

## Test Report

No.: CANEC24001792316

Date: Feb 01, 2024

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Client Name: SHENGYI TECHNOLOGY(SHAANXI)CO., LTD.

Client Address: NO.8 YONGCHANG ROAD,QINDUDISTRICT, XIANYANG CITY,SHAANXI PROVINCE,CHINA

Sample Name: Metal Base Copper Clad Laminate

Model No.: SAR20H

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

SGS Job No.: GZP24-002268

Sample Receiving Date: Jan 24, 2024

Testing Period: Jan 24, 2024 ~ Feb 01, 2024

Test Requested: Select 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).

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Perfluorooctane Sulfonates (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts	See Results
Halogen	See Results
Element(s)	See Results
Hexabromocyclododecane (HBCDD)	See Results
Phthalates	See Results

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

*Jany Zhong*

Jany Zhong  
Approved Signatory

scan to see the report



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SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Standards Technical Services Co., Ltd. Chemical Laboratory.

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**Test Result(s):**

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A15	CAN24-0017923-0001.C015	Copper clad silvery laminate

Remarks:

- (1) 1 mg/kg = 1 ppm = 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 (PBB), Polybrominated diphenyl ethers (PBDE), 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+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES/AAS, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A15
Lead (Pb)	1000	mg/kg	2	5
Mercury (Hg)	1000	mg/kg	2	ND
Cadmium (Cd)	100	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Polybrominated biphenyls (PBB)	1000	mg/kg	-	ND
Monobrominated biphenyl (MonoBB)	-	mg/kg	5	ND
Dibrominated biphenyl (DiBB)	-	mg/kg	5	ND
Tribrominated biphenyl (TriBB)	-	mg/kg	5	ND
Tetrabrominated biphenyl (TetraBB)	-	mg/kg	5	ND
Pentabrominated biphenyl (PentaBB)	-	mg/kg	5	ND
Hexabrominated biphenyl (HexaBB)	-	mg/kg	5	ND
Heptabrominated biphenyl (HeptaBB)	-	mg/kg	5	ND
Octabrominated biphenyl (OctaBB)	-	mg/kg	5	ND
Nonabrominated biphenyl (NonaBB)	-	mg/kg	5	ND
Decabrominated biphenyl (DecaBB)	-	mg/kg	5	ND
Polybrominated diphenyl ethers (PBDE)	1000	mg/kg	-	ND
Monobrominated diphenyl ether (MonoBDE)	-	mg/kg	5	ND
Dibrominated diphenyl ether (DiBDE)	-	mg/kg	5	ND
Tribrominated diphenyl ether (TriBDE)	-	mg/kg	5	ND
Tetrabrominated diphenyl ether (TetraBDE)	-	mg/kg	5	ND
Pentabrominated diphenyl ether (PentaBDE)	-	mg/kg	5	ND
Hexabrominated diphenyl ether (HexaBDE)	-	mg/kg	5	ND
Heptabrominated diphenyl ether (HeptaBDE)	-	mg/kg	5	ND



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Test Item(s)	Limit	Unit(s)	MDL	A15
Octabrominated diphenyl ether (OctaBDE)	-	mg/kg	5	ND
Nonabrominated diphenyl ether (NonaBDE)	-	mg/kg	5	ND
Decabrominated diphenyl ether (DecaBDE)	-	mg/kg	5	ND
Bis(2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Diisobutyl phthalate (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) 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.

**Perfluorooctane Sulfonates (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts**

Test Method: Modified CEN/TS 15968:2010, analysis was performed by LC-MS or LC-MS/MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A15
PFOS and its derivatives	-	mg/kg	-	ND
Perfluorooctane Sulfonates (PFOS) and its salts*	1763-23-1	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA)	4151-50-2	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide (N-MeFOSA)	31506-32-8	mg/kg	0.010	ND
2-(N-ethylperfluoro-1-octanesulfonamido) -ethanol (N-EtFOSE)	1691-99-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1-octanesulfonamido) -ethanol (N-MeFOSE)	24448-09-7	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
Perfluorooctanoic Acid (PFOA) and its salts*	335-67-1	mg/kg	0.010	ND

**Notes:**

- (1) Perfluorooctanoic acid (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) Perfluorooctane sulfonates (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-NH<sub>4</sub> (CAS No. 29081-56-9), PFOS-N(C<sub>10</sub>H<sub>21</sub>)<sub>2</sub>(CH<sub>3</sub>)<sub>2</sub> (CAS No. 251099-16-8), PFOS-NH<sub>2</sub>(C<sub>2</sub>H<sub>4</sub>OH)<sub>2</sub> (CAS No. 70225-14-8), PFOS-Li (CAS No. 29457-72-5), PFOS-N(C<sub>2</sub>H<sub>5</sub>)<sub>4</sub> (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.



