

Test Report

No. : KE/2018/30377

Date : 2018/03/12

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TAIWAN NANOTECHNOLOGY CORPORATION

NO.292, GONGYEQU 38TH RD., XITUN DISTRICT, TAICHUNG CITY 407, TAIWAN (R.O.C.)

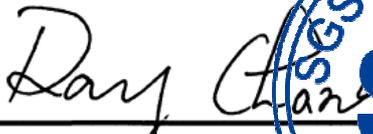
The following sample(s) was/were submitted and identified by/on behalf of the applicant as :

Sample Description : MIX 3 INK
Style/Item No. : (1)UV INK-C, (2)UV-INK-M, (3)UV INK-Y
Material Component : INK
Color : (1)CYAN, (2)MAGENTA, (3)YELLOW
Sample Receiving Date : 2018/03/02
Testing Period : 2018/03/05 TO 2018/03/12
Sample Submitted By : TAIWAN NANOTECHNOLOGY CORPORATION

=====
Test Requested : As specified by client, to test Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).

Test Method : Please refer to following pages.

Test Result(s) : Please refer to following pages.



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

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TAIWAN NANOTECHNOLOGY CORPORATION

NO.292, GONGYEQU 38TH RD., XITUN DISTRICT, TAICHUNG CITY 407, TAIWAN (R.O.C.)

Test Result(s)

PART NAME No.1 : MIX 3 INK

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	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	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.
Sum of PBDEs	mg/kg		With reference to IEC 62321-6: 2015 and performed by GC/MS.	-
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.	

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NO.292, GONGYEQU 38TH RD., XITUN DISTRICT, TAICHUNG CITY 407, TAIWAN (R.O.C.)

Test Item(s)	Unit	Method	MDL	Result
				No.1
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	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.
BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n.d.

Note :

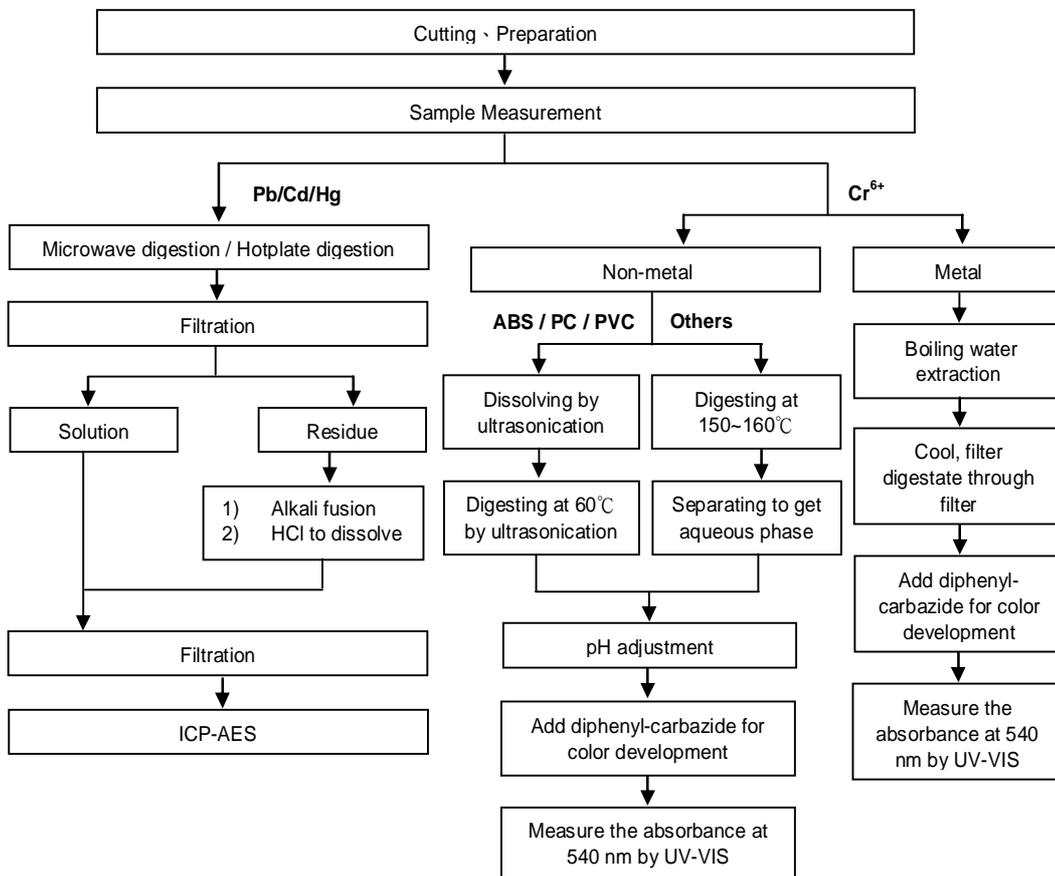
1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated

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Analytical flow chart of Heavy Metal

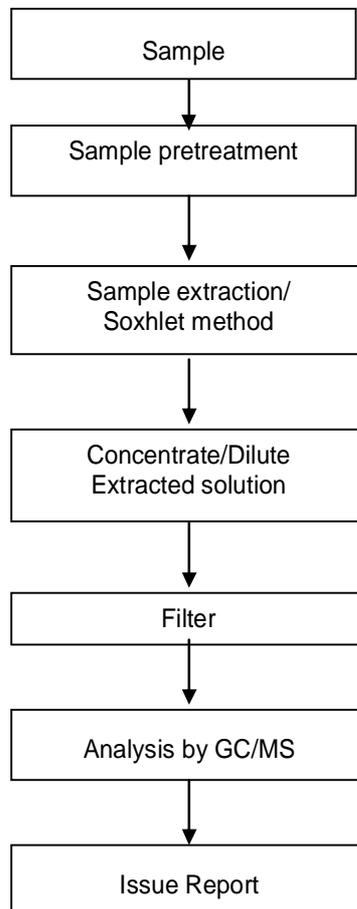
These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)

- Technician : Jony Liu
- Supervisor: Ray Chang



PBB/PBDE analytical FLOW CHART

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

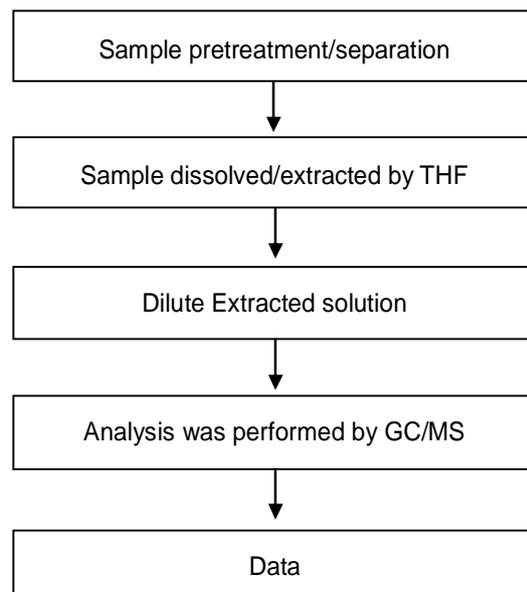


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Analytical flow chart of phthalate content

- Name of the person who made measurement: Dorothy Chen
- Name of the person in charge of measurement: Ray Chang

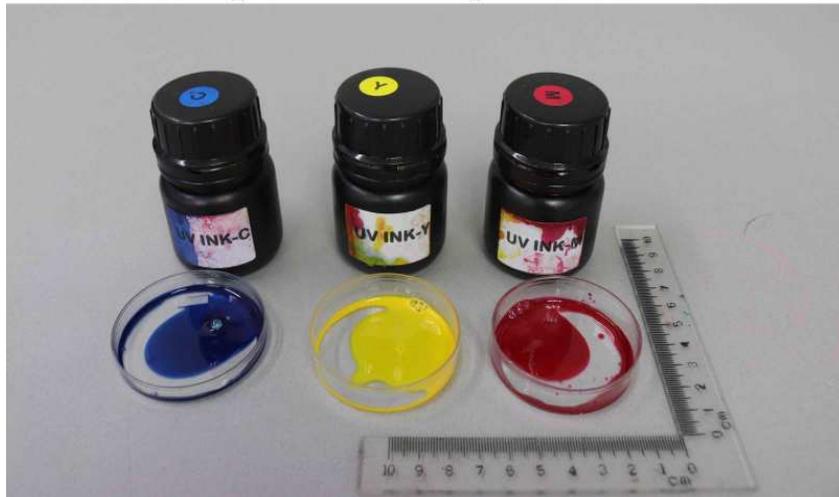
【Test method: IEC 62321-8】



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

KE/2018/30377



** End of Report **

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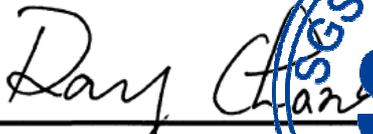
The following sample(s) was/were submitted and identified by/on behalf of the applicant as :

