

RoHS COMPLIANCE

The European Union Directive 2011/65/EC, Restriction of Hazardous Substances (RoHS 2.0) legislation restricts the use of certain substances in electrical and electronic equipment (EEE).

This directive applies to all electrical and electronic products and their components currently placed on the European market except for stated exemption categories.

On June 4, 2015, the EU Commission published new Directive (EU) 2015/863 which adds 4 phthalate substances to the list of 6 already in RoHS 2.0. These phthalates are restricted from use starting July 22, 2019 from most EEE.

All thermoelectric production produced by KIMT complies with the RoHS requirements declared in www.rohsguide.com and conform to the following maximum concentration limits of this directive as shown below.

- Cadmium (Cd): < 100 ppm
- Lead (Pb): < 1000 ppm
- Mercury (Hg): < 1000 ppm
- Hexavalent Chromium (Cr VI): < 1000 ppm
- Polybrominated Biphenyls (PBB): < 1000 ppm
- Polybrominated Diphenyl Ethers (PBDE): < 1000 ppm
- Bis(2-Ethylhexyl) phthalate (DEHP): < 1000 ppm
- Benzyl butyl phthalate (BBP): < 1000 ppm
- Dibutyl phthalate (DBP): < 1000 ppm
- Diisobutyl phthalate (DIBP): < 1000 ppm

RoHS compliance of thermoelectric coolers manufactured by KIMT is confirmed by the results given in test report.

KIMT will continue to monitor the developments of the RoHS legislation and actively require each supplier to ensure that our products comply with RoHS specifications.



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KIMT LLP.

OFFICE 127, 241 MUKANOVA STR., ALMATY, 050000, REPUBLIC OF KAZAKHSTAN

The following sample(s) was/were submitted and identified on behalf of the clients as: SEE APPENDIX 2

SGS Job No.: 5390666 - HK Manufacturer: KIMT LLP.

Country of Origin: **KAZAKHSTAN** Date of Sample Received: 16 Apr 2024

Testing Period: 16 Apr 2024 - 29 Apr 2024

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).

Based on the performed tests on submitted sample(s), the results of Cadmium, Conclusion:

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 Senior Chemist



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Test Results:

Test Part Description:

Specimen No.	SGS Sample ID	Description
1	HKT24-016333.001	Grey ceramic
2	HKT24-016333.002	Translucent ceramic
3	HKT24-016333.003	White ceramic
4	HKT24-016333.004	Grey ceramic w/ coppery metal w/ silvery/ golden plating
5	HKT24-016333.005	Grey ceramic w/ coppery metal w/ silvery plating
6	HKT24-016333.006	Silvery crystal
7	HKT24-016333.007	Silvery crystal
8	HKT24-016333.008	Golden metal
9	HKT24-016333.009	Coppery metal w/ silvery plating
10	HKT24-016333.010	Black soft plastic
11	HKT24-016333.011	Grey paste
12	HKT24-016333.012	Silvery metal
13	HKT24-016333.013	Silvery metal
14	HKT24-016333.014	Silvery metal
15	HKT24-016333.015	Silvery metal
16	HKT24-016333.016	Translucent plastic
17	HKT24-016333.017	Grey solid
18	HKT24-016333.018	Silvery crystal w/ silvery golden plating
19	HKT24-016333.019	Off white soft plastic
20	HKT24-016333.020	Grey paste
21	HKT24-016333.021	Black soft plastic
22	HKT24-016333.022	White soft plastic

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

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Test Method: With reference to IEC 62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-7-2:2017,

IEC62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS. (Decision

Rule: please refer to appendix 1: Category 1)

Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>001</u>	<u>002</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1,000	mg/kg	2	ND	ND	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND	ND	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND	ND	ND

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Test Report No.	o. HKTEC240163	3302	Date: 07	May 2024		Page 4 of 23
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>004</u>	<u>005</u>	<u>006</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1,000	mg/kg	2	ND	ND	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND	ND	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND	ND	ND
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>007</u>	<u>010</u>	<u>011</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1,000	mg/kg	2	512	ND	98
Mercury (Hg)	1,000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND	ND
Monobromobiphenyl						



