



TEST REPORT

Report No. : WTH21X09100050C Page 1 of 7

Applicant.....: Xiaogan Yisheng New Material Co., Ltd.

Xinhua Road, Xiaonan Economic Development Zone, Xiaogan City, Hubei Applicant Address....:

Province Esun New Materials Co., Ltd.

Manufacturer.....: Xiaogan Yisheng New Material Co., Ltd.

Xinhua Road, Xiaonan Economic Development Zone, Xiaogan City, Hubei Manufacturer Address....:

Province Esun New Materials Co., Ltd.

Date of Receipt Sample.. : Sep.22, 2021

Sep.22, 2021 to Sep.26, 2021 Testing Period.....:

Date of Issue.....: Sep.26, 2021

Test Requested.....: In accordance with the RoHS Directive 2011/65/EU and its amendment (EU)

No. 2015/863, to determine the 10 restricted substances content in the

submitted sample.

Test Conclusion.....: Pass (Based on the performed tests on the submitted samples, the results

comply with the requirement of EU RoHS Directive 2011/65/EU and its

amendment (EU) No. 2015/863).

******FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) ******

Signed for and on behalf of

Waltek Testing Goup (Shenzhen) Co., Ltd.
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Tested by:

Reviewed by:

Lee Li

Tin Wang

Hugo Chen

Declaration: The results shown in this test report refer only to the sample(s) tested; this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be considered invalidated without specific seal for test institute and the signatures of compiler and approver.



Report No.: WTH21X09100050C Page 2 of 7

Sample Name....: PLA+ filament

Model No.: N/A

Reference Model No. : N/A

Brand....: N/A

Test Method:

- IEC 62321-4:2013/AMD1:2017 for mercury (Hg), analyzed by ICP-OES
- IEC 62321-5:2013 for lead (Pb) and cadmium (Cd), analyzed by ICP-OES
- IEC 62321-7-2:2017 and/or IEC 62321-7-1:2015 for hexavalent chromium (Cr6+), analyzed by UV-VIS
- IEC 62321-6:2015 for PBBs and PBDEs, analyzed by GC-MS
- IEC 62321-8:2017 for phthalates, analyzed by GC-MS



Report No.: WTH21X09100050C Page 3 of 7

RoHS hazardous substances test

Test Item(s)		Result (mg/kg) Black plastic (PLA+)	Limit (mg/kg)
2	Cadmium (Cd)	ND IN	100
3	Mercury (Hg)	TEX LITER WALL NO WALL WALL WALL	1000
4	Hexavalent Chromium (Cr ⁶⁺)	THE THE NUMBER WATER WATER	1000
1E	Mono-PBB	MD L	LET SEX-
	Di-PBB	LEF STE ND MELL MILL	ne m - m
5.1	Tri-PBB	MD ND	TEX TEX TE
	Tetra-PBB	EX LITER NO WILL WALL WE	111 111
	Penta-PBB	ND ND	et set wat
	Hexa-PBB	EX TEX NITIND NET WALL WALL	m, m, -
	Hepta-PBB	ND ND	TEX TEXT
	Octa-PBB	A THE NOTE THE WALL	Mus My - My
	Nona-PBB	ND	LET LET - J
	Deca-PBB	ND ND	ing Air Air
	Sum of PBBs	ND ND	1000
- 4	Mono-PBDE	ND W	nu nu
	Di- PBDE	ND	t 18t 18th
	Tri- PBDE	t tet ite ND life mile wall	mr. m n
	Tetra- PBDE	ND ND	At Alt-
	Penta- PBDE	THE THE NO. OF MITTER MALE	mer mer -m
6	Hexa- PBDE	ND ND	A At -10
	Hepta- PBDE	LET THE ND WITE WITE W	The Mark August
	Octa- PBDE	M ND	et et zet
	Nona- PBDE	X TEX LIND WITE WITE WITE	mr mr.
	Deca- PBDE	ND ND	- A A
	Sum of PBDEs	A THE LIFE ND THE MITTER MALTE	1000
7	Bis (2-ethylhexyl) phthalate (DEHP)	ND ND	1000
8	Benzyl butyl phthalate (BBP)	White Many AND Many And	1000
9	Dibutyl phthalate (DBP)	THE WILL MUND THE MENT OF	1000
10	Diisobutyl phthalate(DIBP)	ND	1000
211	Conclusion	PASS	"ny " "



Report No.: WTH21X09100050C Page 4 of 7

Remark:

- 1. mg/kg = milligram per kilogram = ppm.
- 2. ND = not detected or lower than method detection limit.
- 3. "--" =Not regulated.
- 4. Method Detection Limit (MDL) :10mg/kg for Pb, Cd, Hg and Cr⁶⁺; 10mg/kg for PBB and PBDE; 50mg/kg for each of phthalate.
- 5. Negative = The Cr⁶⁺ concentration is below the limit of quantification. The coating is considered a non- Cr⁶⁺ based coating.
- 6. Positive = The Cr⁶⁺ concentration is above the limit of quantification and the statistical margin of error, The sample coating is considered to contain Cr⁶⁺.
- 7. Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺results represent status of the sample at the time of testing.
- 8. Requirement as per RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863

Test Item(s)	Limit (mg/kg)
Lead (Pb)	1000
Cadmium (Cd)	100
Mercury (Hg)	1000
Hexavalent chromium (Cr(VI))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenyl ethers (PBDEs)	1000
Bis (2-ethylhexyl)- phthalate (DEHP)	1000
Dibutyl phthalate (DBP)	1000
Benzylbutyl phthalate (BBP)	1000
Diisobutyl phthalate (DIBP)	1000



Report No.: WTH21X09100050C Page 5 of 7

Testing Flow chart: 1. Test for Cd/ Pb/ Hg contents Weight sample was put into a Digest the sample in Add digestion reagent microwave digestion vessel microwave digestion oven Analyzed by inductively coupled plasma atomic Transfer the digested solution Made up with deionized emission spectrometer or into a volumetric flask after the water atomic absorption sample is totally dissolved spectrometer 2. Test for Cr6+ content Non-metal: Separation and transfer the Weighted sample was put into Add digestion solution extracted solution into a flask, a digestion vessel and solvent, heat in suitable heating device adjust the PH to 7.5 ± 0.5 Adjust the PH to Determined by UV-visible Add Diphenylcarbazide 2.0 ± 0.5 and made up pectrophotometer solution with deionized water Metal: Get 50cm² samples Sample Preparation Boiling water extraction Make up with deionized water Analyzed by and add dipheny-carbazide Data **UV-VIS** solution 3. Test for PBBs/ PBDEs/ DIBP/ DEHP/ DBP/ BBP contents Weighted sample was put into Extracted by solvent in Concentrate the extract a thimble Soxhlet extractor





Sample Photo:



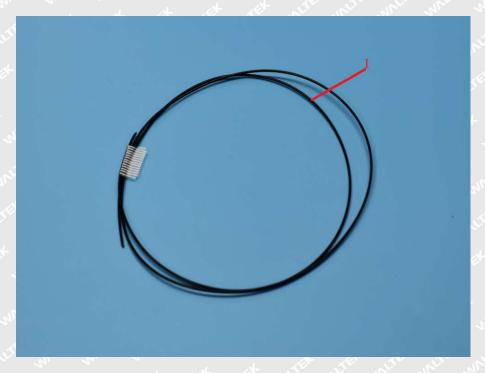
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Report No.: WTH21X09100050C

Photograph of parts tested:



===== End of Report =====