



Test Report

Report No : TST202110Q3020-3RR Date: Oct.12, 2021

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**Applicant/
Manufacturer:** Dongguan Tongyuan Industrial Co., Ltd

Address: Building 22, carnier science and Technology Park, 99 Hongye North Road, Tangxia Town,
Dongguan City

The following sample(s) was /were submitted and identified on behalf of the clients as :

Sample Name : Aluninum Electrolytic Capacitor

Sample Received Date : Oct.09, 2021

Testing Period : Oct.09, 2021 To Oct.12, 2021

Test Requested : Selected test (s) in the selected parts as requested by client with the RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102amending Annex II to Directive 2011/65/EU on the restriction of hazardous substances.

Test Method : Please refer to next page(s).

Test Result : Please refer to next page(s).

Test Conclusion : The test results comply with the limits of RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of



Andy Zheng
Technical Director

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RoHS 2.0 Test Result(Decapacitor):

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium(Cd)	mg/kg	IEC 62321-5: 2013, ICP-AES	N.D.	2	100
Lead(Pb)	mg/kg	IEC 62321-5: 2013, ICP-AES	N.D.	2	1000
Hexavalent Chromium(CrVI)	mg/kg	IEC 62321-7: 2015, UV-Vis	N.D.	2	1000
Mercury(Hg)	mg/kg	IEC 62321-4:2013/AMD1:2017, ICP-AES	N.D.	2	1000
Sum of PBBs	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	--	1000
Monobromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Dibromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tribromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tetrabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Pentabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Hexabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Heptabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Octabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Nonabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Decabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Sum of PBDEs	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	--	1000
Monobromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Dibromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tribromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tetrabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Pentabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Hexabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Heptabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Octabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Nonabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Decabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--

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Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Dibutyl Phthalate(DBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Benzylbutyl Phthalate (BBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Diisobutyl phthalate (DIBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000

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Test Result(Black Plastic):

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium(Cd)	mg/kg	IEC 62321-5: 2013, ICP-AES	N.D.	2	100
Lead(Pb)	mg/kg	IEC 62321-5: 2013, ICP-AES	N.D.	2	1000
Hexavalent Chromium(CrVI)	mg/kg	IEC 62321-7: 2015, UV-Vis	N.D.	2	1000
Mercury(Hg)	mg/kg	IEC 62321-4:2013/AMD1:2017, ICP-AES	N.D.	2	1000
Sum of PBBs	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	--	1000
Monobromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Dibromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tribromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tetrabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Pentabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Hexabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Heptabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Octabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Nonabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Decabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Sum of PBDEs	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	--	1000
Monobromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Dibromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tribromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tetrabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Pentabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Hexabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Heptabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Octabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Nonabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Decabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--

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Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Dibutyl Phthalate(DBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Benzylbutyl Phthalate (BBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Diisobutyl phthalate (DIBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000

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Test Result(Transparent plastic):

Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Cadmium(Cd)	mg/kg	IEC 62321-5: 2013, ICP-AES	N.D.	2	100
Lead(Pb)	mg/kg	IEC 62321-5: 2013, ICP-AES	N.D.	2	1000
Hexavalent Chromium(CrVI)	mg/kg	IEC 62321-7: 2015, UV-Vis	N.D.	2	1000
Mercury(Hg)	mg/kg	IEC 62321-4:2013/AMD1:2017, ICP-AES	N.D.	2	1000
Sum of PBBs	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	--	1000
Monobromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Dibromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tribromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tetrabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Pentabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Hexabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Heptabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Octabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Nonabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Decabromobiphenyl	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Sum of PBDEs	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	--	1000
Monobromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Dibromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tribromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Tetrabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Pentabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Hexabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Heptabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Octabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Nonabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--
Decabromodiphenyl ether	mg/kg	IEC62321-6: 2015, GC-MS	N.D.	5	--

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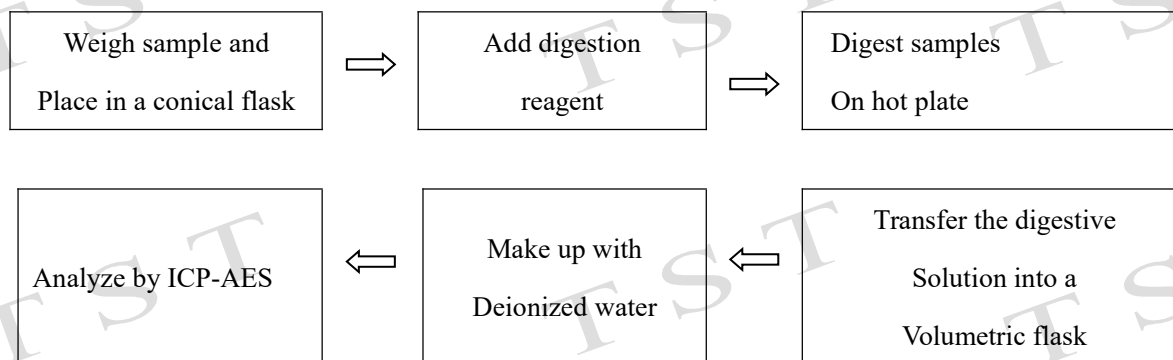
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Test Item(s)	Unit	Test Method (Reference)	Result	MDL	Limit
Dibutyl Phthalate(DBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Benzylbutyl Phthalate (BBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000
Diisobutyl phthalate (DIBP)	mg/kg	IEC62321-8: 2017, GC-MS	N.D.	30	1000

- Note:**
1. mg/kg= ppm
 2. N.D.= No Detection(<MDL)
 3. MDL = Method Detection Limit
 4. -- = No Testing