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**Halogen**

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

Test Item(s)	Unit(s)	MDL	A15
Fluorine(F)	mg/kg	20	ND
Chlorine(Cl)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

**Element(s)**

Test Method: With reference to US EPA 3052:1996, analysis was performed by ICP-OES/AAS.

Test Item(s)	Unit(s)	MDL	A15
Beryllium(Be)	mg/kg	5	ND
Antimony(Sb)	mg/kg	10	ND

**Hexabromocyclododecane (HBCDD)**

Test Method: With reference to IEC 62321-9:2021, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A15
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD)	134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6	mg/kg	20	ND

**Phthalates**

Test Method: With reference to EN 14372:2004, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A15
Dibutyl Phthalate(DBP)	84-74-2	%	0.003	ND
Benzyl Butyl Phthalate(BBP)	85-68-7	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate(DEHP)	117-81-7	%	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.010	ND
Di-n-Octyl Phthalate(DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.010	ND
Dimethyl Phthalate(DMP)	131-11-3	%	0.003	ND
Diisobutyl Phthalate(DIBP)	84-69-5	%	0.003	ND
Dipentyl Phthalates (DnPP)	131-18-0	%	0.003	ND
Di-n-Hexyl Phthalate(DnHP)	84-75-3	%	0.003	ND
Bis(2-methoxyethyl)phthalate(DMEP)	117-82-8	%	0.003	ND
Diisopentyl Phthalate(DIPP)	605-50-5	%	0.003	ND



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Test Item(s)	CAS No.	Unit(s)	MDL	A15
n-pentyl Isopentyl Phthalate(nPIPP)	776297-69-9	%	0.003	ND
1,2-Benzenedicarboxylic Acid,di-C6-8-branched alkyl esters,C7-rich(DIHP)	71888-89-6	%	0.010	ND
1,2-Benzenedicarboxylic Acid,Di-C7-11-Branched and Linear Alkyl Esters(DHNUP)	68515-42-4	%	0.010	ND
1,2-Benzenedicarboxylic Acid,Dipentyl Ester,Branched and Linear	84777-06-0	%	0.010	ND
1,2-benzenedicarboxylic Acid,dihexyl ester branched and linear(DHxP)	68515-50-4	%	0.010	ND

