MATERIAL
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	--	$BL \leq (250-3\sigma) < X$

Remark(s):

BL = Below Limit, OL = Over Limit, LOD = Limit of Detection, -- = Not Regulated

The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.



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TEST METHODS:

(3) Wet Chemical Test Method

TESTING ITEM	CHEMICAL TESTING METHOD	RL	LIMIT
Cd	With reference to IEC 62321-5 Ed1.0:2013, by acid digestion and determined by ICP-OES	5.0mg/kg	100mg/kg
Pb	With reference to IEC 62321-5 Ed1.0:2013, by acid digestion and determined by ICP-OES	5.0mg/kg	1000mg/kg
Hg	With reference to IEC 62321-4 Ed1.1:2017, by acid digestion and determined by ICP-OES	5.0mg/kg	1000mg/kg
Cr ⁶⁺ (for non-metal)	With reference to IEC 62321-7-2 Ed1.0:2017, by the colorimetric method	5.0mg/kg	1000mg/kg
Cr ⁶⁺ (for metal)	With reference to IEC 62321-7-1 Ed1.0:2015 by the water-boiling method	/	/
PBBs Content	With reference to IEC 62321-6 Ed1.0:2015, by solvent extraction and determined by GC-MSD	5.0mg/kg	1000mg/kg
PBDEs Content	With reference to IEC 62321-6 Ed1.0:2015, by solvent extraction and determined by GC-MSD	5.0mg/kg	1000mg/kg
DEHP,BBP,DBP, DIBP	With reference to IEC 62321-8 Ed1.0:2017 clause 8.2.1.4 by gas chromatography-mass spectrometry	50mg/kg	1000mg/kg

Remark(s): According to IEC 62321-7-1 Ed1.0:2015, result on Cr⁶⁺ for metal sample is shown as Positive/Negative.



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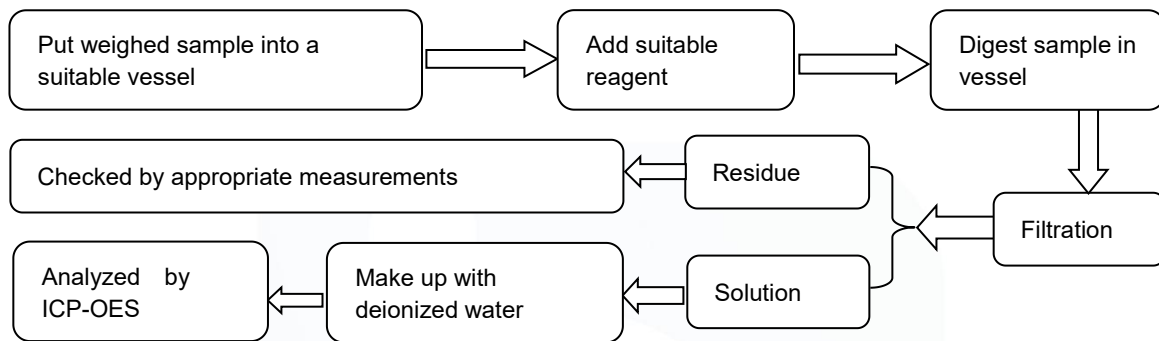
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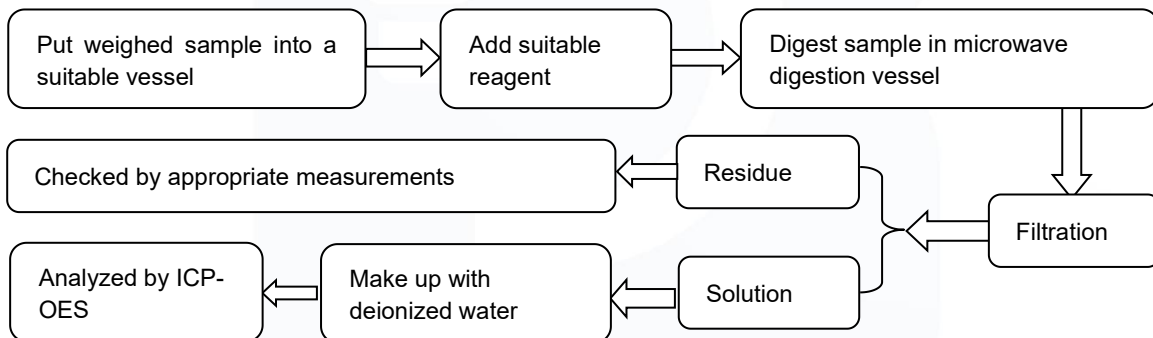
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TEST PROCESS:

