

## CERTIFICATE OF CONFORMITY

### Electrodeposited copper foil TRZA-HTE

**Date of issue:** 25<sup>th</sup> October 2021

**SGS Reference:** 4894479-HK

**Details of Sample:** Electrodeposited copper foil TRZA-HTE

**Date of Receipt:** 1<sup>st</sup> September 2021

**Date of Test:** 1<sup>st</sup> September 2021 TO 13<sup>th</sup> September 2021

**Test required:** The European Commission has defined the maximum concentration values of 0,1% by weight in homogenous material for Pb, Hg, Cr(VI), PBB, PBDE, DBP, BBP, DEHP, DIBP and 0,01% by weight in homogenous material for Cd

**Conclusion:** Based on the performed tests on submitted sample(s), the result of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

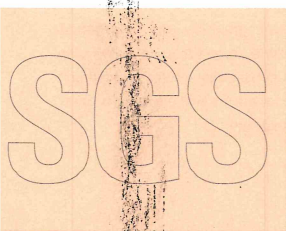
**Issue Number:** 1

This Certificate of conformity is based on analysis in accordance with the provision of the Directive 2011/65/EU and Directive(EU) 2015/863 amending Annex II to Directive 2011/65/EU as amended by the Commission Decision on the restriction of the use of the certain hazardous substances in electrical and electronic equipment. It does not imply an assessment of the production. No amounts above the limits of these substances have been detected. This result relates only to the item(s) tested.

AO SGS Vostok Limited

Denis Eroshkin  
Business Manager  
Industries & Environment Division  
North West Russia

Directive 2011/65/EU and Directive (EU)  
2015/863 amending Annex II to Directive  
2011/65/EU



AO "SGS Vostok Limited" Russian Federation, 115432, Moscow, Andropova Prospekt, 18, building 7, 6th floor, premises XI - rooms 1,2,4,5; t. (7-495)775-44-55, f. (7-495)775-44-50, [www.ru.sgs.com](http://www.ru.sgs.com)

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## Test Report

No. HKTEC2104404501

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JOINT STOCK COMPANY KYSHTYM COPPER ELECTROLYTIC PLANT

PARIZHSKOY COMMUNE STR., 2, 456870, KYSHTYM, RUSSIAN FEDERATION

The following sample(s) was/were submitted and identified on behalf of the clients as : ELECTRODEPOSITED COPPER FOIL TRZA-HTE

SGS Job No. : 4894479 - HK

Manufacturer : JOINT STOCK COMPANY KYSHTYM COPPER ELECTROLYTIC PLANT

Country of Origin : RUSSIA

Date of Sample Received : 01 Sep 2021

Testing Period : 01 Sep 2021 - 13 Sep 2021

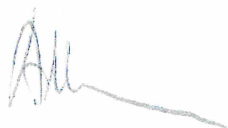
Test Requested : Selected test(s) as requested by client.

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

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

Conclusion : Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of  
SGS Hong Kong Limited.



Lam Ka Yung, Allen  
Chemist

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**H33899448**



# Test Report

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Test Results :

## Test Part Description :

Specimen No.	SGS Sample ID	Description
1	HKT21-044045.001	Coppery metal

Remarks :

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

## RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES and GC-MS. (Decision Rule: please refer to appendix 1: Category 1)  
With reference to IEC62321-7-1:2015, analyzed by UV-Vis. (Decision Rule: please refer to appendix 1: Category 4)

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	5	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm <sup>2</sup>	0.10	ND
Sum of PBBs	1,000	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	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND

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Test Item(s)	Limit	Unit	MDL	001
Tetrabromodiphenyl ether	-	mg/kg	5	ND
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)	1,000	mg/kg	50	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND

### Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

IEC 62321 series is equivalent to EN 62321 series

[http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

(2) ▼ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm<sup>2</sup>. The sample coating is considered to contain Cr(VI)

b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm<sup>2</sup>). The coating is considered a non-Cr(VI) based coating

c. The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> 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.

