Test Report

No. : KA/2020/42002 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

The following sample(s) was/were submitted and identified by/on behalf of the applicant as :

Sample Submitted By	:	NITTO DENKO CORPORATION
Sample Description	:	MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR
Style/Item No.	:	NT-8500 SERIES
Sample Receiving Date	:	2020/04/28
Testing Period	:	2020/04/28 to 2020/05/04

==========

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.

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

Ray Chang Ph.D. / Manager -
Signed for and on behalf of
SGS Taiwan Limited
Chemical Laboratory-Kaohsiung

PIN CODE: 03DC8DE4

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Result(s)

PART NAME No.1 : WHITE MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR

Test Item(s)	Unit	Method	MDL	Result No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-OES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-OES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013+ AMD1:2017 and performed by ICP-OES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321-7-2:2017 and performed by UV-VIS.	8	n.d.
Sum of PBBs	mg/kg	With reference to IEC 62321-6:2015 and performed by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
Sum of PBDEs	mg/kg	With reference to IEC 62321-6:2015 and performed by GC/MS.	-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Note：

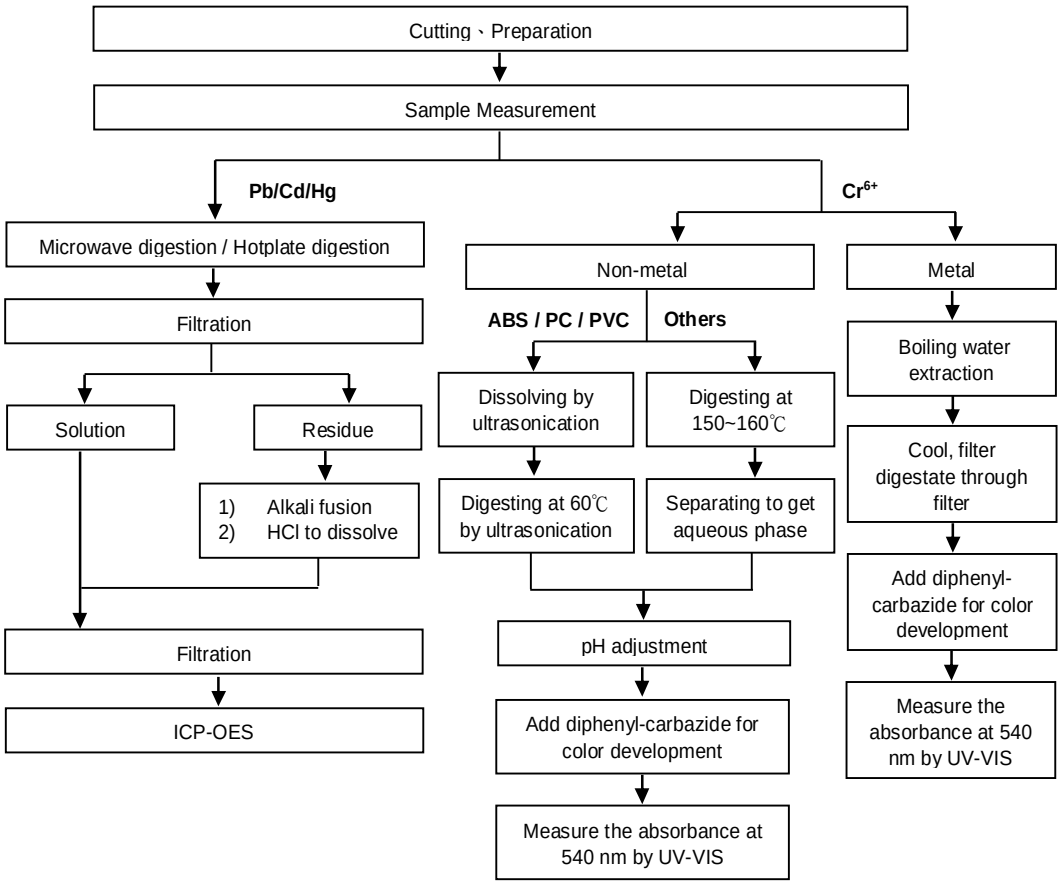
1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Analytical flow chart of Heavy Metal

