

## Test Report

No.: ETR23806103

Date: 06-Sep-2023

Page: 1 of 12

NORDIC SEMICONDUCTOR ASA  
OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

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

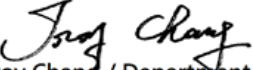
Sample Submitted By : NORDIC SEMICONDUCTOR ASA  
Sample Name : INTEGRATED CIRCUITS  
Style/Item No. : nPM1300-QEAA CA0  
Buyer/Order No. : PO-0022844

-----  
Sample Receiving Date : 30-Aug-2023  
Testing Period : 30-Aug-2023 to 06-Sep-2023

**Test Requested** : (1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).  
(2) Please refer to next pages for the other item(s).

**Test Results** : Please refer to following pages.

**Conclusion** : (1) Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

  
Troy Chang / Department Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory - Taipei



PIN CODE: 4BABC4C4

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.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.: ETR23806103

Date: 06-Sep-2023

Page: 2 of 12

NORDIC SEMICONDUCTOR ASA  
 OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

## Test Part Description

No.1 : INTEGRATED CIRCUITS

## Test Result(s)

| Test Item(s)               | Method  | Unit  | MDL  | Result | Limit |
|----------------------------|---|-------|------|--------|-------|
|                            |   |       |      | No.1   |       |
| Cadmium (Cd)               | With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.             | mg/kg | 2    | n.d.   | 100   |
| Lead (Pb)                  | With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.             | mg/kg | 2    | 5.67   | 1000  |
| Mercury (Hg)               | With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES. | mg/kg | 2    | n.d.   | 1000  |
| Hexavalent Chromium Cr(VI) | With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.            | mg/kg | 8    | n.d.   | 1000  |
| Monobromobiphenyl          | With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.               | mg/kg | 5    | n.d.   | -     |
| Dibromobiphenyl            |   | mg/kg | 5    | n.d.   | -     |
| Tribromobiphenyl           |   | mg/kg | 5    | n.d.   | -     |
| Tetrabromobiphenyl         |   | mg/kg | 5    | n.d.   | -     |
| Pentabromobiphenyl         |   | mg/kg | 5    | n.d.   | -     |
| Hexabromobiphenyl          |   | mg/kg | 5    | n.d.   | -     |
| Heptabromobiphenyl         |   | mg/kg | 5    | n.d.   | -     |
| Octabromobiphenyl          |   | mg/kg | 5    | n.d.   | -     |
| Nonabromobiphenyl          |   | mg/kg | 5    | n.d.   | -     |
| Decabromobiphenyl          |   | mg/kg | 5    | n.d.   | -     |
| <b>Sum of PBBs</b>         |   | mg/kg | -    | n.d.   | 1000  |
| Monobromodiphenyl ether    |   | mg/kg | 5    | n.d.   | -     |
| Dibromodiphenyl ether      |   | mg/kg | 5    | n.d.   | -     |
| Tribromodiphenyl ether     |   | mg/kg | 5    | n.d.   | -     |
| Tetrabromodiphenyl ether   |   | mg/kg | 5    | n.d.   | -     |
| Pentabromodiphenyl ether   |   | mg/kg | 5    | n.d.   | -     |
| Hexabromodiphenyl ether    |   | mg/kg | 5    | n.d.   | -     |
| Heptabromodiphenyl ether   |   | mg/kg | 5    | n.d.   | -     |
| Octabromodiphenyl ether    |   | mg/kg | 5    | n.d.   | -     |
| Nonabromodiphenyl ether    |   | mg/kg | 5    | n.d.   | -     |
| Decabromodiphenyl ether    | mg/kg   | 5     | n.d. | -      |       |
| <b>Sum of PBDEs</b>        | mg/kg   | -     | n.d. | 1000   |       |

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.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.: ETR23806103

