

Test Report No.: NGBEC23001425106 **Date:** Apr 27, 2023 Page 1 of 11

Client Name: NINGBO GANGBO ELECTRONIC CO., LTD.

Client Address: NO.999, Z HENNAN ROAD, DONGWU, TOWN, YINZHOU DISTRICT, NINGBO CITY,

ZHEJIANG PROVINCE

Sample Name: KFC (equivalent to TFe0.1/QFe0.1/K-1/C1921/C19210/PMC90) material lead

frame

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

SGS Job No.: NP23-001799 Sample Receiving Date: Apr 19, 2023

Testing Period: Apr 19, 2023 ~ Apr 27, 2023

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 (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Element(s)	See Results
Flame Retardants	See Results
Halogen	See Results
Phthalates	See Results

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

基覃刚

李覃刚

Approved Signatory





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.rems-and-Condition

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249

中国·浙江·宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



Test Report No.: NGBEC23001425106 **Date:** Apr 27, 2023 Page 2 of 11

Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A2	NGB23-0014251-0001.C002	Rose-gold metal lead frame

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 (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+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015,

IEC 62321-6:2015 and IEC62321-8:2017, analysis was performed by ICP-OES, UV-Vis

and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A2
Cadmium(Cd)	100	mg/kg	2	ND
Lead(Pb)	1000	mg/kg	2	6
Mercury(Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	μg/cm²	0.10	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction susues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document only and within the limits to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CN.Doccheck@sgs.com"

or email: CN.Doccheck@sgs.com
No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 t E&E (86–574)89070249 www.sgsgroup.com.

中国·浙江·宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



Test Report No.: NGBEC23001425106 **Date**: Apr 27, 2023 Page 3 of 11

Test Item(s)	Limit	Unit(s)	MDL	A2
Bis-(2-ethylhexyl) Phthalate(DEHP)	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) ▼ = 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 $\mu g/cm^2$). The coating is considered a non-Cr(VI) 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.

Element(s)

Test Method: With reference to US EPA 3050B:1996, analysis was performed by ICP-OES/AAS.

Test Item(s)	Unit(s)	MDL	A2
Arsenic(As)	mg/kg	10	ND
Beryllium(Be)	mg/kg	5	ND
Antimony(Sb)	mg/kg	10	ND
Beryllium Oxide(BeO)◆	mg/kg	15	ND
Antimony Trioxide(Sb ₂ O ₃) ◆	mg/kg	12	ND

Notes:

- (1) ◆Calculated concentration of BeO is based on the identified Be.
- (2) ◆Calculated concentration of Sb₂O₃ is based on the identified Sb.

Flame Retardants

Test Method: With reference to US EPA 3550C:2007 and US EPA 8270D:2014, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A2
Hexabromocyclododecane (HBCDD)	134237-50-6			
	/134237-51-7			
	/134237-52-8	mg/kg	5	ND
	/25637-99-4			
	/3194-55-6			

<u>Halogen</u>

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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions or Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction is sussed defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CND poccheck@sas.com

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249 www.sgsgroup.com.cn 中国・浙江・宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



Test Report No.: NGBEC23001425106 **Date**: Apr 27, 2023 Page 4 of 11

Test Item(s)	Unit(s)	MDL	A2
Fluorine(F)	mg/kg	20	ND
Chlorine(CI)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

Phthalates

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

Test Item(s)	CAS No.	Unit(s)	MDL	A2
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.01	ND
Di-n-Octyl Phthalate(DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.01	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
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	%	0.01	ND
1,2-Benzenedicarboxylic Acid,Di-C7-11- Branched and Linear Alkyl Esters(DHNUP)	68515-42-4	%	0.01	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.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction susues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document only and within the limits to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CN.Doccheck@sgs.com"

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249 www.sgsgroup.com. 中国・浙江・宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com

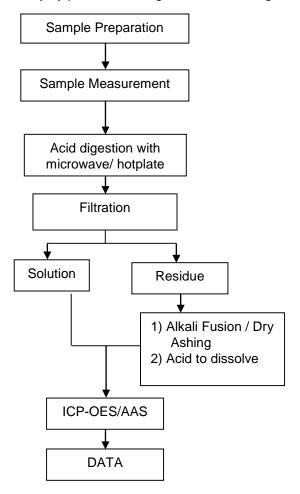


Test Report No.: NGBEC23001425106 **Date:** Apr 27, 2023 Page 5 of 11

ATTACHMENTS

Elements Testing Flow Chart

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





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions or Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction is usued defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document one and the subject of the company and the company and the proposition of the content of accept in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CND poccheck@sas.com

