

Test Report No. TAOEC2306930305 Date: 28 Sep 2023 Page 1 of 12

BEIJING DOUBLINK SOLDERS CO., LTD Client Name:

Client Address: NO.40 BEIYUAN ROAD, CHAOYANG DISTRICT, BEIJING, CHINA

Sample Name: **COPPER WIRE**

Model No.: HC2 HC1-n Client Ref. Information: Main Substance: Cu

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

SGS Job No.: TJP23-001605 - QD

Date of Sample Received: 21 Sep 2023

Testing Period: 21 Sep 2023 - 27 Sep 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
Halogen	See Results
Alkanes C14-C17, chloro (Medium-chain Chlorinated Paraffins) (MCCP)	See Results
Tetrabromobisphenol A (TBBP-A)	See Results
Perfluorooctanesulfonate (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts	See Results



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Signed for and on behalf of SGS-CSTC Standards Technical Services (Qingdao) Co., Ltd.

Zhang Bo, Justin Approved Signatory

Justin



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Test Result(s):

Test Part Description:

Specimen No. SGS Sample ID **Description**

> SN₁ TAO23-069303.003 coppery metal wire

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)

With reference to IEC 62321-5:2013, IEC 62321-4:2013+AMD1:2017, IEC 62321-7-1:2015, IEC Test Method: 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES.AAS, UV-Vis and GC-MS.

Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND



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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>	
Pentabromodiphenyl ether	-	mg/kg	5	ND	
Hexabromodiphenyl ether	-	mg/kg	5	ND	
Heptabromodiphenyl ether	-	mg/kg	5	ND	
Octabromodiphenyl ether	-	mg/kg	5	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND	
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	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
 - b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 $\mu g/cm^2$). The coating is considered a non-CrVI based coating
 - c. The result between $0.10~\mu g/cm^2$ and $0.13~\mu g/cm^2$ 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.

(4) 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.

Halogen

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

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Fluorine (F)	mg/kg	20	ND
Chlorine (CI)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
lodine (I)	mg/kg	50	ND

Alkanes C14-C17, chloro (Medium-chain Chlorinated Paraffins) (MCCP)

Test Method: With reference to ISO 22818:2021, analysis was performed by GC-NCI-MS.



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Test Item(s)UnitMDL003Medium Chain Chlorinated Paraffin(C14-C17)mg/kg50ND

(MCCP)

Tetrabromobisphenol A (TBBP-A)

Test Method: With reference to US EPA 3550C - ULTRASONIC EXTRACTION: 2007, analysis was performed

by LC-MS.

 Test Item(s)
 Unit
 MDL
 003

 Tetrabromobisphenol A (TBBP-A)
 mg/kg
 10
 ND

Perfluorooctanesulfonate (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts

Test Method: With reference to CEN/TS 15968:2010, analysis was performed by LC- MS-MS.

Test Item(s)	CAS NO.	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Perfluorooctanesulfonate (PFOS) and its derivatives	-	mg/kg	-	ND
Perfluorooctane Sulfonates (PFOS)^	1763-23-1	mg/kg	0.01	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	mg/kg	0.01	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	1691-99-2	mg/kg	0.01	ND
(EtFOSE)				
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	mg/kg	0.01	ND
2-(N-methylperfluoro- 1-octanesulfonamido) -ethanol	24448-09-7	mg/kg	0.01	ND
(MeFOSE)				
Perfluorooctane sulfonamide (PFOSA)	754-91-6	mg/kg	0.01	ND
Perfluorooctanoic Acid (PFOA) and its salts+		mg/kg	0.01	ND

Notes:

(1) ^ PFOS refer to its acid, salts/derivatives including PFOS (CAS No.: 1763-23-1) , PFOS-K (CAS No.: 2795-39-3) , PFOS-Li (CAS No.: 29457-72-5), PFOS-NH4 (CAS No.: 29081-56-9), PFOS-NH(OH)2 (CAS No.: 70225-14-8) and PFOS-N(C2H5)4 (CAS No.: 56773-42-3), PFOS-N(CH3)2(C10H21)2 (CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7).