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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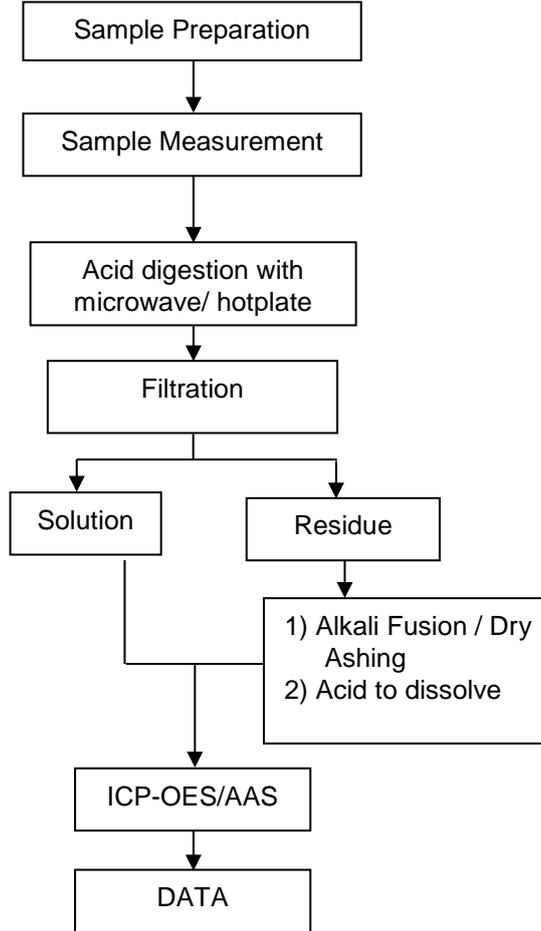
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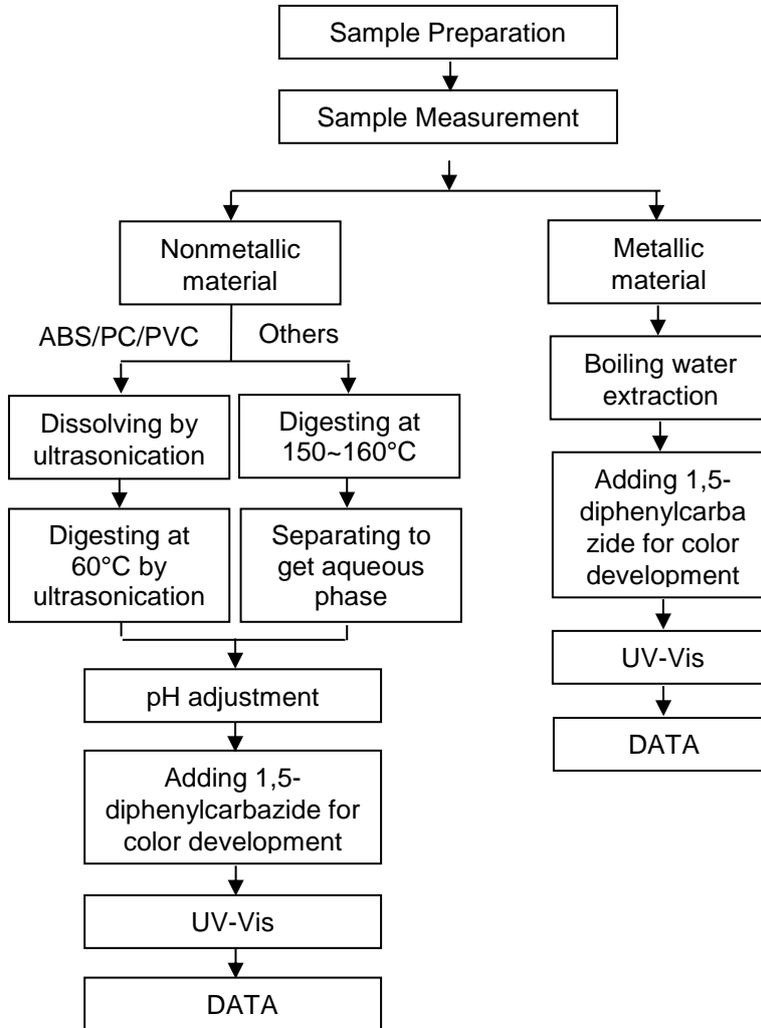
### ATTACHMENTS