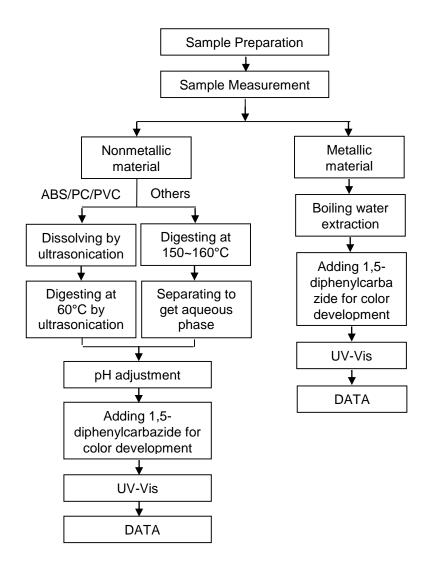
No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 t E&E (86-574)89070249 www.sgsgroup.com. 中国-浙江-宁波高新区凌云路1177号 邮编: 315040 t HL (86-574)89070271 t ML (86-574)89070224 sgs.china@sgs.com



No.: NGBEC23001425106 **Date:** Apr 27, 2023

Page 6 of 11

Hexavalent Chromium (Cr(VI)) Testing Flow Chart





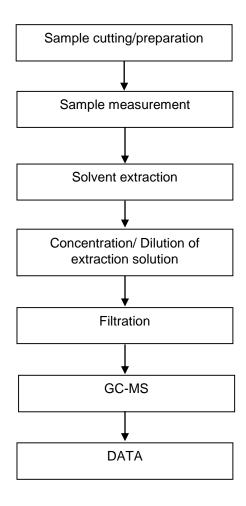
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions or Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction is usued defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document one and the subject of the company and the company and the proposition of the content of accept in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CND poccheck@sas.com

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249 www.sgsgroup.com.c 中国-浙江-宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



PBBs/PBDEs Testing Flow Chart





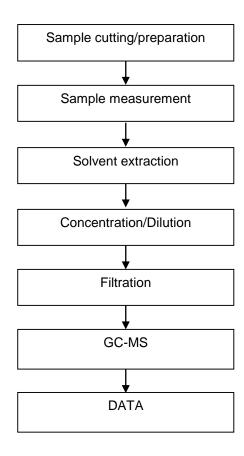
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions or Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction is usued defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document one and the subject of the company and the company and the proposition of the content of accept in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CND poccheck@sas.com

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249 www.sgsgroup.com.cn 中国 - 浙江 - 宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



Phthalates Testing Flow Chart





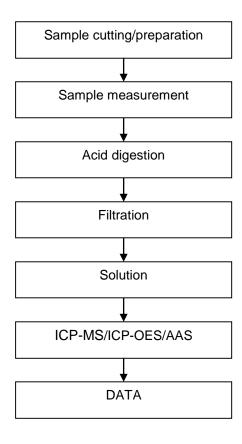
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions or Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction is usued defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document one and the subject of the company and the company and the proposition of the content of accept in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CND poccheck@sas.com

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249 www.sgsgroup.com.cn 中国 - 浙江 - 宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



Elements Testing Flow Chart





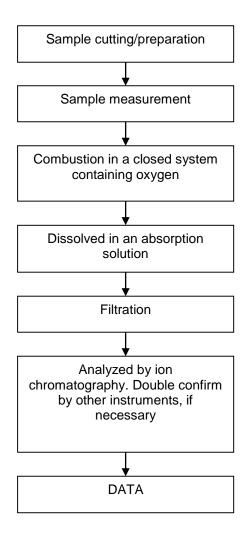
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions or Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction is usued defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document one and the subject of the company and the company and the proposition of the content of accept in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CND poccheck@sas.com

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249 www.sgsgroup.com.cn 中国 - 浙江 - 宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



Halogen Testing Flow Chart





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions or Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction is usued defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document one and the subject of the company and the company and the proposition of the content of accept in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CND poccheck@sas.com

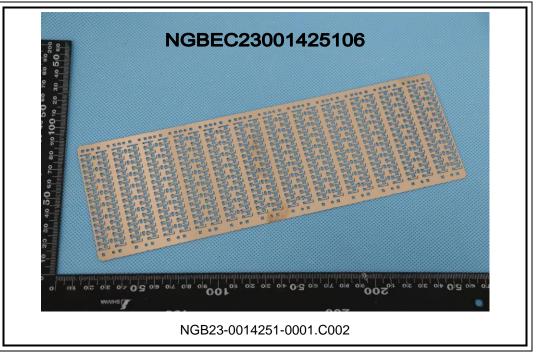
No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249

中国·浙江·宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com



Test Report No.: NGBEC23001425106 **Date**: Apr 27, 2023 Page 11 of 11

Sample Photo:



SGS authenticate the photo on original report only

*** End of Report ***



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com"

No.1177, Lingyun Road, Hi-Tech Zone, Ningbo, Zhejiang, China 315040 tE&E (86-574)89070249 www.sgsgroup.com.cr 中国-浙江-宁波高新区凌云路1177号 邮编: 315040 tHL (86-574)89070271 tML (86-574)89070242 sgs.china@sgs.com