(2) PFOA and its salts+ refer to its acid / salts including PFOA (CAS No.: 335-67-1), PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8), PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1)

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.



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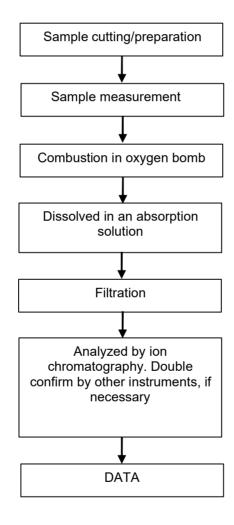
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Halogen Testing Flow Chart





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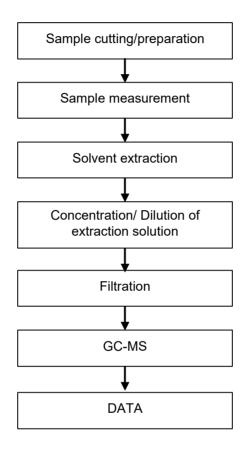
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PBBs/PBDEs Testing Flow Chart





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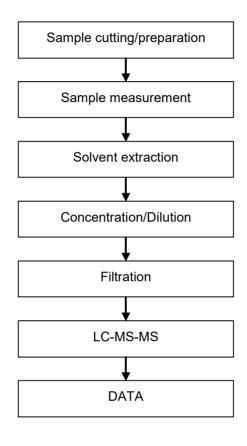
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PFOS/PFOA Testing Flow Chart





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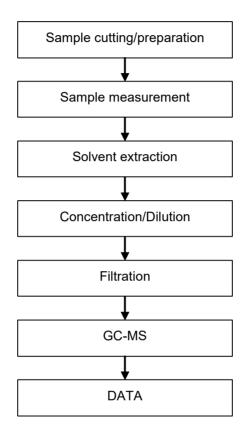


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Phthalates Testing Flow Chart





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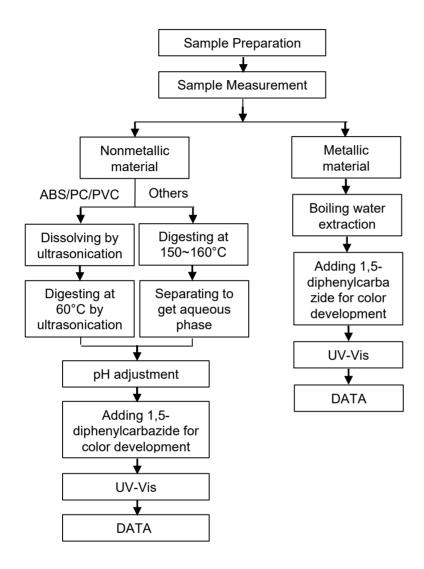


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Hexavalent Chromium (Cr(VI)) Testing Flow Chart





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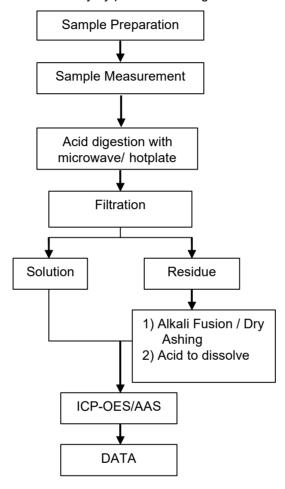
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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.





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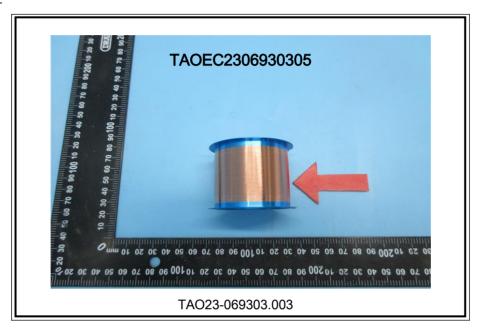


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