1. Test for Lead (Pb), Cadmium (Cd) contents(IEC 62321-5 Ed1.0:2013):



2. Test for Mercury (Hg) contents (IEC 62321-4 Ed1.1:2017):



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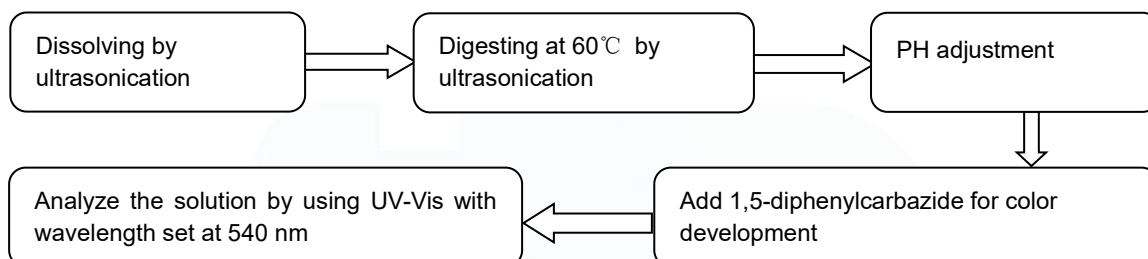
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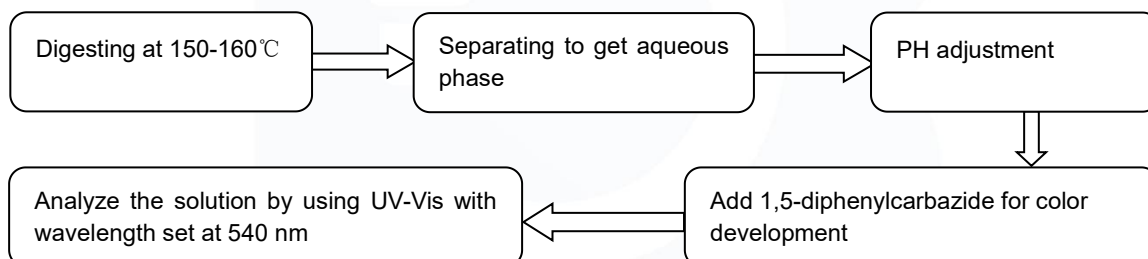
TEST PROCESS:

