

Test Report

No. : CE/2011/83933 Date : 2011/08/29 Page : 1 of 11

NORDIC SEMICONDUCTOR ASA
P.O. 436 SKOYEN, KARENSLYST ALLE 5, N-0213 OSLO, NORWAY



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

Sample Description : IC TRANSCEIVER
Style/Item No. : nRF24LE1-F16
Buyer/Order No. : PO-0002471
Other Info : Manufactured at ATP (w/Cu wire)
Sample Receiving Date : 2011/08/22
Testing Period : 2011/08/22 TO 2011/08/29

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



Shin-jyh Chen, Asst. Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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Test Result(s)

PART NAME No.1 : IC TRANSCEIVER

Test Item (s):	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	mg/kg	With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
Antimony (Sb)	mg/kg	With reference to US EPA Method 3050B for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOS Content. Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3540C: 1996 method for PFOA Content. Analysis was performed by LC/MS.	10	n.d.
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.01	n.d.
DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.

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Test Item (s):	Unit	Method	MDL	Result		
				No.1		
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 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					-	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.		
Halogen						
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.		
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)			50	n.d.		
Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.		
Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.		

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Note :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. This report supersedes the previous document bearing the test report number CE/2011/83933 which signed by Chenyu Kung.

PFOS Reference Information : Directive 2006/122/EC

(1) May not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0.005 % by mass.

(2) May not be placed on the market in semi-finished products or articles, or parts thereof, if the concentration of PFOS is equal to or higher than 0.1 % by mass calculated with reference to the mass of structurally or microstructurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is equal to or higher than $1\mu\text{g}/\text{m}^2$ of the coated material.

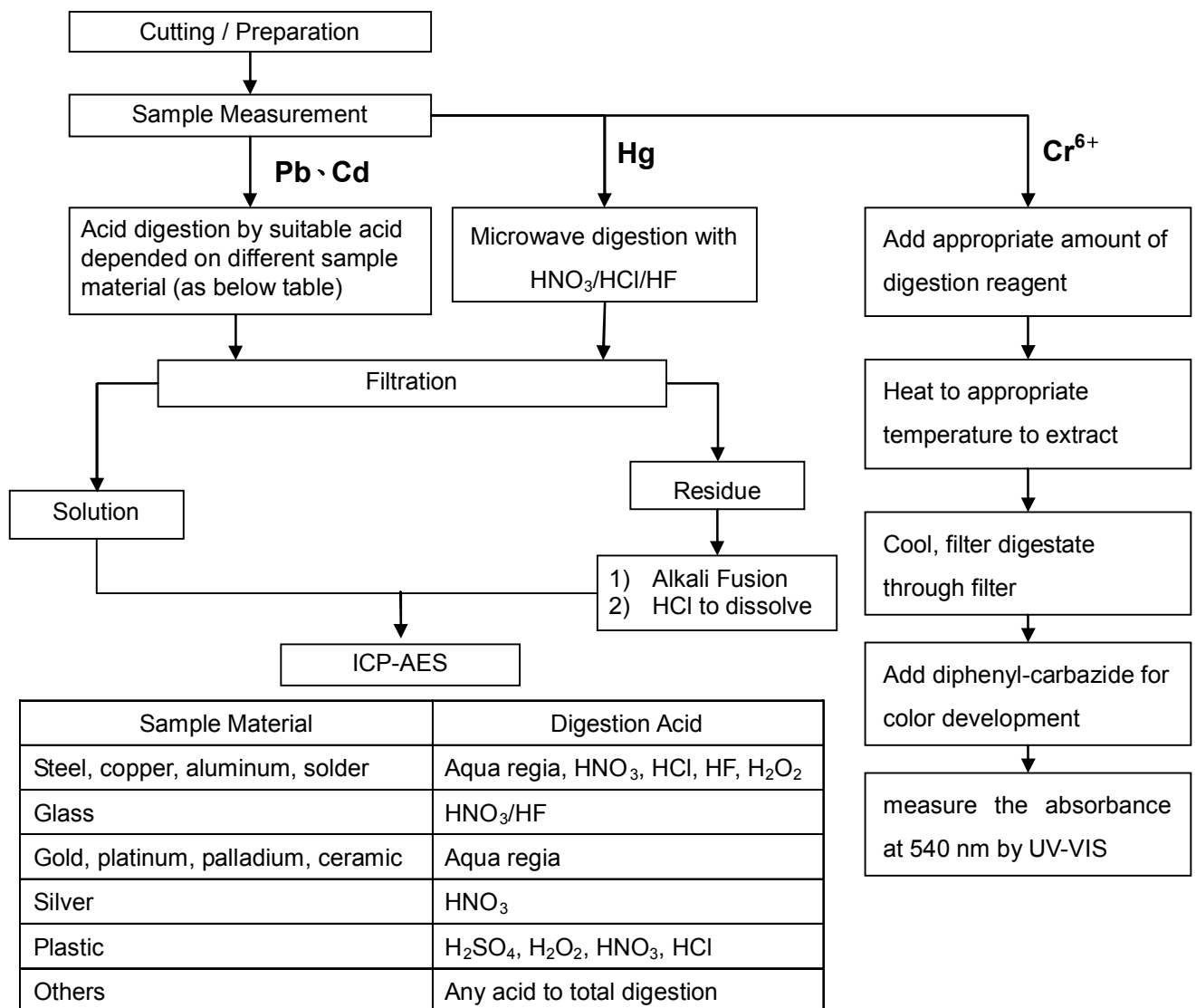
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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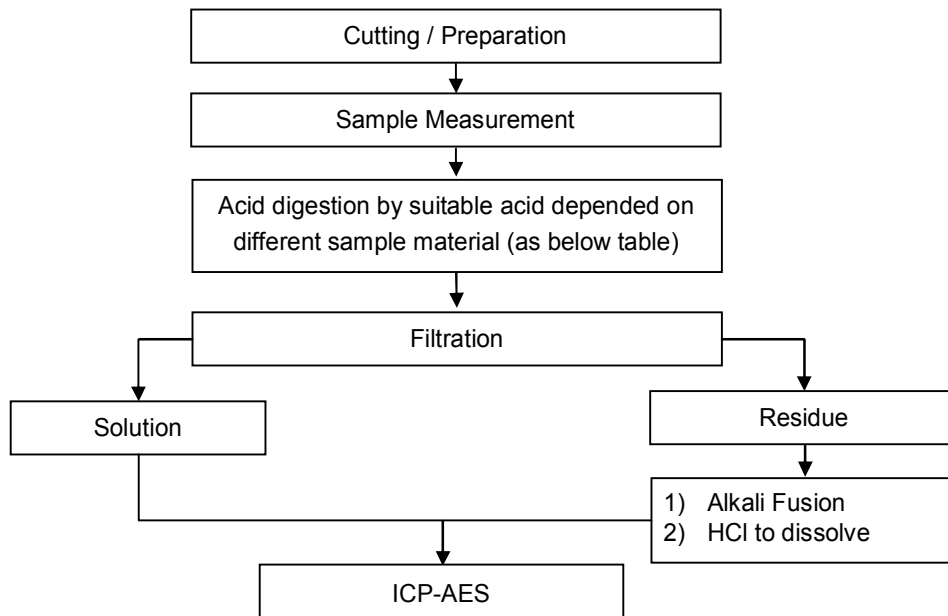
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NORDIC SEMICONDUCTOR ASA
P.O. 436 SKOYEN, KARENSLYST ALLE 5, N-0213 OSLO, NORWAY