Date: 06-Sep-2023

Page: 3 of 12

NORDIC SEMICONDUCTOR ASA  
 OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

| Test Item(s)   | Method  | Unit  | MDL  | Result | Limit |
|--|---|-------|------|--------|-------|
|  |   |       |      | No.1   |       |
| Dibutyl phthalate (DBP)  | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Butyl benzyl phthalate (BBP)   | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Di-(2-ethylhexyl) phthalate (DEHP)   | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)  | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)  | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)  | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Diisobutyl phthalate (DIBP)  | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | 1000  |
| Di-n-pentyl phthalate (DNPP) (CAS No.: 131-18-0)   | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Di-n-hexyl phthalate (DNHP) (CAS No.: 84-75-3)   | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Bis(2-methoxyethyl) phthalate (DMEP) (CAS No.: 117-82-8)   | With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.     | mg/kg | 50   | n.d.   | -     |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ - HBCDD, $\beta$ - HBCDD, $\gamma$ - HBCDD) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)) | With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.     | mg/kg | 20   | n.d.   | -     |
| Fluorine (F) (CAS No.: 14762-94-8)   | With reference to BS EN 14582: 2016, analysis was performed by IC.        | mg/kg | 50   | n.d.   | -     |
| Chlorine (Cl) (CAS No.: 22537-15-1)  | With reference to BS EN 14582: 2016, analysis was performed by IC.        | mg/kg | 50   | n.d.   | -     |
| Bromine (Br) (CAS No.: 10097-32-2)   | With reference to BS EN 14582: 2016, analysis was performed by IC.        | mg/kg | 50   | n.d.   | -     |
| PFOS and its salts (CAS No.: 1763-23-1 and its salts)  | With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS. | mg/kg | 0.01 | n.d.   | -     |
| PFOA and its salts (CAS No.: 335-67-1 and its salts)   |   | mg/kg | 0.01 | 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://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.: ETR23806103

Date: 06-Sep-2023

Page: 4 of 12

NORDIC SEMICONDUCTOR ASA  
OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

| Test Item(s)                        | Method  | Unit  | MDL | Result | Limit |
|-------------------------------------|---|-------|-----|--------|-------|
|                                     |   |       |     | No.1   |       |
| Beryllium (Be) (CAS No.: 7440-41-7) | With reference to US EPA 3052: 1996, analysis was performed by ICP-OES. | mg/kg | 2   | n.d.   | -     |
| Antimony (Sb) (CAS No.: 7440-36-0)  | With reference to US EPA 3052: 1996, analysis was performed by ICP-OES. | mg/kg | 2   | n.d.   | -     |

## Note :

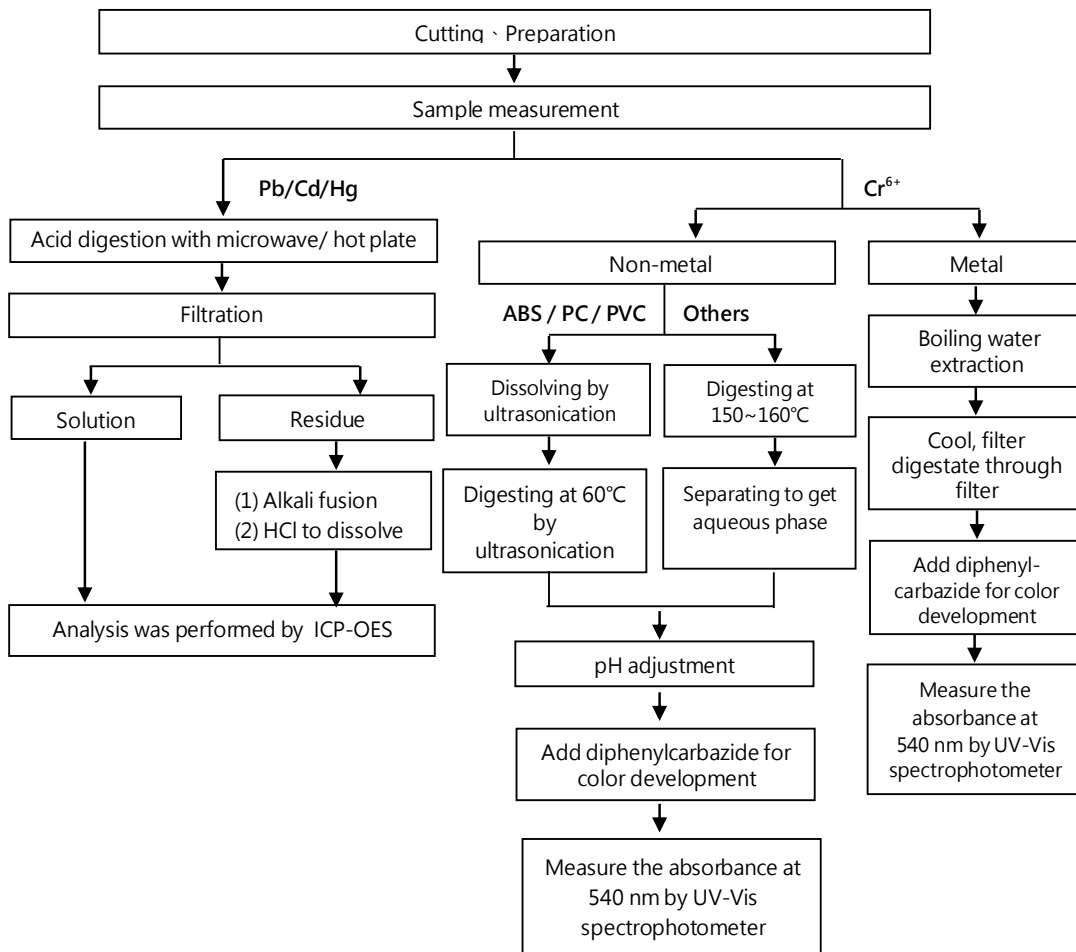
1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected ( Less than MDL)
4. "-" = Not Regulated
5. PFOS and its salts including :  
CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.
6. PFOA and its salts including :  
CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.
7. 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. According to this rule, the judgement of conformity is based on the comparing test results with limits.