3. Test for Nonmetallic Materials Chromium(Cr(VI)) contents (IEC 62321-7-2 Ed1.0:2017):

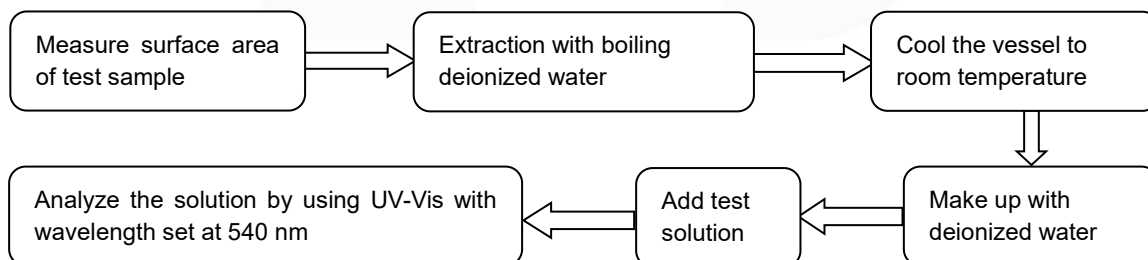
3.1 ABS/PC/PVC



3.2 others



4. Test for metal Chromium(Cr(VI)) contents (IEC 62321-7-1 Ed1.0:2015):



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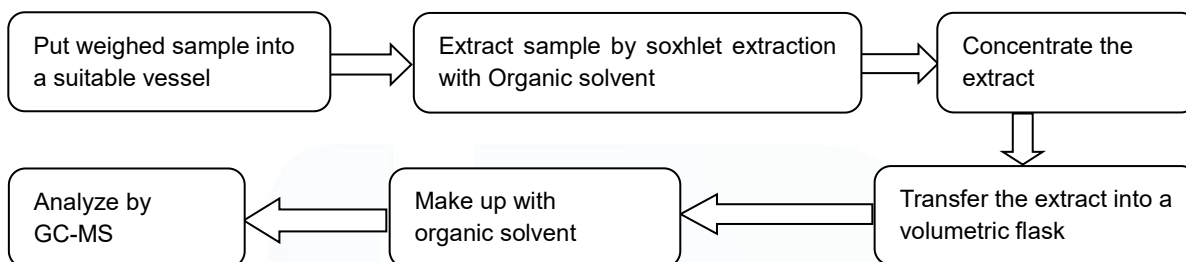
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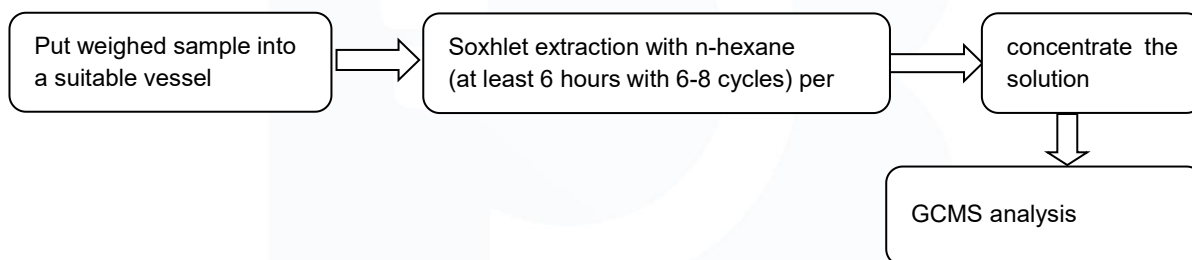
TEST PROCESS:

