

Test Report

No. CTSSA/16247/15 Date

CTS Ref. CTSSA/15/2136/Dr Two

Date: 14/09/2015 Page: 1 of 5

DR TWO MARKING TECHNOLOGY SDN BHD NO. 27, JALAN TK5/42, KINRARA INDUSTRIAL PARK, KMB, JALAN PUCHONG, 47900 PUCHONG, SELANGOR DARUL EHSAN, MALAYSIA

The following merchandise was (were) submitted and identified by the client as:

Sample Description : 70000 – 00030 – Black Ink MEK

Sample Receiving Date : 08/09/2015

Testing Period : 08/09/2015 to 14/09/2015

Test Requested : Selected test(s) as requested by client

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

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

Analysts : Foong Cheng Chee & Shirley Then

SGS (MALAYSIA) SDN. BHD.

TAY SIAM PINE B.Sc.(HONS) AMIC

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Test results:

<u>Test Part Description</u>:

Sample Description : 70000 – 00030 – Black Ink MEK

RoHS Directive 2011/65/EU Annex II

Test Item(s):	Unit	Test Method	Results	MDL	Limit
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Cd by ICP-OES)	N.D.	2	100
Lead (Pb)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Pb by ICP-OES)	N.D.	2	1000
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013 (Determination of Hg by ICP-OES)	N.D.	2	1000
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321:2008 (Determination of CrVI by UV-Vis)	5	2	1000
Sum of PBBs	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	-	1000
Monobromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Dibromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Tribromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Pentabromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Hexabromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Heptabromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Octabromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Nonabromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-
Decabromobiphenyl	mg/kg	With reference to IEC 62321:2008 (Determination of PBB by GC-MS)	N.D.	5	-

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Sum of PBDEs	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	-	1000
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321:2008 (Determination of PBDE by GC-MS)	N.D.	5	-

Note: (a) mg/kg = ppm; (0.1wt% = 1000ppm)

(b) N.D. = Not Detected

(c) MDL = Method Detection Limit

(d) - = Not regulated

(e) Testing based on original basis

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Test Report

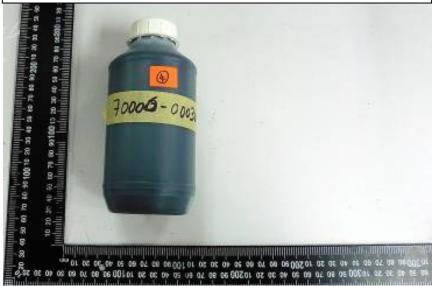
No. CTSSA/16247/15 Date: 14/09/2015

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Test Part Description:

Sample Description : 70000 – 00030 – Black Ink MEK

DR TWO MARKING TECHNOLOGY SDN BHD CTSSA/16247/15



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1. <u>DETERMINATION OF CADMIUM CONTENT BY</u> <u>IEC 62321-5 2013</u>

Sample Receiving and Registration

Sample Preparation

Weight sample (0.2-0.5g) into digestion vessel

Acid digestion (Microwave)

"Totally Dissolved"

Filtration

Analyses by ICP

2. <u>DETERMINATION OF LEAD CONTENT BY</u> <u>IEC 62321-5 2013</u>

Sample Receiving and Registration

Sample Preparation

Weight sample (0.2-0.5g) into digestion vessel

Acid digestion (Microwave)

"Totally Dissolved"

Filtration

Analyses by ICP

3. <u>DETERMINATION OF MERCURY CONTENT BY</u> <u>IEC 62321-4 2013</u>

Sample Receiving and Registration

Sample Preparation

Weight sample (0.1-0.5g) into digestion vessel

Acid digestion (Microwave)

"Totally Dissolved"

Filtration

Analyses by ICP

4. <u>DETERMINATION OF HEXAVALENT CHROMIUM</u> <u>BY IEC 62321 2008</u>

Sample Preparation

Add colour-developing reagent

Acidify with H₂SO₄

Let stand for 5-10 min

Analyses by UV- Spectrophotometer (540 nm)

5. <u>DETERMINATION OF PBB/PBDE WITH GC-MS</u> BY IEC 62321 2008

Sample Preparation

Weight sample (0.5-4.0g) into extraction thimble

Soxhlet Extraction with Toluene

Filter through 0.45 um membrane filter

Analyses by GC-MS (with appropriate dilution)

**** End of Report ****

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