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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>007</u>	<u>010</u>	<u>011</u>
Dibromobiphenyl	_	mg/kg	5	ND	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND	ND	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND	ND	ND
Test Item(s)	<u>Limit</u>	<u>Unit</u>	MDL	<u>016</u>	<u>017</u>	<u>018</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1,000	mg/kg	2	ND	ND	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND	ND
Dibromobiphenyl	_	mg/kg	5	ND	ND	ND
Tribromobiphenyl	_	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	_	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND

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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>016</u>	<u>017</u>	<u>018</u>
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND	ND	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND	ND	ND
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>	<u>020</u>	<u>021</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1,000	mg/kg	2	ND	67	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND



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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>019</u>	<u>020</u>	<u>021</u>
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND	ND	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND	ND	ND
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>022</u>		
Cadmium (Cd)	100	mg/kg	2	ND		
Lead (Pb)	1,000			ND		
• •		mg/kg	2	ND		
Mercury (Hg)	1,000 1,000	mg/kg mg/kg	2	ND		
Hexavalent Chromium (Cr(VI)) Sum of PBBs			8			
	1,000	mg/kg	- E	ND ND		
Monobromobiphenyl	-	mg/kg	5	ND		
Dibromobiphenyl Tribromobiphenyl	-	mg/kg	5 5	ND		
• •	-	mg/kg	5	ND		
Tetrabromobiphenyl Pentabromobiphenyl	-	mg/kg	5 5	ND		
Hexabromobiphenyl	-	mg/kg mg/kg	5 5	ND		
Heptabromobiphenyl	- -	mg/kg	5	ND		
Octabromobiphenyl	<u>-</u>	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		
Tetrabromodiphenyl ether	_	mg/kg	5	ND		
Pentabromodiphenyl ether	<u>-</u>	mg/kg	5	ND		
Hexabromodiphenyl ether	_	mg/kg	5	ND		
Heptabromodiphenyl ether	_	mg/kg	5	ND		
Octabromodiphenyl ether	<u>-</u>	mg/kg	5	ND		
Octabiomodiphenyl ether	-	mg/kg	J	טאו		



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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>022</u>	
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:

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)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>008</u>	<u>009</u>	<u>012</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1,000	mg/kg	5	ND	ND	49
Mercury (Hg)	1,000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND

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Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>008</u>	<u>009</u>	<u>012</u>
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND	ND	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND	ND	ND
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>013</u>	<u>014</u>	<u>015</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1,000	mg/kg	5	135	69	ND
Mercury (Hg)	1,000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))▼	-	μg/cm²	0.10	ND	ND	ND
Sum of PBBs	1,000	mg/kg	-	ND	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1,000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND



Test Report	No. HKTEC240163	3302	Date: 07	May 2024		Page 10 of 2	23
Test Item(s)	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>013</u>	<u>014</u>	<u>015</u>	
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND	
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND	
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND	
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND	ND	ND	
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND	ND	ND	
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND	ND	ND	
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND	ND	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
- (2) \blacktriangledown = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm2. 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 μ g/cm2). The coating is considered a non-Cr(VI) based coating
- c. The result between 0.10 μ g/cm2 and 0.13 μ g/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.

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Appendix 1

Category	Decision Rule Statement
31	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, w = U95) in ILAC-G8:09/2019 Clause 4.2.3. 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%.". 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%.". 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%.". 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 precific false reject risk is up to 2.5%."
2	of tolerance at the points tested. The specific false reject risk is up to 2.5%. The decision rule for conformity reporting is based on EN 1811:2023: 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.
3	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".
4	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 solutions and interpretation of result)
5	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.
6	The decision rule for conformity reporting is according to the GB/T 39560.701-2020 Section 7: Table 1 - (comparison to standard solutions and interpretation of result)
7	The decision rule for conformity reporting is according to the requested specification or standard (ASTM F963-23 section 4.3.5)
8	The decision rule for conformity reporting is according to the requested specification or standard (AS/NZS ISO 8124 Part 3 section 4.2)
9	The decision rule for conformity reporting is according to the GB/T 39560.301-2020 Annex A.3 interpretation of result
Remark	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.



