

Test Report

No. TAOEC2306019507

Date: 27 Sep 2023

Page 1 of 14

Client Name : Jiangsu Zhongxin Century Semiconductor Co., Ltd

Client Address : Building b3, Yangfan Entrepreneurship Park, Luotang Street, Jiangyan District, Taizhou City, Jiangsu Province

Sample Name : Bridge/Silicon-controlled Rectifier/MOS/Power Device

Model No. : Bridge Rectifiers

Client Ref. Information : Silicon-controlled Rectifier、MOS、Power Device

GBU/GBP/GBJ/GBL/KBP/KBL/KBJ/KBU/TO-220/ITO220/TO-277A/TO-247/TO-252/TO-263/TO-3P ABS/ABF/MBS/MBF/MBM/TBS/TMB/DB/DBS/DF/DFM/DFS

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

SGS Job No. : SUP23-001266 - QD

Date of Sample Received : 23 Aug 2023

Testing Period : 23 Aug 2023 - 31 Aug 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
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



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.

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

Test Report

No. TAOEC2306019507

Date: 27 Sep 2023

Page 2 of 14

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

Justin

Zhang Bo, Justin
Approved Signatory

scan to see the report



4C89823E



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.

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

Test Result(s) :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	TAO23-060195.001	Grey solid
SN2	TAO23-060195.003	Grey mud
SN3	TAO23-060195.005	Copper metal
SN4	TAO23-060195.007	Black solid
SN5	TAO23-060195.008	Silver metal
SN6	TAO23-060195.010	Silver metal

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)

Test Method : With reference to IEC 62321-5:2013, IEC 62321-4:2013+AMD1:2017, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>	<u>003</u>	<u>007</u>
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1000	mg/kg	2	ND	915379▲	ND
Mercury (Hg)	1000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND	ND	ND
Sum of PBBs	1000	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



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.

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

Test Report

No. TAOEC2306019507

Date: 27 Sep 2023

Page 4 of 14

Test Item(s)	Limit	Unit	MDL	001	003	007
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1000	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
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND	ND	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND	ND	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	ND	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.
- (4)▲According to the declaration from the client, Lead (Pb) in No.003 is exempted by EU RoHS directive 2011/65/EU based on [ANNEX III 7(a)]: Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

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

Test Item(s)	Limit	Unit	MDL	005	008	010
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1000	mg/kg	2	4	32	ND
Mercury (Hg)	1000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm ²	0.10	ND	ND	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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.
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

Test Report

No. TAOEC2306019507

Date: 27 Sep 2023

Page 5 of 14

Test Item(s)	Limit	Unit	MDL	005	008	010
Sum of PBBs	1000	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	1000	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)	1000	mg/kg	50	ND	ND	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND	ND	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND	ND	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND	ND	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 µg/cm²). The coating is considered a non-CrVI based coating
 - c. The result between 0.10 µg/cm² and 0.13 µg/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.

- (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,



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.

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

from 22 July 2021.

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.

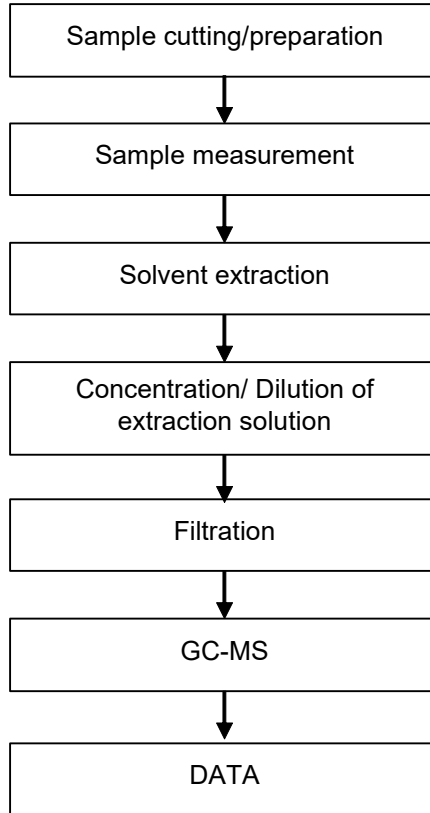


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction 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.