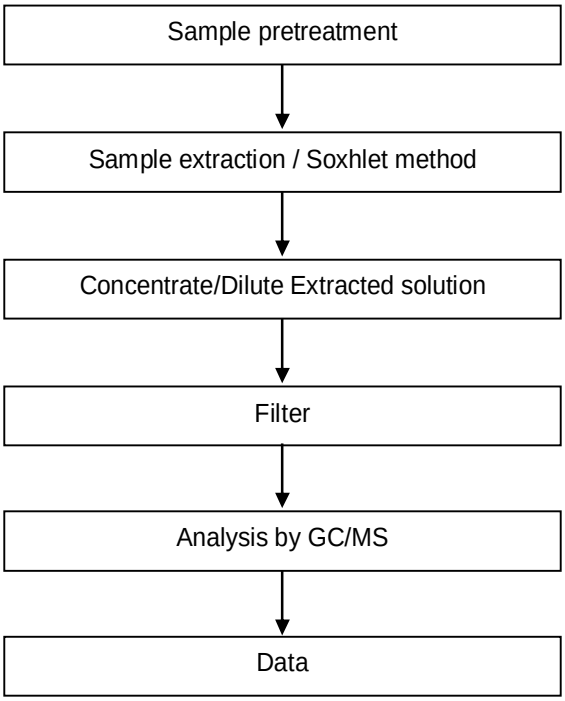
These samples were dissolved totally by pre-conditioning method according to below flow chart.（Cr^{6+} test method excluded）



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

PBB/PBDE analytical FLOW CHART



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

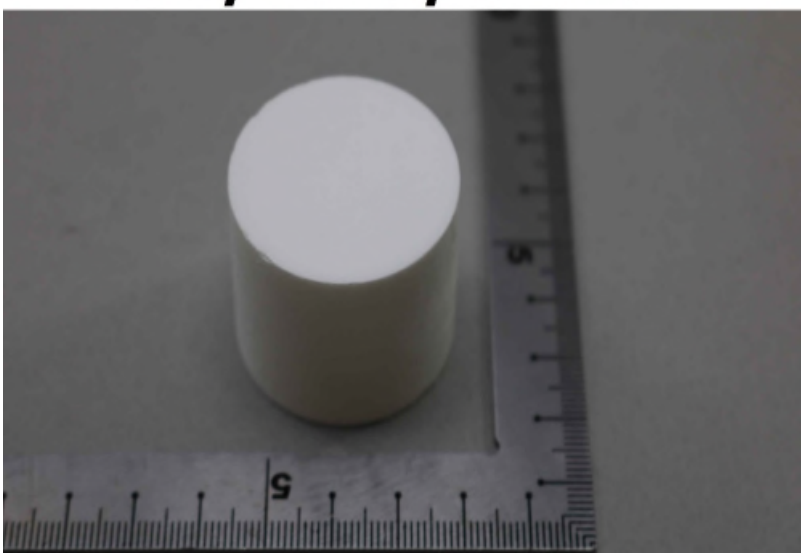
Test Report

No. : KA/2020/42002 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

KA/2020/42002



** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 | No. 61, Kai-Fa Road, Nanzih Export Processing Zone , Kaohsiung, Taiwan / 高雄市楠梓加工出口區開發路61號
t+886 (07) 3012121 f+886 (07) 3010867 www.sgs.com.tw

Member of the SGS Group

Test Report

No. : KA/2020/51062 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

The following sample(s) was/were submitted and identified by/on behalf of the client as :

Sample Submitted By	:	NITTO DENKO CORPORATION
Sample Description	:	MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR
Style/Item No.	:	NT-8500 SERIES
Sample Receiving Date	:	2020/05/11
Testing Period	:	2020/05/11 to 2020/05/12

==========

Test Requested	:	As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample(s).
Test Result(s)	:	Please refer to next page(s).

