

Test Report No. CANEC2300109006 Date: 15 Feb 2023 Page 1 of 15

Client Name: YAGEO CORPORATION/BESTBRIGHT ELECTRONICS CO.,LTD

Client Address: 3F.,233-1,BAOQIAO RD.,XINDIAN DIST.,NEW TAIPEI CITY 23145,TAIWAN,CHINA

BUILDING 3.NO.24 EAST INDUSTRIAL ROAD.SONGSHAN LAKE PARK.DONGGUAN

CITY, GUANGDONG PROVINCE, P.R.C

Sample Name : SJD

The above sample(s) and information were provided by the client.

SGS Job No.: CP23-000004 - SZ

Date of Sample Received: 04 Jan 2023

Testing Period: 04 Jan 2023 - 13 Feb 2023

Test Requested: Selected test(s) as requested by the client.

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

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

Result Summary:

Test Requested	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU-Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	PASS
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium and Hexavalent chromium	PASS
Halogen	See Results
AfPS GS 2019:01 PAK - Polycyclic Aromatic Hydrocarbons (PAHs)	See Results
Perfluorooctanoic acid (PFOA) and its salts & Perfluorooctane sulfonates (PFOS) and its derivatives	See Results





No. CANEC2300109006

Date: 15 Feb 2023 Page 2 of 15

Signed for and on behalf of SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Allie Chen

Allie Chen
Approved Signatory







No. CANEC2300109006

Date: 15 Feb 2023

Page 3 of 15

Test Result(s):

Test Part Description:

Specimen No.	SGS Sample ID	Description
SN1	CAN23-001090.018	Silvery chip(semi-product)
SN2	CAN23-001090.020	Copper-colored metal(semi-product)
SN3	CAN23-001090.021	Black material(semi-product)
SN4	CAN23-001090.022	"SJD"(mixed)
SN5	CAN23-001090.023	Silver-gray metal

Remarks:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>018</u>	<u>021</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND
Lead (Pb)	1000	mg/kg	2	38390▲	ND
Mercury (Hg)	1000	mg/kg	2	ND	ND
Hexavalent Chromium (CrVI)	1000	mg/kg	8	ND	ND
Sum of PBBs	1000	mg/kg	-	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND



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Test Report	No. CANEC2300109006		Date: 1	5 Feb 202	Page 4 of 15	
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>018</u>	<u>021</u>	
Sum of PBDEs	1000	mg/kg	-	ND	ND	
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	ND	

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium and Hexavalent chromium

Test Method: With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, analyzed by ICP-OES and UV-Vis.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>020</u>	<u>023</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND
Lead (Pb)	1000	mg/kg	2	10	9009504
Mercury (Hg)	1000	mg/kg	2	ND	ND
Hexavalent Chromium (Cr(VI))▼	-	μg/cm²	0.10	ND	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
- (3) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm². The sample coating is considered to contain CrVI



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No. CANEC2300109006

Date: 15 Feb 2023 Page 5 of 15

- b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-CrVI based coating
- c. The result between 0.10 µg/cm² and 0.13 µg/cm² is considered to be inconclusive unavoidable coating variations may influence the determination Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

<u>Halogen</u>

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>022</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (CI)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
lodine (I)	mg/kg	50	ND

AfPS GS 2019:01 PAK - Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method: With reference to AfPS GS 2019:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>022</u>
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND
Sum of 4 PAHs (Phenanthrene, Pyrene, Anthracene,	-	mg/kg	-	ND
Fluoranthene)				
Sum of 15 PAHs	-	mg/kg	-	ND



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No. CANEC2300109006

Date: 15 Feb 2023

Page 6 of 15

AfPS (German commission for Product Safety): PAHs requirements

	Category 1	Cate	gory 2	Categ	ory 3
Parameter (mg/kg)	Materials intended to be placed in the mouth, or materials coming into long-term contact with skin (more than 30s) during the intended use	Materials not covered by category 1, coming into long-term contact (more than 30s) or short-term repetitive contact ^c with skin during the intended or foreseeable use ^d .		Materials covered neithe by category 1 nor by category 2, coming into short-term contact (up to 30s) with skin during the intended or foreseeable use.	
	-in toys according to Directive 2009/48/EC or -for the use by children ^{a,b} up to 3 years of age.	a. use by children	b. other consumer products	a. use by children	b. other consumer products
Benzo(a)pyrene (BaP)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene (BeP)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene (BaA)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene (BbF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene (BjF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene (BkF)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene (CHR)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene (DBA)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene (BPE)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene (IPY)	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT)	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene (NAP)	< 1	<	2	< 10	
Sum of 15 PAHs	<1	< 5	< 10	< 20	< 50

Note:

Remark: The German committee on Product Safety (AfPS) published a new PAHs document (AfPS GS 2019:01 PAK) on April 10, 2020, which will be binding for the issue of GS mark certificate from July 1, 2020.