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.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.

## Analytical flow chart of heavy metal

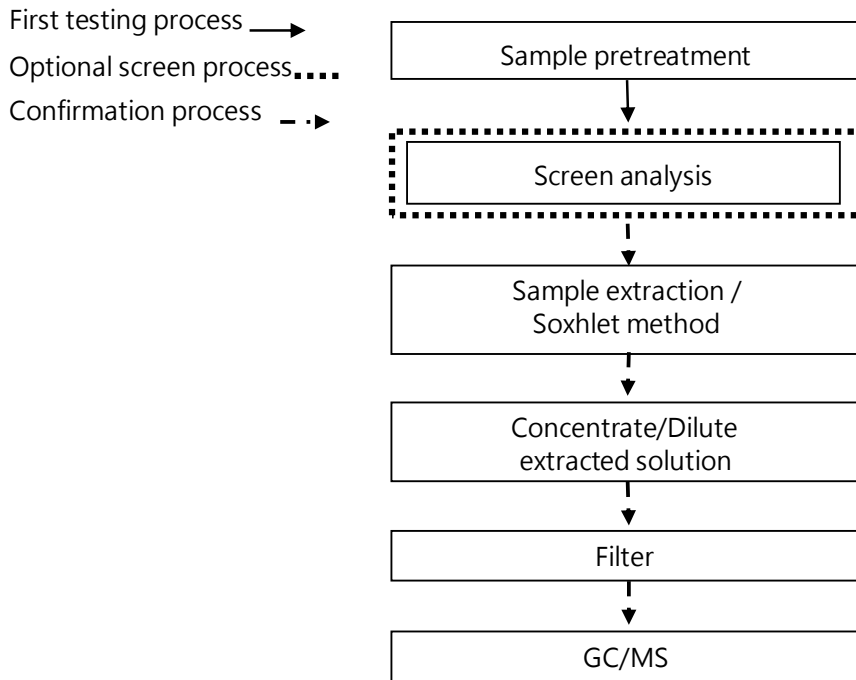
These samples were dissolved totally by pre-conditioning method according to below flow chart.

(Cr<sup>6+</sup> 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://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.