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang

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



Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Any acid to total digestion

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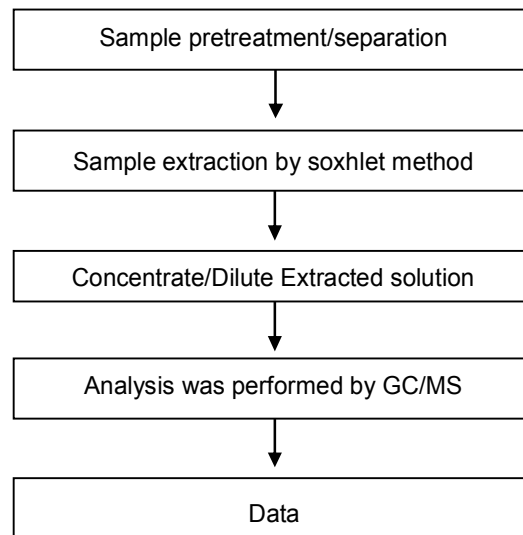
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Analytical flow chart of Soxhlet extraction (GC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

**【Test Items: Phthalate 、 Benzotriazole 、 HBCDD 、 NP 、 DBBT 、
Organic phosphorus compounds 】**



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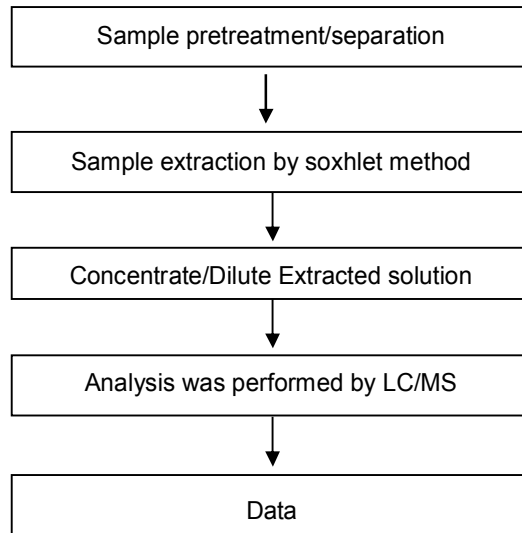
NORDIC SEMICONDUCTOR ASA
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Analytical flow chart of Soxhlet extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