Ray Chang

Ray Chang Ph.D. / Manager -
Signed for and on behalf of
SGS Taiwan Limited
Chemical Laboratory-Kaohsiung

SGS TAIWAN LTD

PIN CODE: 36AD61D9

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Result(s)

PART NAME NO.1 : WHITE MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR

Test Item (s)	Unit	Method	MDL	Result
				No.1
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2016. Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg	With reference to BS EN 14582:2016. Analysis was performed by IC.	50	602
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	With reference to BS EN 14582:2016. Analysis was performed by IC.	50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg	With reference to BS EN 14582:2016. Analysis was performed by IC.	50	n.d.

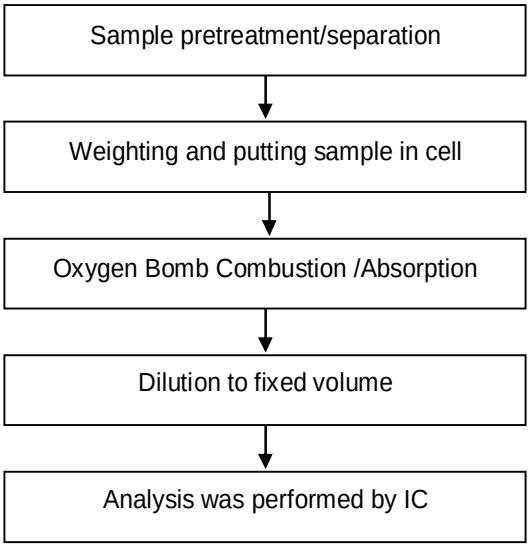
Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Analytical flow chart of Halogen



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

Test Report

No. : KA/2020/42018 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

The following sample(s) was/were submitted and identified by/on behalf of the client as :

Sample Submitted By	:	NITTO DENKO CORPORATION
Sample Description	:	MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR
Style/Item No.	:	NT-8500 SERIES
Sample Receiving Date	:	2020/04/28
Testing Period	:	2020/04/28 to 2020/05/04

==========

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

Ray Chang Ph.D. / Manager -
Signed for and on behalf of
SGS Taiwan Limited
Chemical Laboratory-Kaohsiung

PIN CODE: F93D26C3

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

Test Report

No. : KA/2020/42018 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Result(s)

PART NAME NO.1 : WHITE MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR

Test Item (s)	Unit	Method	MDL	Result
				No.1
Antimony (Sb)	mg/kg	With reference to US EPA 3052: 1996. Analysis was performed by ICP-OES.	2	n.d.

Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

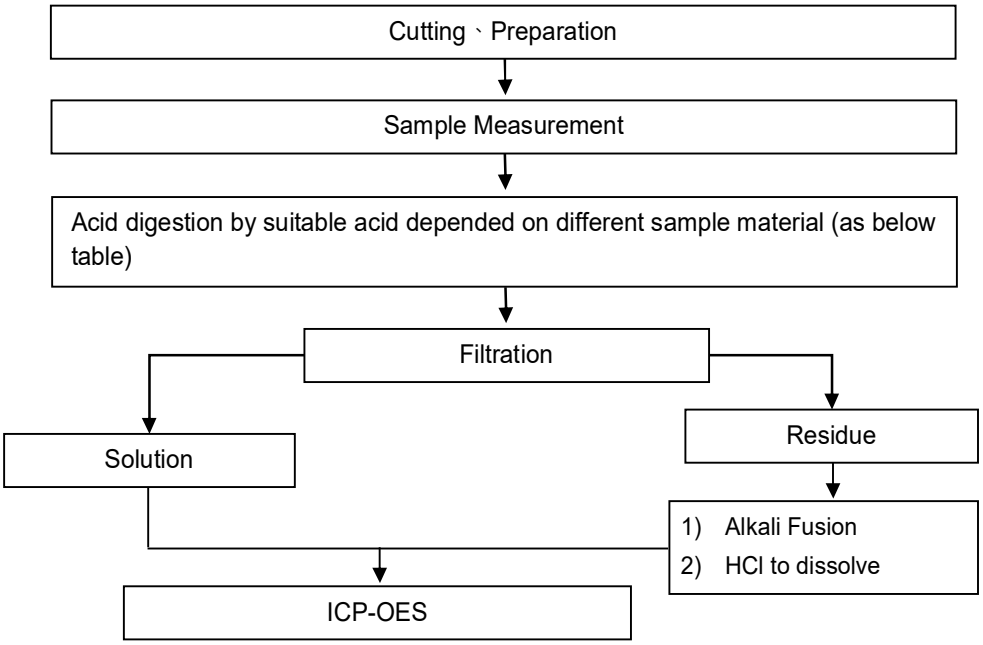
SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 | No. 61, Kai-Fa Road, Nanzih Export Processing Zone , Kaohsiung, Taiwan / 高雄市楠梓加工出口區開發路61號
t+886 (07) 3012121 f+886 (07) 3010867 www.sgs.com.tw

Member of the SGS Group

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Flow Chart of digestion for the elements analysis performed by ICP-OES

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



Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Any acid to total digestion

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

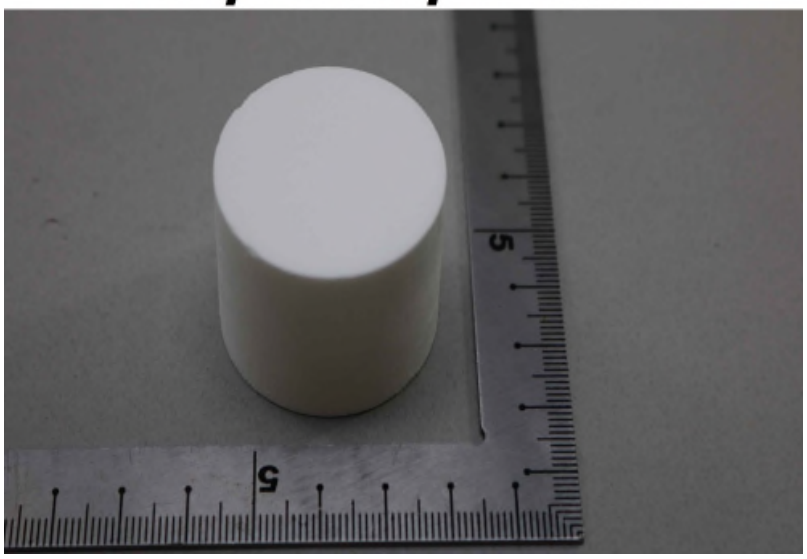
Test Report

No. : KA/2020/42018 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

KA/2020/42018



** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 | No. 61, Kai-Fa Road, Nanzih Export Processing Zone , Kaohsiung, Taiwan / 高雄市楠梓加工出口區開發路61號
t+886 (07) 3012121 f+886 (07) 3010867 www.sgs.com.tw

Member of the SGS Group

Test Report

No. : KA/2020/42026 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

The following sample(s) was/were submitted and identified by/on behalf of the client as :

Sample Submitted By	:	NITTO DENKO CORPORATION
Sample Description	:	MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR
Style/Item No.	:	NT-8500 SERIES
Sample Receiving Date	:	2020/04/28
Testing Period	:	2020/04/28 to 2020/05/04

==========

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

Ray Chang Ph.D. / Manager -
Signed for and on behalf of
SGS Taiwan Limited
Chemical Laboratory-Kaohsiung

PIN CODE: 5AEC83AA

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

Test Report

No. : KA/2020/42026 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Result(s)

PART NAME NO.1 : WHITE MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR

Test Item (s)	Unit	Method	MDL	Result
				No.1
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β- HBCDD, γ- HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	With reference to IEC 62321: 2008. Analysis was performed by GC/MS.	5	n.d.