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### Appendix 1

Category	Decision Rule Statement
1	<p>The decision rule for conformity reporting is based on the non-binary statement with guard band (is equal to the expanded measurement uncertainty with a 95% coverage probability, <math>w = U95</math>) in ILAC-G8:09/2019 Clause 4.2.3.</p> <p>A. "Pass - the measured value is within (or below / above) the acceptance limit, where the acceptance limit is below / above to the guard band." or "Pass - The measured values were observed in tolerance at the points tested. The specific false accept risk is up to 2.5%."</p> <p>B. "Conditional Pass - The measured values were observed in tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values exceeded / out of tolerance. When the measured result is close to the tolerance, the specific false accept risk is up to 50%."</p> <p>C. "Conditional Fail - One or more measured values were observed out of tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values were in tolerance. When the measured result is close to the tolerance, the specific false reject risk is up to 50%."</p> <p>D. "Fail - the measured value is out of (or below / above) the tolerance limit added / subtracted to the guard band." or "Fail - One or more measured values were observed out of tolerance at the points tested". The specific false reject risk is up to 2.5%.</p>
2	<p>The decision rule for conformity reporting is based on BS EN 1811:2011+A1:2015: Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin in Section 9.2 interpretation of results.</p>
3	<p>The decision rule for conformity reporting is based on the general consideration of simple acceptance as stated in ISO/IEC Guide 98-3: "Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM 1995)", and more specifically for analytical measurements to the EURACHEM/CITAC Guide 2012 "Quantifying Uncertainty in Analytical Measurement".</p>
4	<p>The decision rule for conformity reporting is according to the IEC 62321-7-1 Edition 1.0 2015-09 Section 7: Table 1-(comparison to standard and interpretation of result)</p>
5	<p>The decision rule for conformity reporting is according to the IEC 62321-3-1 Edition 1.0 2013-06 Annex A.3 interpretation of result.</p>
6	<p>The decision rule for conformity reporting is according to the GB/T 26125-2011 Annex A to H</p>
7	<p>The decision rule for conformity reporting is according to the requested specification or standard (ASTM F963-17 section 4.3.5)</p>
8	<p>The decision rule for conformity reporting is according to the requested specification or standard (AS/NZS ISO 8124 Part 3 section 4.2)</p>
Remark	<p>If the decision rule is not feasible to be used and the uncertainty of the result is able to be provided, the uncertainty range of the result will be shown in the report. Otherwise, only result will be shown in the report.</p>

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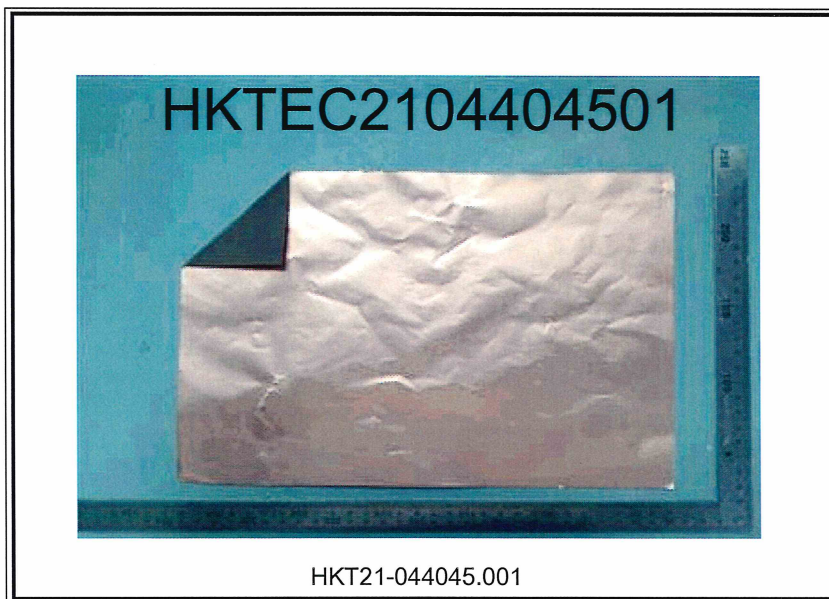
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Sample photo:



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\*\*\* End of Report \*\*\*

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