### Analytical flow chart – PBBs / PBDEs

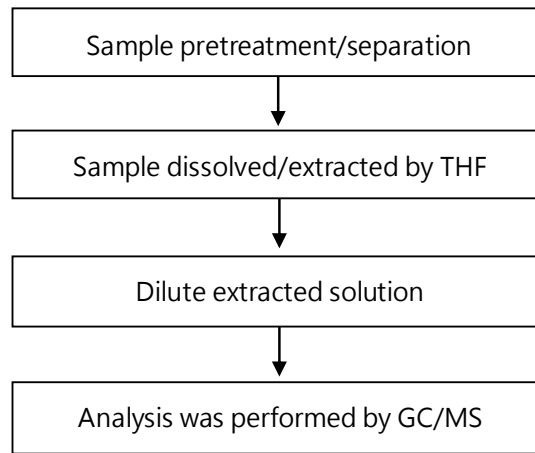


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

NORDIC SEMICONDUCTOR ASA  
OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

### Analytical flow chart - Phthalate

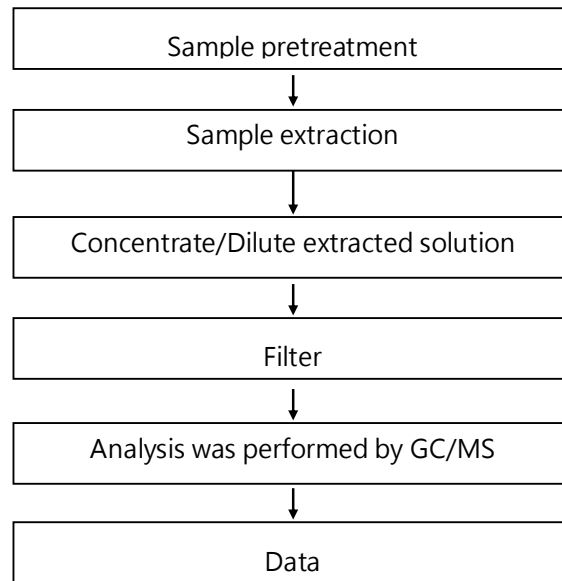
【Test method: IEC 62321-8】



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

NORDIC SEMICONDUCTOR ASA  
OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

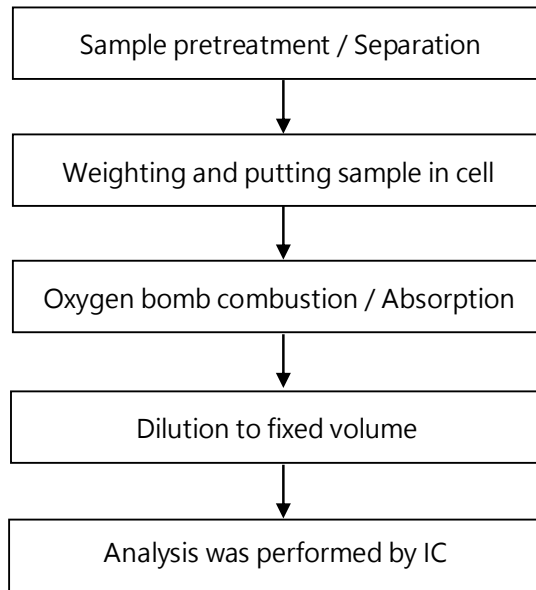
### Analytical flow chart - HBCDD



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.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.



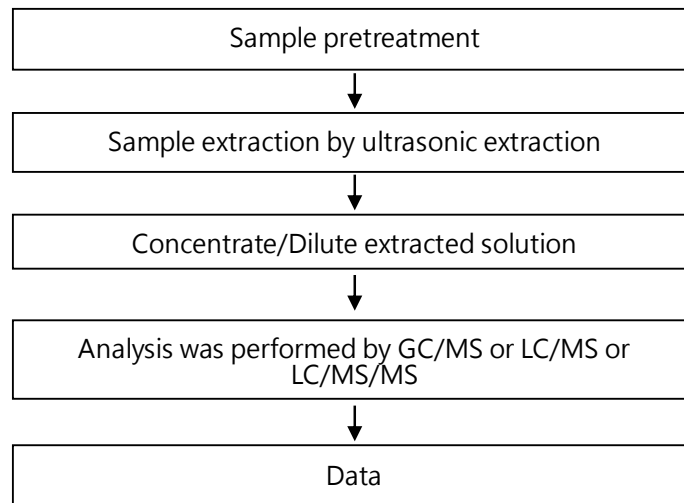
### Analytical flow chart - Halogen



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.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.