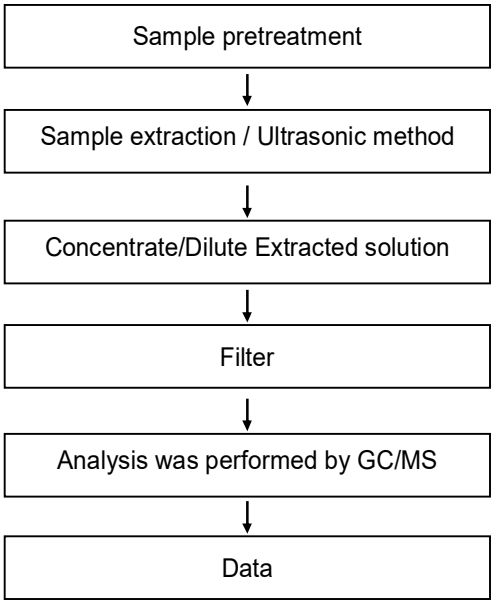
Note：

1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

HBCDD analytical flow chart



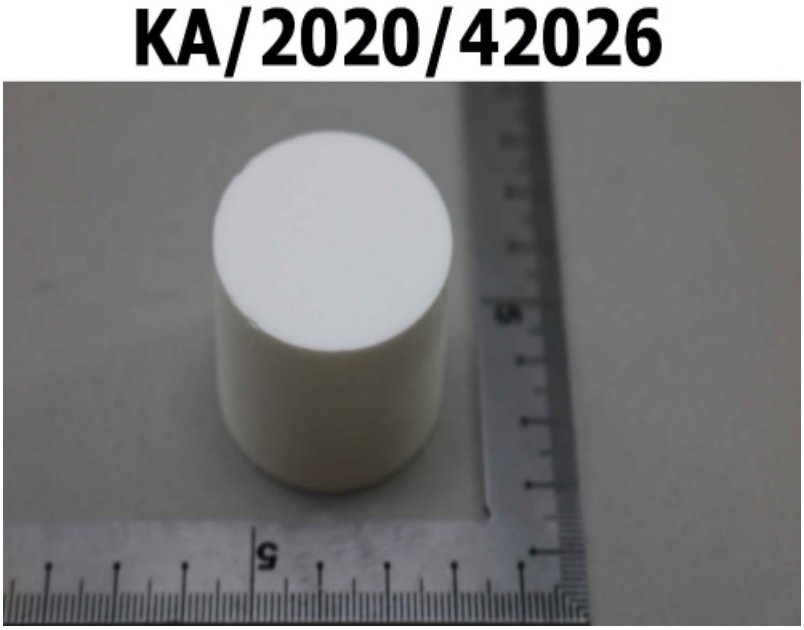
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

Test Report

No. : KA/2020/42026 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***



** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 | No. 61, Kai-Fa Road, Nanzih Export Processing Zone , Kaohsiung, Taiwan / 高雄市楠梓加工出口區開發路61號
t+886 (07) 3012121 f+886 (07) 3010867 www.sgs.com.tw

Member of the SGS Group

Test Report

No. : KA/2020/42034 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

The following sample(s) was/were submitted and identified by/on behalf of the client as :

Sample Submitted By	:	NITTO DENKO CORPORATION
Sample Description	:	MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR
Style/Item No.	:	NT-8500 SERIES
Sample Receiving Date	:	2020/04/28
Testing Period	:	2020/04/28 to 2020/05/04

==========

Test Requested : (1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine DBP, BBP, DEHP, DIBP contents in the submitted sample(s).

(2) Please refer to next pages for the other item(s).