#### Elements Testing Flow Chart

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

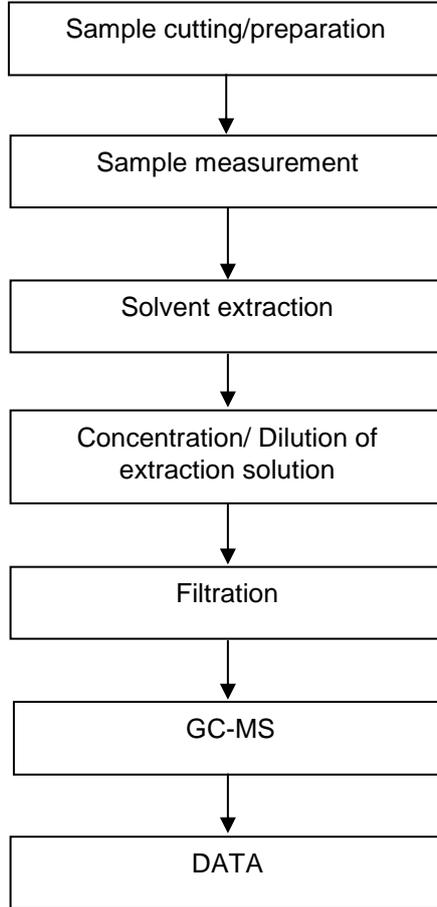


**Hexavalent Chromium (Cr(VI)) Testing Flow Chart**



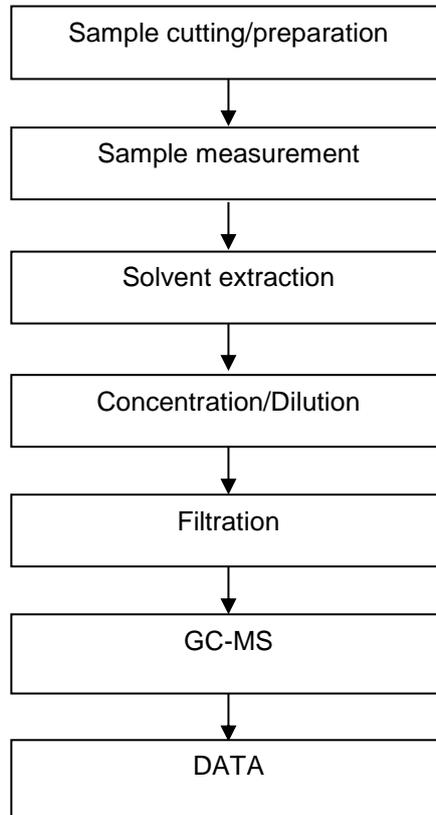
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### PBB/PBDE Testing Flow Chart

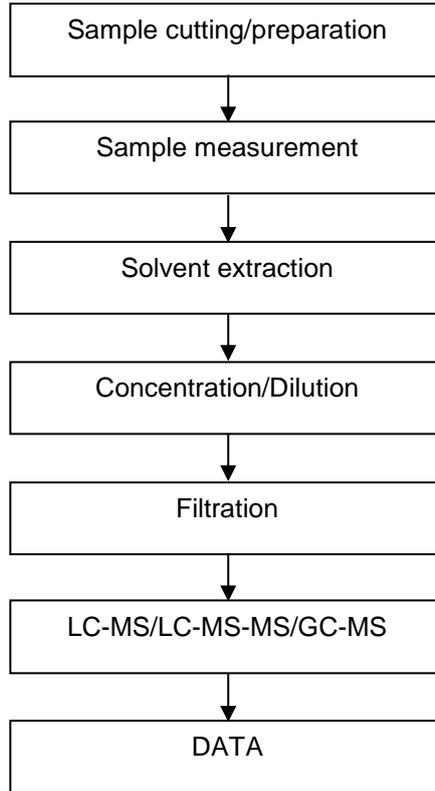


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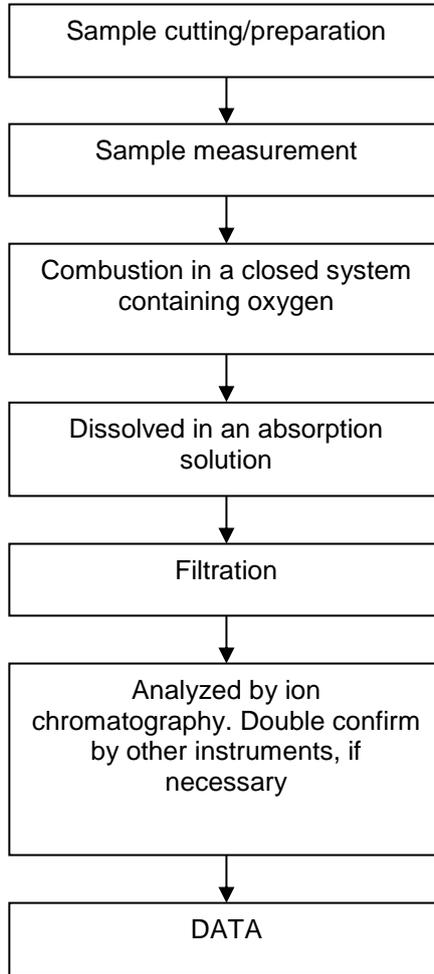
### Phthalates Testing Flow Chart