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Appendix 2

As per client's declaration, the submitted sample contains the items below. Such declaration is not verified by SGS Hong Kong Ltd

PRODUCT DESCRIPTION:

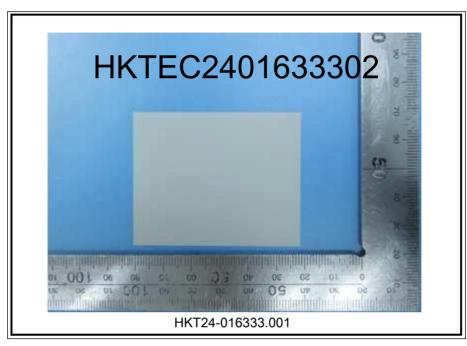
- 1. CERAMIC PLATES AIN (WITHOUT METALLIZATION)
- 2. CERAMIC PLATES AI2O3 (99,7%) (WITHOUT METALLIZATION)
- 3. CERAMIC PLATES AI2O3 (96%) (WITHOUT METALLIZATION)
- 4. CERAMIC PLATES AIN (WITH Ni-Au METALLIZATION) ENIG
- 5. CERAMIC PLATES AIN (WITH Ni-Pd-Au METALLIZATION) ENEPIG
- 6. PELLETS OF THERMOELECTRIC MATERIAL BITeSe (N-TYPE) WITH Ni-Sn GALVANIC PLATING
- 7. PELLETS OF THERMOELECTRIC MATERIAL BISbTe (P-TYPE) WITH Ni-Sn GALVANIC PLATING
- 8. WIRE BONDING POSTS (Cu BASE, Ni-Au PLATED)
- 9. SILVER-PLATED COPPER CONNECTING WIRES
- 10. TEFLON INSULATION
- 11. SOLDER PASTE Sn-99%, Sb-1% (TMELT = 230°C)
- 12. SOLDER Sn-99%, Sb-1% (TMELT = 230°C)
- 13. SOLDER PREFORM Sn-86.9%, In-10%, Aq-3.1% (TMELT = 206°C)
- 14. SOLDER PREFORM In-97%, Aq-3% (TMELT = 143°C)
- 15. SOLDER PREFORM Sn-43%, Bi-57% (TMELT = 138°C)
- 16. PARYLENE (POLY-PARA-XYLENE) COATING
- 17. EPOXY BASED ADHESIVE
- 18. WAFERS OF THERMOELECTRIC MATERIAL BiTeSe (N-TYPE) WITH Au-Sn (TMELT = 280°C) GALVANIC PLATING
- 19. SILICONE ADHESIVE SEALANT
- 20. SOLDER PASTE Sn-99.3%, Cu-0.7% (TMELT = 227°C)
- 21. SILICONE INSULATION
- 22. SILICONE SEALANT

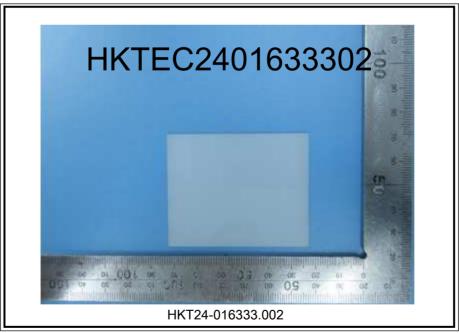
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Sample photo:

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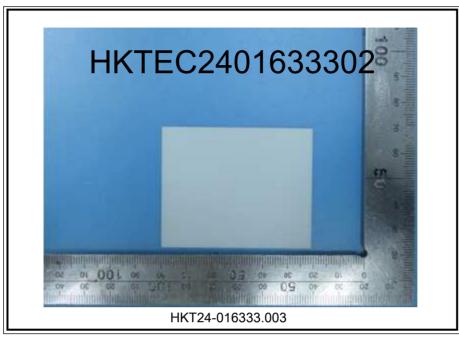
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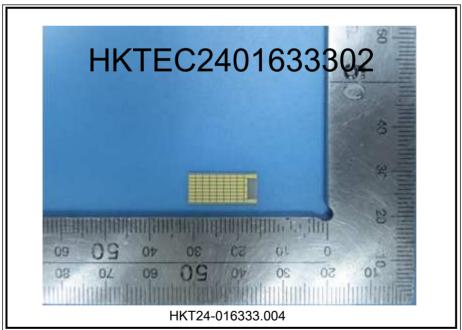
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only

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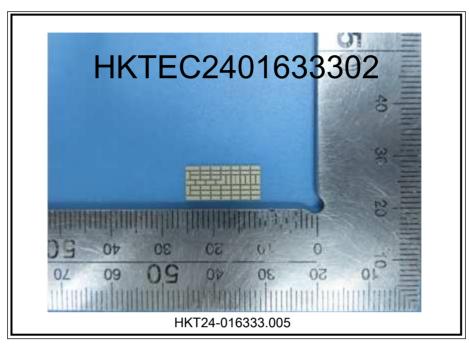