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

ATTACHMENTS

PBBs/PBDEs Testing Flow Chart

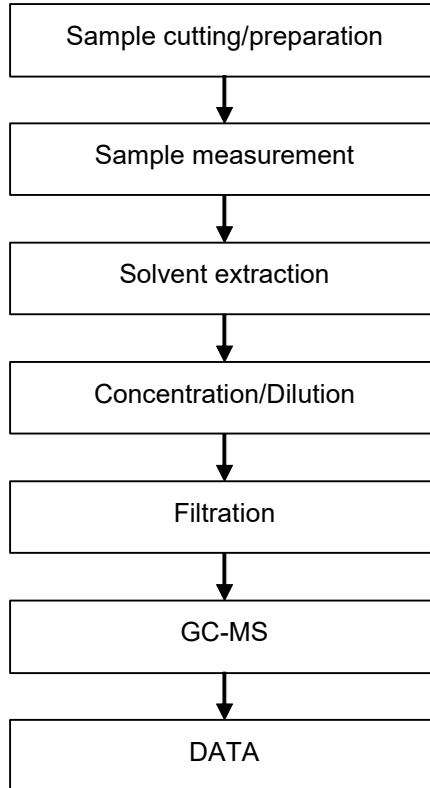


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction 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.

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

ATTACHMENTS

Phthalates Testing Flow Chart

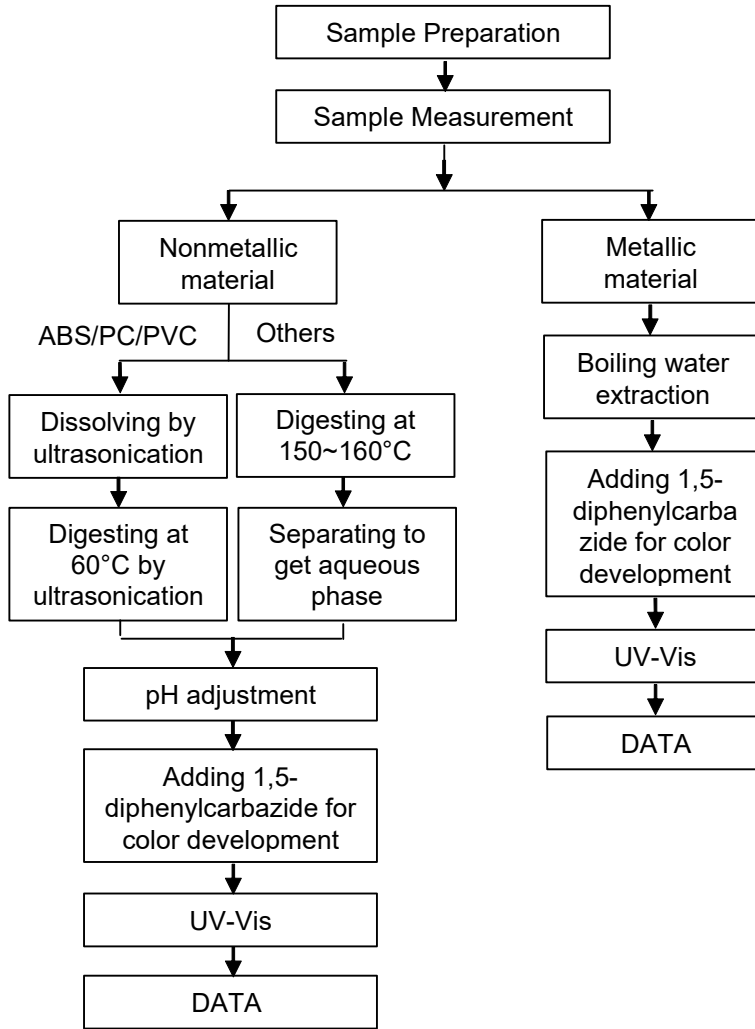


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction 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.

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

ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



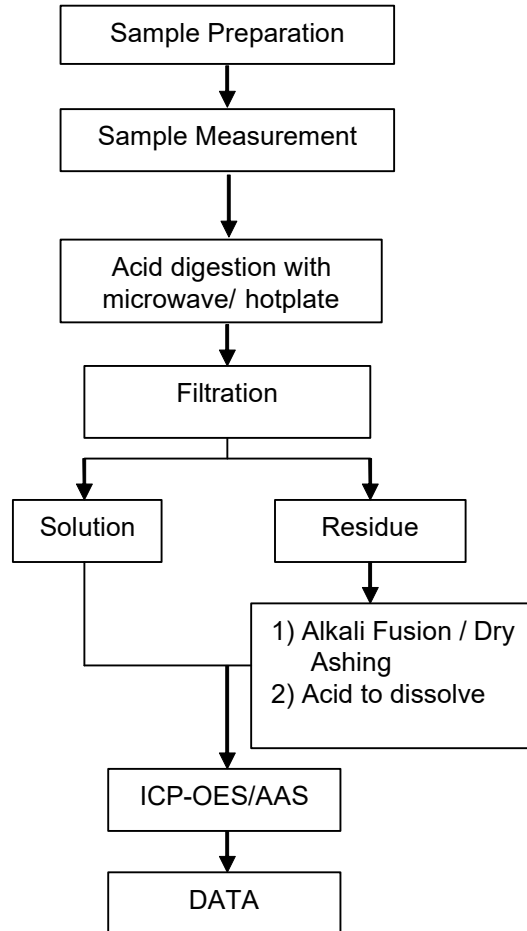
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction 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.