Sample Description : MIX 3 INK
Style/Item No. : (1)UV INK-K, (2)UV-INK-W, (3)UV INK-GL
Material Component : INK
Color : (1)BLACK, (2)WHITE, (3)GLOSS
Sample Receiving Date : 2018/03/02
Testing Period : 2018/03/05 TO 2018/03/12
Sample Submitted By : TAIWAN NANOTECHNOLOGY CORPORATION

Test Requested : As specified by client, to test Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).

Test Method : Please refer to following pages.

Test Result(s) : Please refer to following pages.



Ray Chang Ph.D. Manager - Techn
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TAIWAN NANOTECHNOLOGY CORPORATION

NO.292, GONGYEQU 38TH RD., XITUN DISTRICT, TAICHUNG CITY 407, TAIWAN (R.O.C.)

Test Result(s)

PART NAME No.1 : MIX 3 INK

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
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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.
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Octabromobiphenyl	mg/kg		5	n.d.
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Decabromobiphenyl	mg/kg		5	n.d.
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Monobromodiphenyl ether	mg/kg	5		n.d.
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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.	

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TAIWAN NANOTECHNOLOGY CORPORATION

NO.292, GONGYEQU 38TH RD., XITUN DISTRICT, TAICHUNG CITY 407, TAIWAN (R.O.C.)

Test Item(s)	Unit	Method	MDL	Result
				No.1
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg	With reference to IEC 62321-8:2017. Analysis was performed by GC/MS.	50	n.d.
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BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n.d.
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Note :

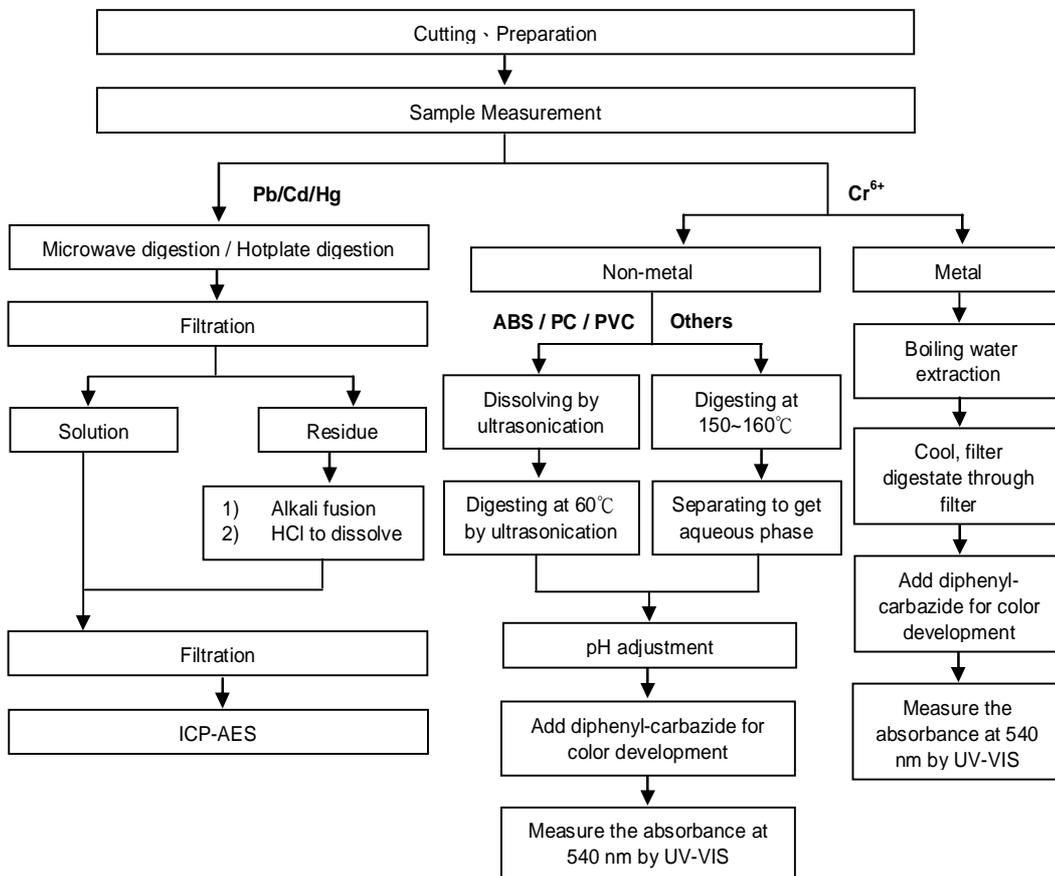
1. mg/kg = ppm ; 0.1wt% = 1000ppm
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Analytical flow chart of Heavy Metal