Test Process:

1.Test for Cd/Pb Content



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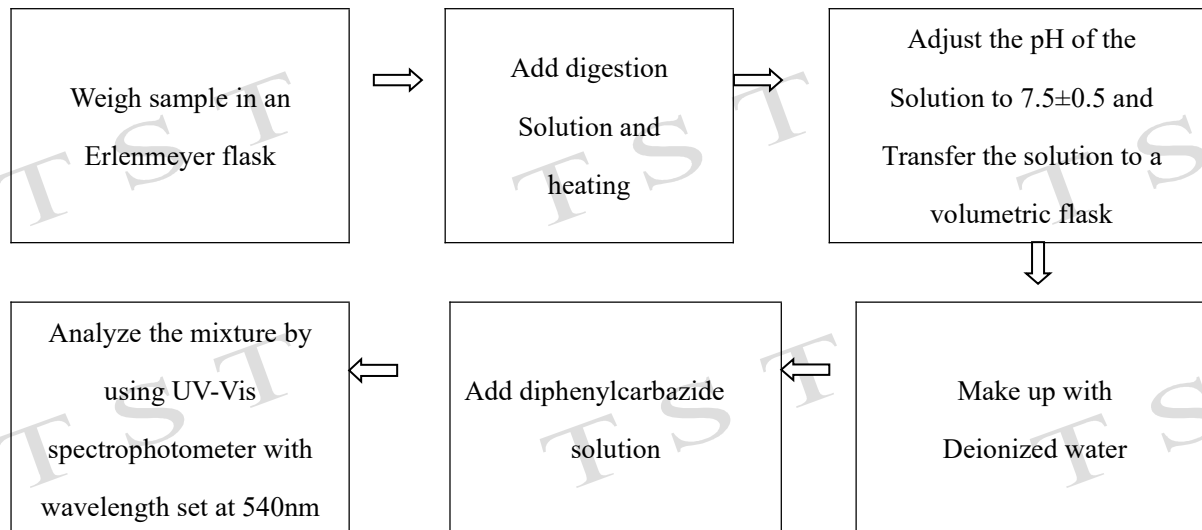
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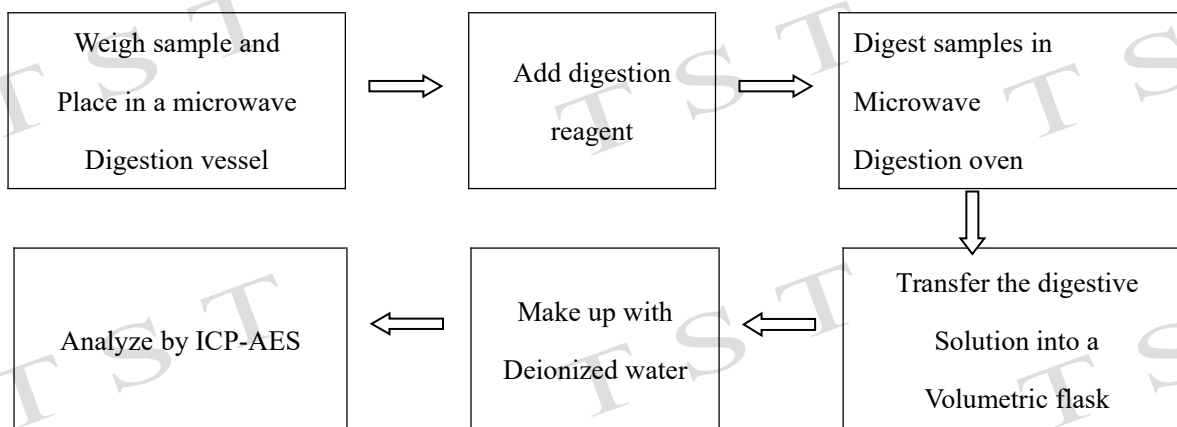
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2.Test for Chromium(VI)Content



3.Test for Hg Contents



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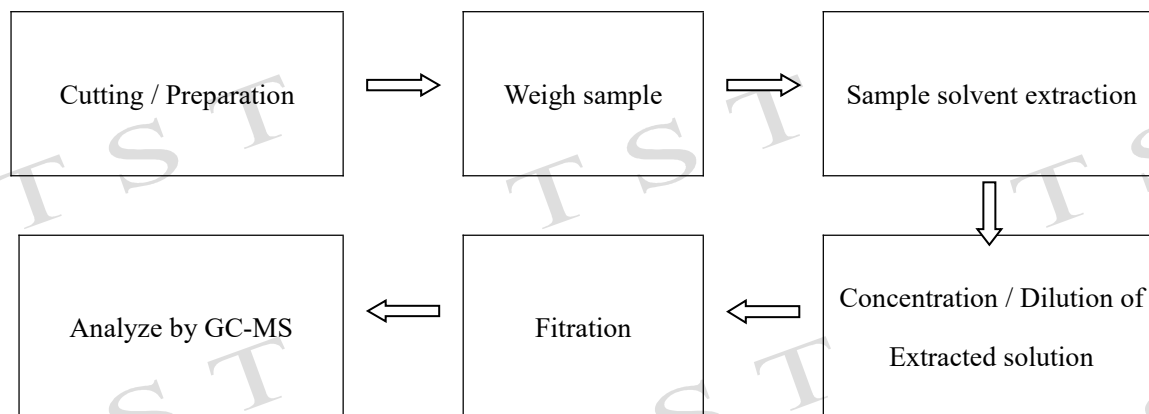
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4.Test for PBBs/PBDES/DIBP/DBP/BBP/DEHP



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