Perfluorooctanoic acid (PFOA) and its salts & Perfluorooctane sulfonates (PFOS) and its derivatives

Test Method: With reference to CEN/TS15968:2010, analysis was performed by LC-MS or LC-MS/MS.



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^a A "Child" is legally defined as a person before reaching the age of 14 years.

^b Use by children includes both active and passive contact by children.

^c Definition "short-term repetitive contact" taken from REACH Annex XVII entry 50 amendment (Regulation (EC) No. 1272/2013)

^d According to the definition of the German Product Safety Act (ProdSG) (chapter 1 Article 2 No. 28) "foreseeable use" shall mean the use of a product in a manner that the person placing it on the market, has not intended, but which could be reasonably foreseeable.



Test Report	No. CANEC230	lo. CANEC2300109006		3	Page 7 of 15
Test Item(s)		CAS NO.	<u>Unit</u>	MDL	022
Perfluorooctanoic acid (PFOA) and it	s salts*	-	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) a	and its salts*	-	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOS	A)	754-91-6	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonam	ide(N-MeFOSA)	31506-32-8	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamid	e (N-EtFOSA)	4151-50-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfona-ethanol(N-MeFOSE)	amido)	24448-09-7	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonan- -ethanol(N-EtFOSE)	nido)	1691-99-2	mg/kg	0.010	ND
Perfluorooctane sulfonates (PFOS) a	and its	-	mg/kg	-	ND
derivatives					

Notes:

- (1) PFOA and its salts* including PFOA (CAS No. 335-67-1), APFO (CAS No. 3825-26-1), PFOA-Na (CAS No. 335-95-5), PFOA-K (CAS No. 2395-00-8), PFOA-Ag (CAS No. 335-93-3) and PFOA-F (CAS No. 335-66-0). The result of PFOA is used to represent PFOA and its salts.
- (2) PFOS and its salts* including PFOS (CAS No. 1763-23-1), POSF(CAS No. 307-35-7), PFOS-K (CAS No. 2795-39-3), PFOS-NH₄ (CAS No. 29081-56-9), PFOS-N($C_{10}H_{21}$)₂(CH₃)₂ (CAS No. 251099-16-8), PFOS-NH₂($C_{2}H_{4}OH$)₂ (CAS No. 70225-14-8), PFOS-Li (CAS No. 29457-72-5), PFOS-N($C_{2}H_{5}$)₄ (CAS No. 56773-42-3) and PFOS-Na (CAS No. 4021-47-0). The result of PFOS is used to represent PFOS and its salts.

Remark *: According to the declaration from the client, Lead (Pb) in specimen 023 is exempted by EU RoHS directive 2011/65/EU based on |ANNEX III 7(a)|: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

Remark: The sample(s) 022 was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value and only for reference.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w = 0) stated in ILAC-G8:09/2019.





No. CANEC2300109006

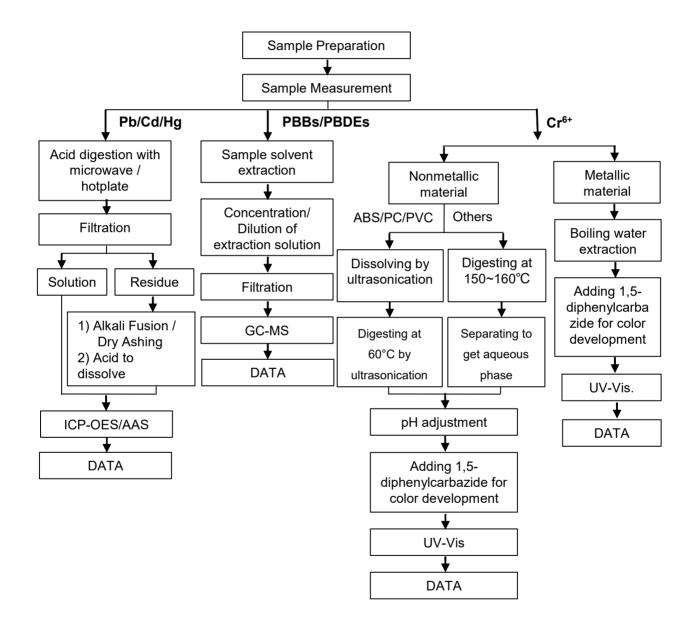
Date: 15 Feb 2023

Page 8 of 15

ATTACHMENTS

Pb/Cd/Hg/Cr6+/PBBs/PBDEs Testing Flow Chart

1) These samples were dissolved totally by pre -conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded).