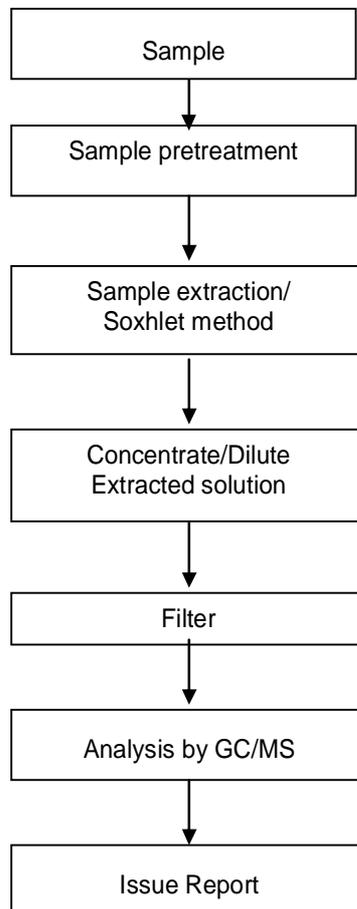
These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)

- Technician : Jony Liu
- Supervisor: Ray Chang



PBB/PBDE analytical FLOW CHART

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

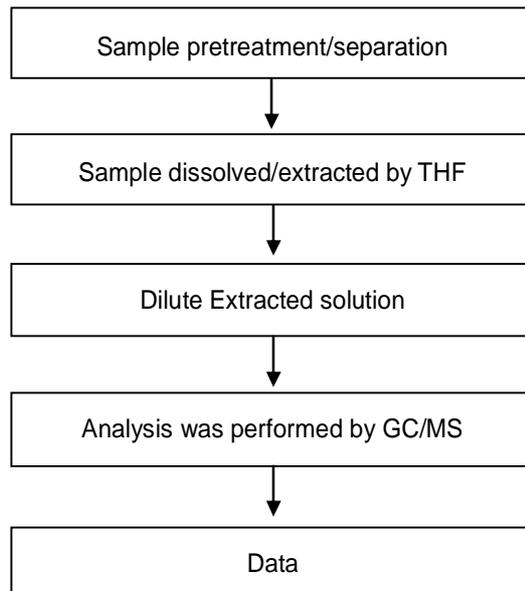


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Analytical flow chart of phthalate content

- Name of the person who made measurement: Dorothy Chen
- Name of the person in charge of measurement: Ray Chang

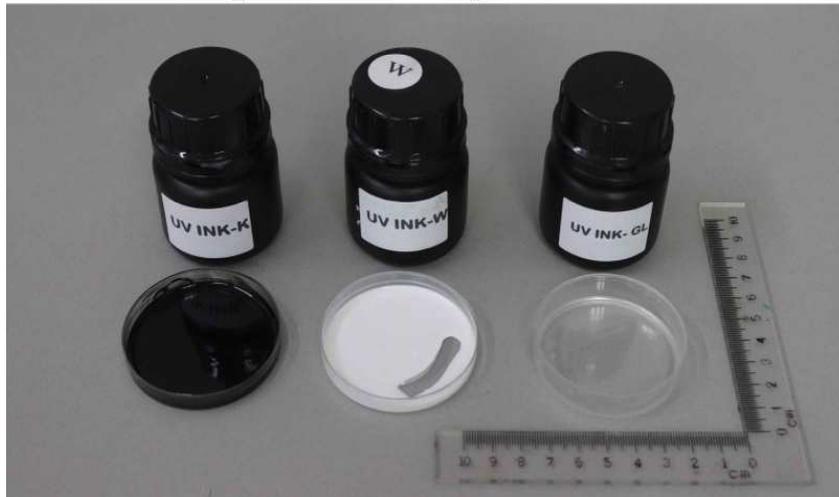
【Test method: IEC 62321-8】



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** End of Report **