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

Ray Chang Ph.D. / Manager -
Signed for and on behalf of
SGS Taiwan Limited
Chemical Laboratory-Kaohsiung

PIN CODE: 6C0789EE

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

Test Report

No. : KA/2020/42034 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Result(s)

PART NAME NO.1 : WHITE MOLDING COMPOUND FOR OPTICAL SEMICONDUCTOR

Test Item (s)	Unit	Method	MDL	Result
				No.1
Phthalates				
BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg	With reference to IEC 62321-8:2017. Analysis was performed by GC/MS.	50	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n.d.
DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	mg/kg		50	n.d.
DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	mg/kg		50	n.d.
DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	mg/kg		50	n.d.
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg		50	n.d.

Note：

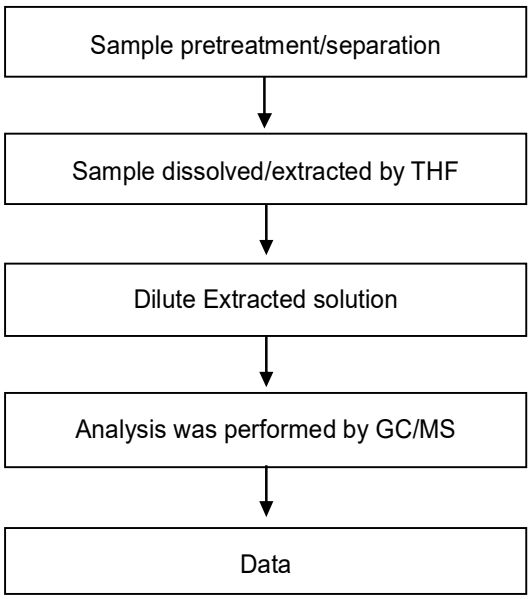
1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Analytical flow chart of phthalate content

【Test method: IEC 62321-8】



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

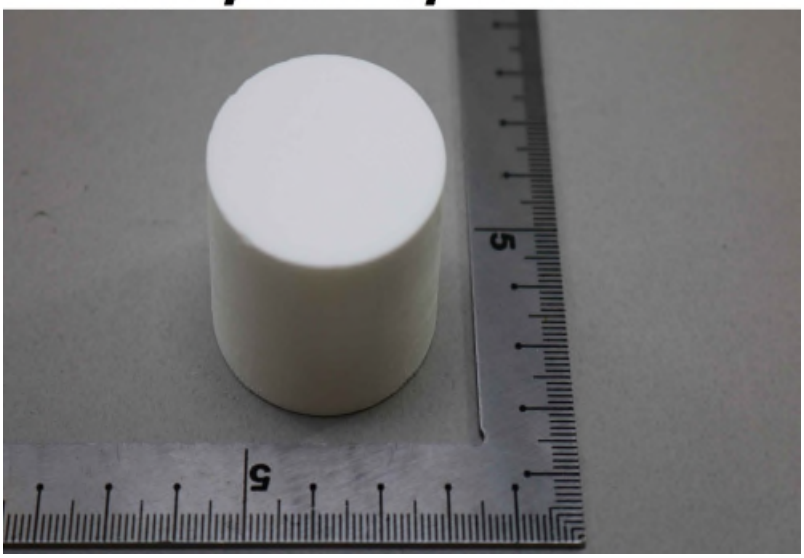
Test Report

No. : KA/2020/42034 Date : 2020/05/14

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

KA/2020/42034



** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://twap.sgs.com/Terms-and-Conditions.html and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://twap.sgs.com/Terms-and-Conditions.html . 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 instruction, 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.

SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 | No. 61, Kai-Fa Road, Nanzih Export Processing Zone , Kaohsiung, Taiwan / 高雄市楠梓加工出口區開發路61號
t+886 (07) 3012121 f+886 (07) 3010867 www.sgs.com.tw

Member of the SGS Group