5. Test for PBBs & PBDEs contents (IEC 62321-6 Ed1.0:2015):

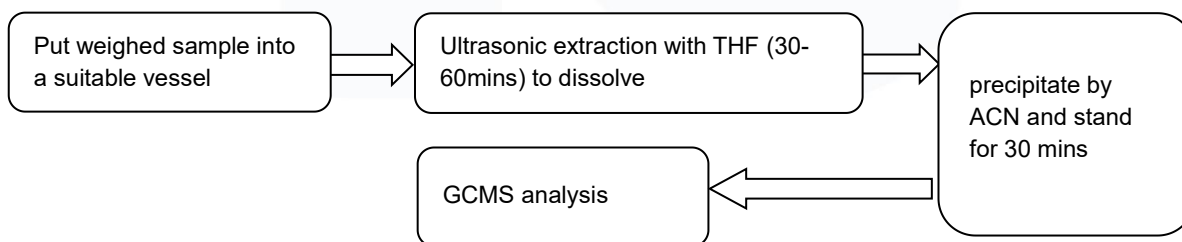


6. Test for Phthalate content (DEHP,BBP,DBP,DIBP) (IEC 62321-8 Ed1.0:2017):

6.1 Test for general polymer



6.2 Test for THF soluble polymer



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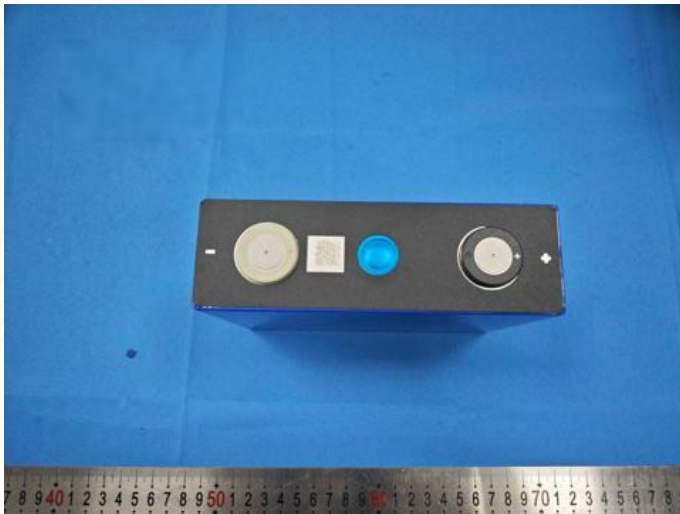
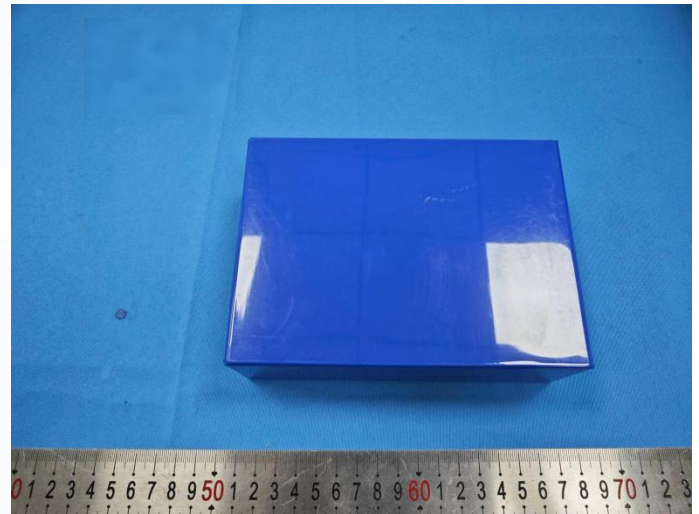
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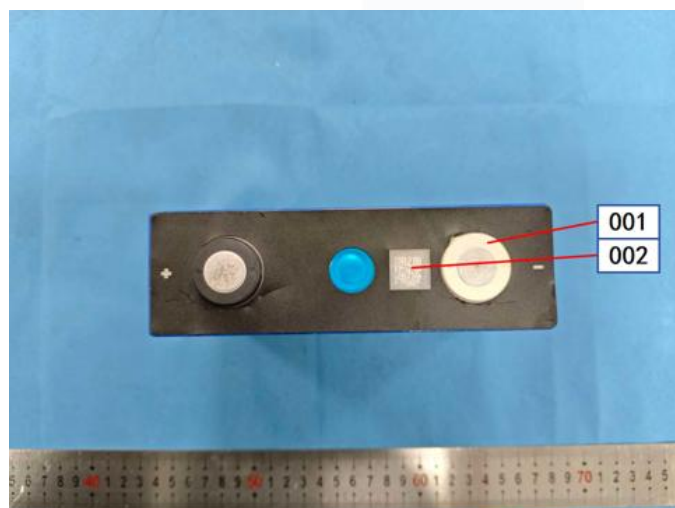
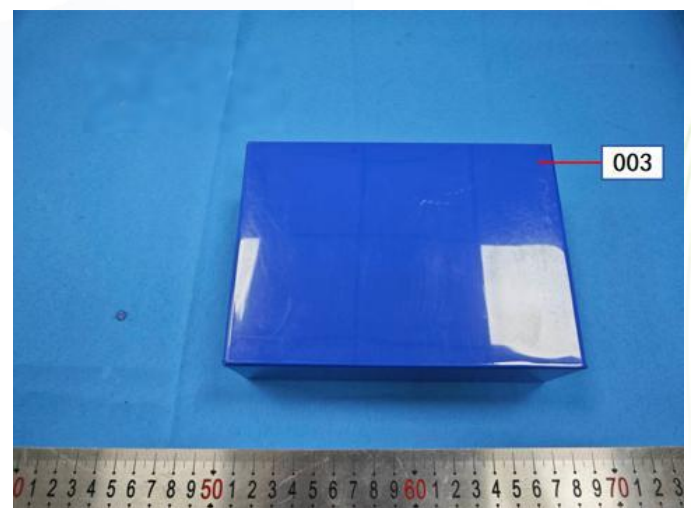
Sample description:

- (001) White plastic block
- (002) Silver metal shell
- (003) Blue plastic film

Photo(s) of test sample(s):



(Whole product)



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



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2. The content of this report shall not be modified, supplemented or deleted without authorization, otherwise it shall be deemed invalid.
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