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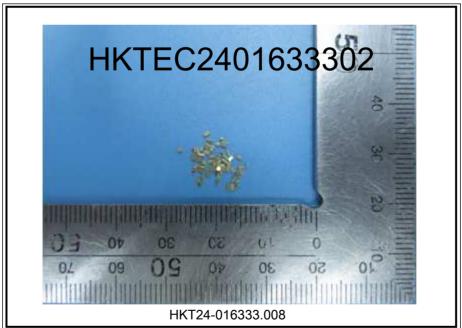


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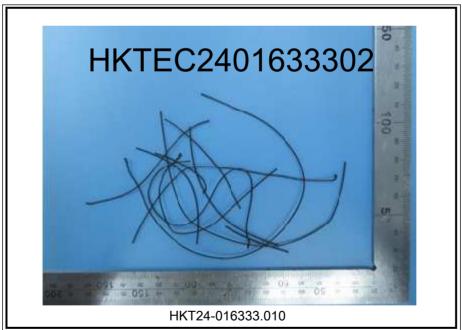


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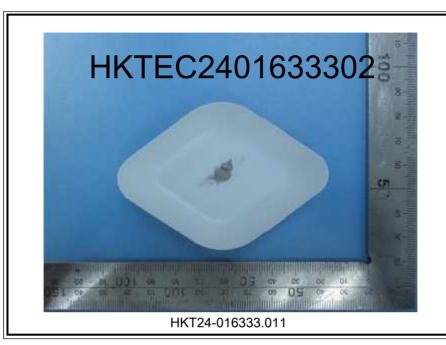




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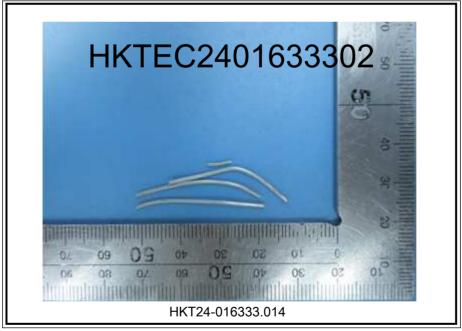


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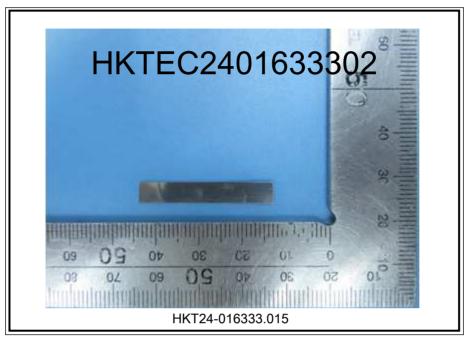




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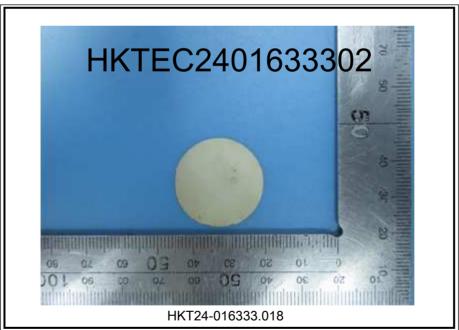


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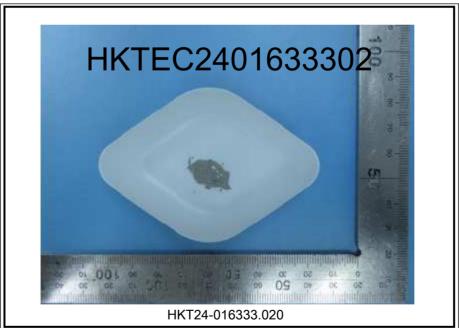


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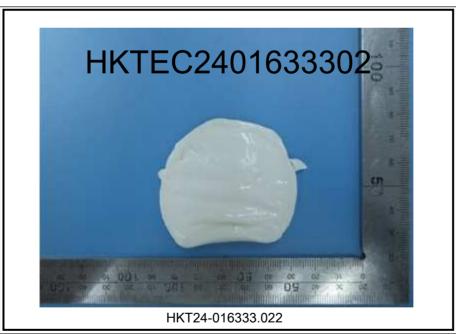


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