【 Test Items: PFOS/PFOA 、 Benzotriazole 】



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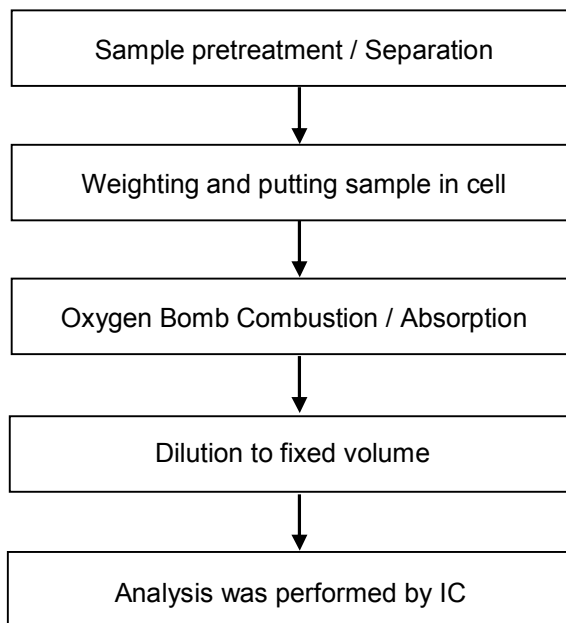
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NORDIC SEMICONDUCTOR ASA
P.O. 436 SKOYEN, KARENSLYST ALLE 5, N-0213 OSLO, NORWAY



Analytical flow chart of halogen content

- 1) Name of the person who made measurement: Rita Chen
- 2) Name of the person in charge of measurement: Troy Chang



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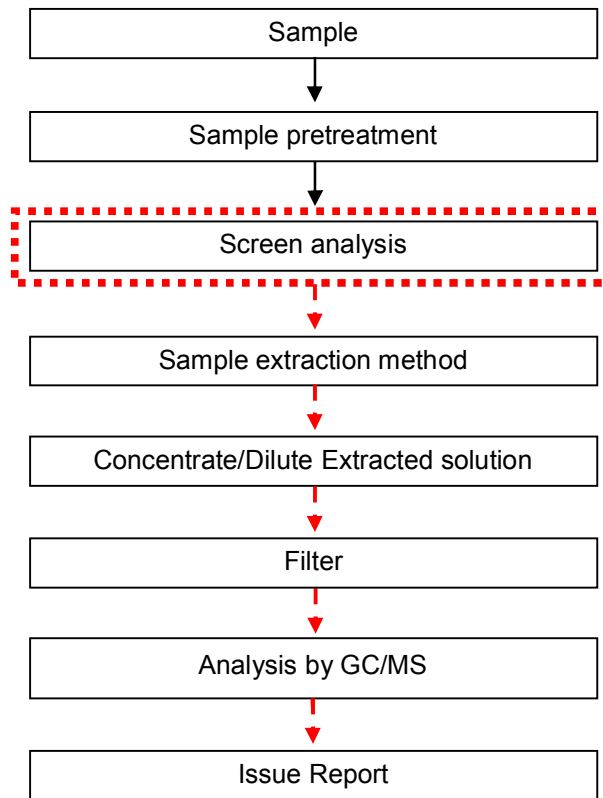


Analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang

【 Test Items: PBB/PBDE, TBBP-A-bis 】

First testing process —> Optional screen process Confirmation process ->



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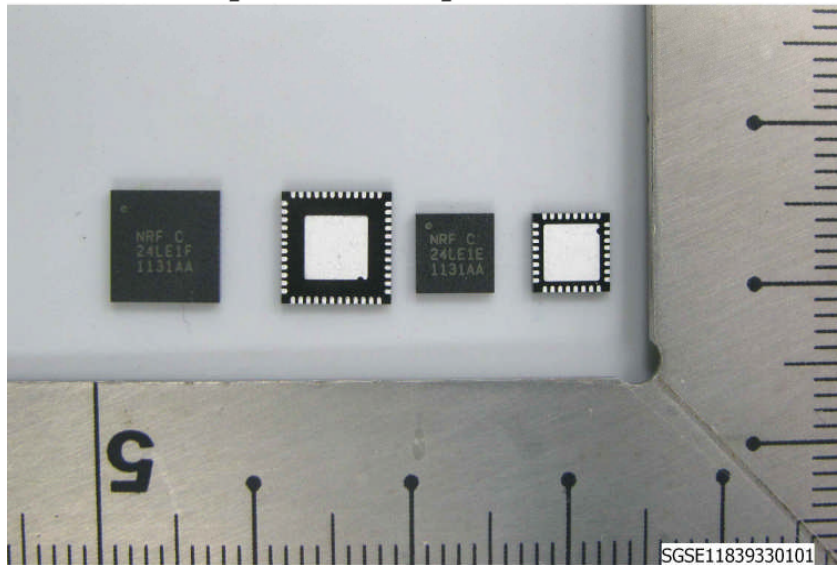
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** End of Report **

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