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

ATTACHMENTS

Elements (IEC62321) Testing Flow Chart

1) 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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.

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

Sample photo:



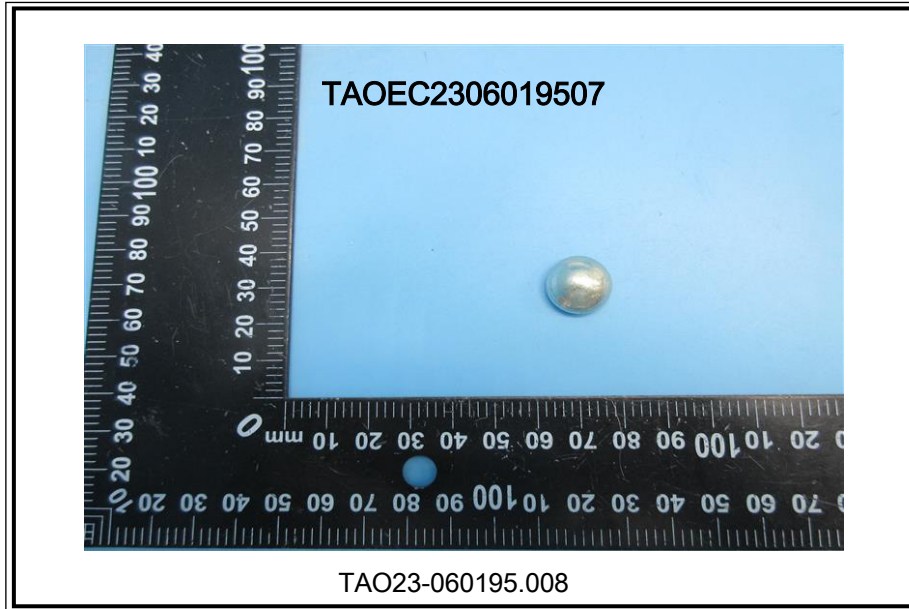
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction 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.

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



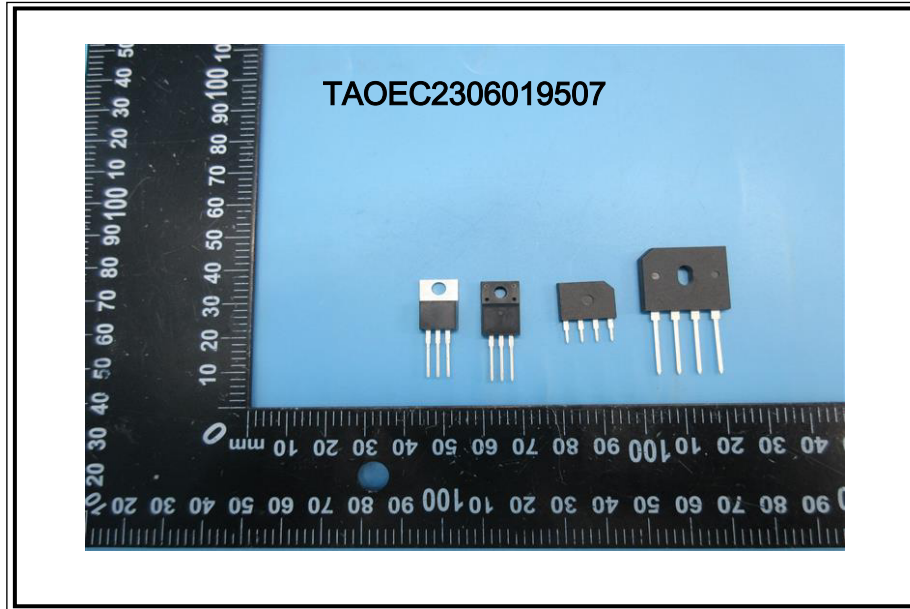
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction 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.

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



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.

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



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 <https://www.sgs.com/en/Terms-and-Conditions>. 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.

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