NORDIC SEMICONDUCTOR ASA  
OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

### Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)

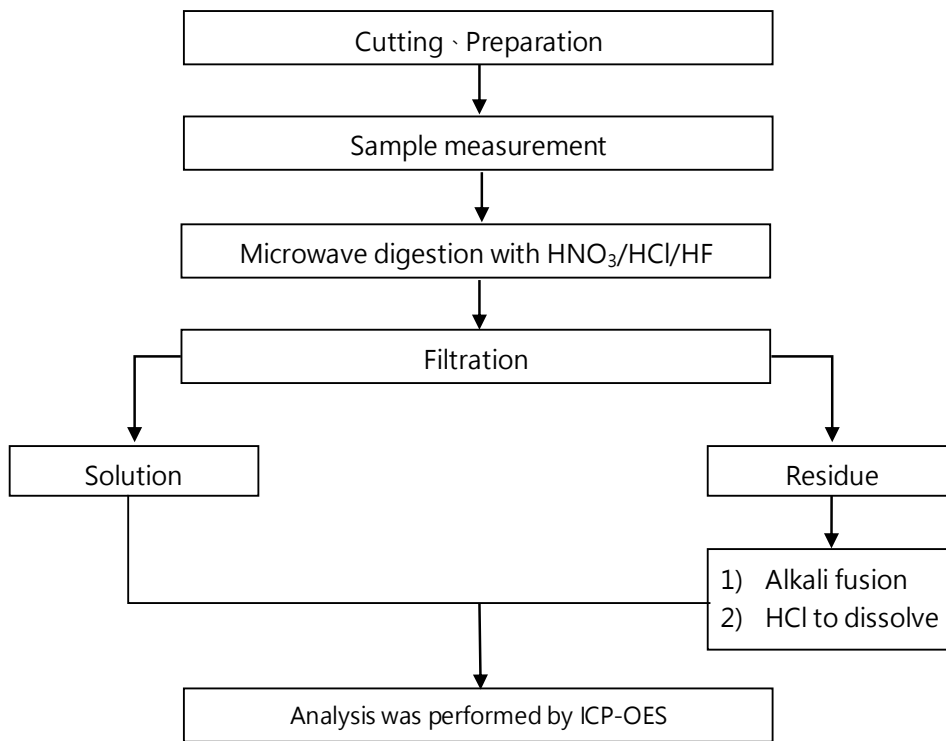


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

### Analytical flow chart of elements (Heavy metal included)

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

【Reference method : US EPA 3051A 、US EPA 3052】



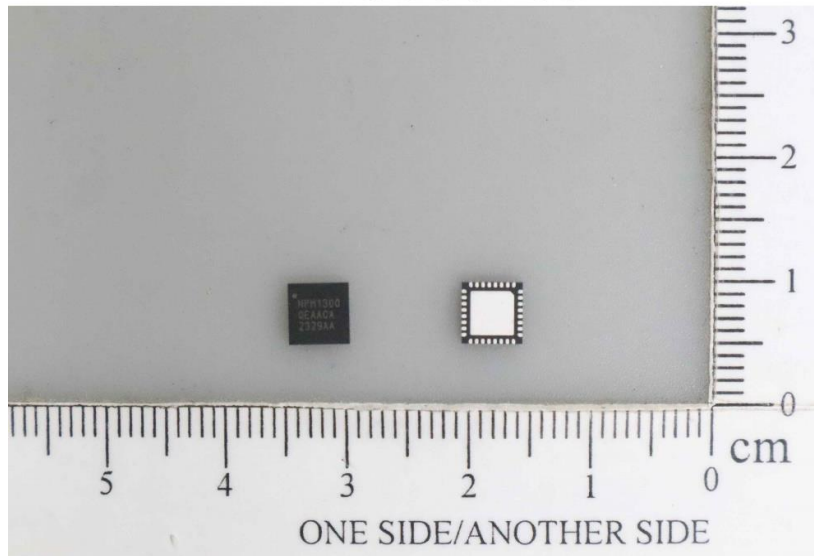
\* US EPA 3051A method does not add HF.

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.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.

NORDIC SEMICONDUCTOR ASA  
OTTO NIELSENS VEG 12, 7052 TRONDHEIM, NORWAY

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

### ETR23806103



\*\* 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://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>. 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.