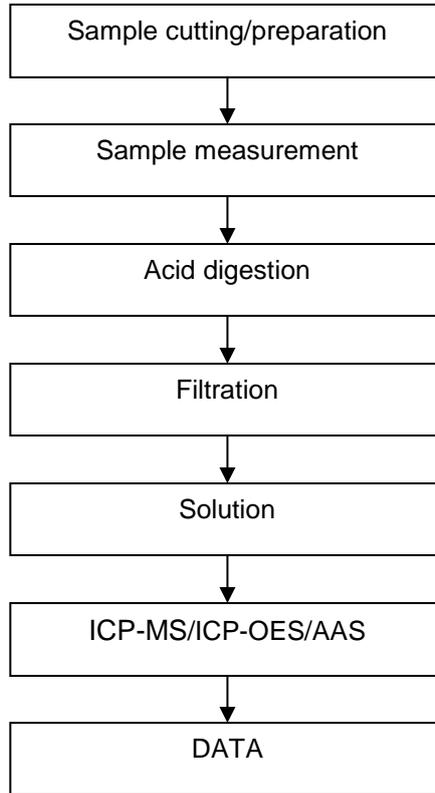
### PFASs/ PFOS/PFOA Testing Flow Chart



### Halogen Testing Flow Chart

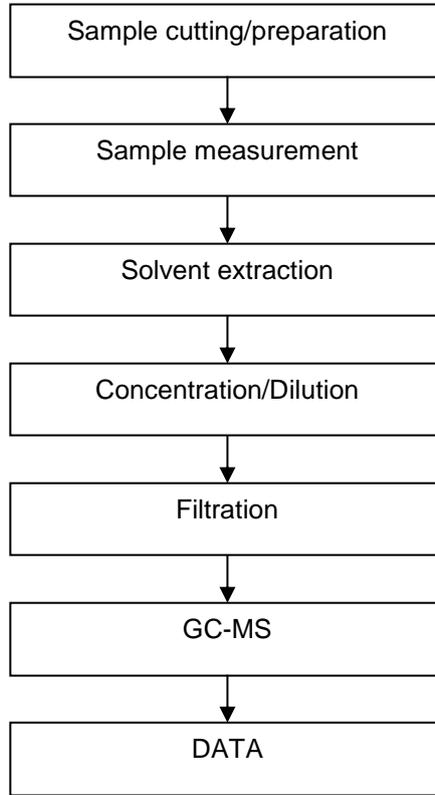


### Elements Testing Flow Chart



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### HBCDD Testing Flow Chart



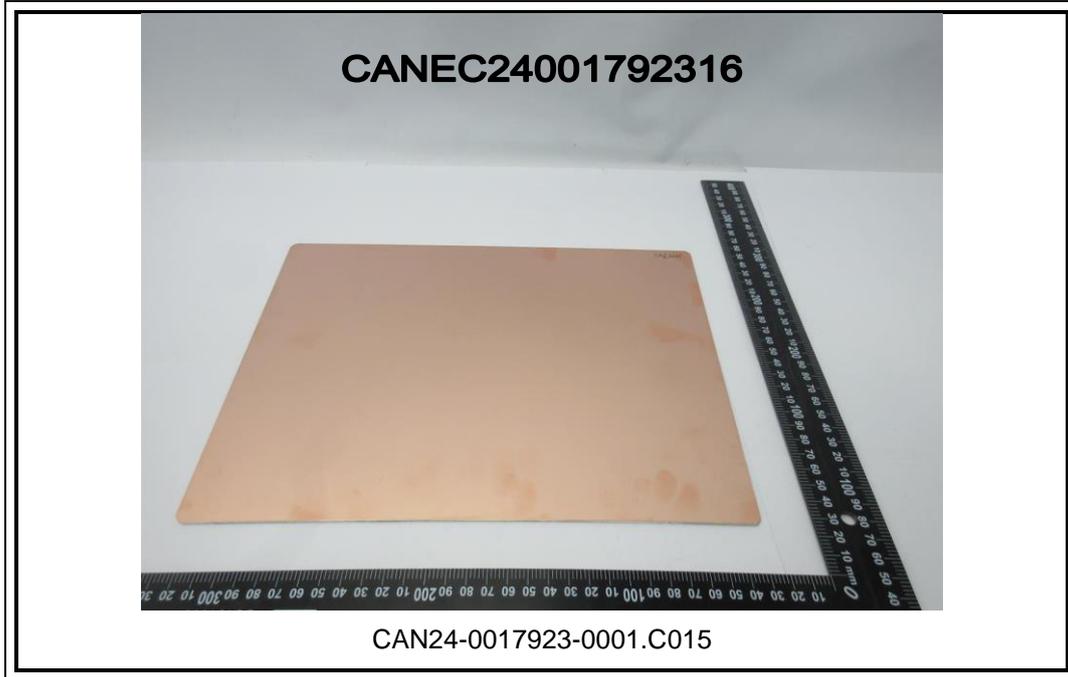
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Sample Photo:



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