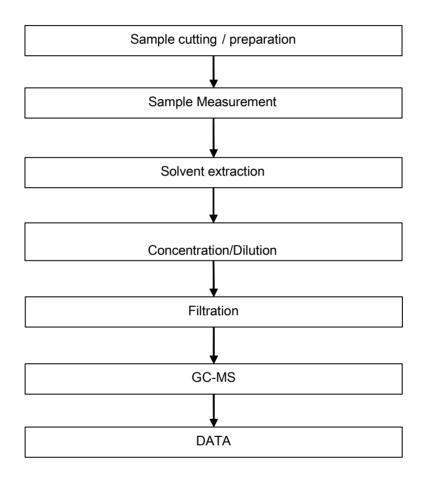


No. CANEC2300109006

Date: 15 Feb 2023 Page 9 of 15

ATTACHMENTS

Phthalates Testing Flow Chart







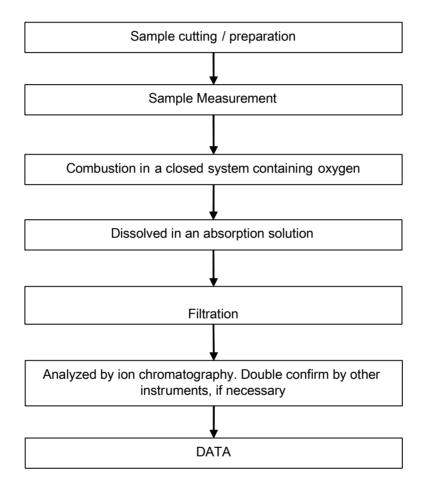
No. CANEC2300109006

Page 10 of 15

Date: 15 Feb 2023

ATTACHMENTS

Halogen Testing Flow Chart







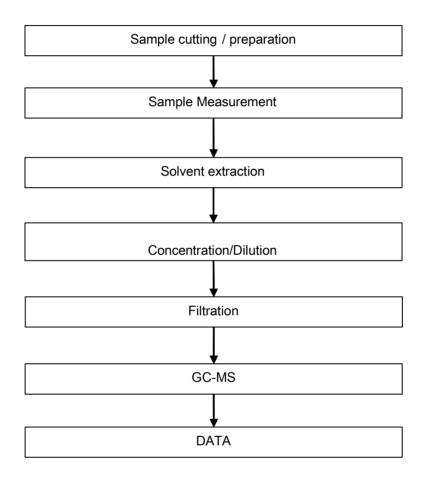
No. CANEC2300109006

Page 11 of 15

Date: 15 Feb 2023

ATTACHMENTS

PAHs Testing Flow Chart





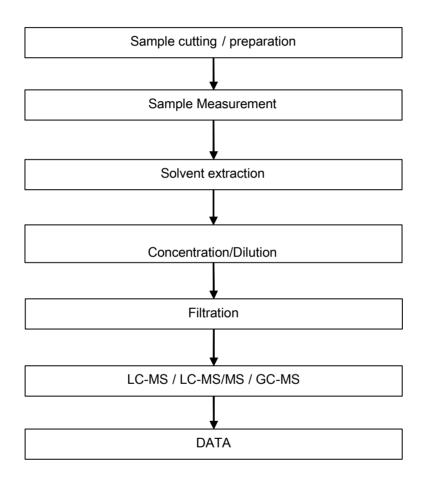


No. CANEC2300109006

Date: 15 Feb 2023 Page 12 of 15

ATTACHMENTS

PFAS Testing Flow Chart





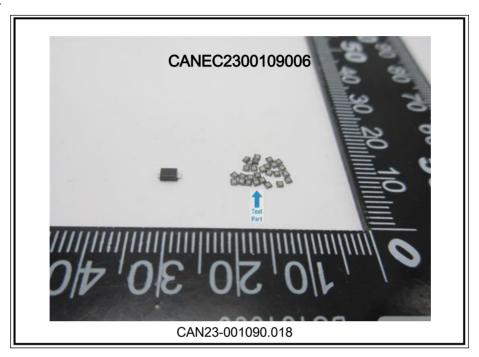


No. CANEC2300109006

Page 13 of 15

Date: 15 Feb 2023

Sample photo:









No. CANEC2300109006

Page 14 of 15

Date: 15 Feb 2023









No. CANEC2300109006 Date: 15 Feb 2023 Page 15 of 15



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*** End of Report ***

