

Test Report

No. TSNEC1500174842 A01

Date: 05 Mar 2015

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TIANJIN TOYO INK CO.,LTD.

12XINGHUA2#ROAD XIQING ECONOMIC DEVELOPMENT AREA,TIANJIN
300385, CHINA

This report is to supersede test report TSNEC1500174818

The following sample(s) was/were submitted and identified on behalf of the clients as : OFFSET GLOSS
NON-SKINNING PRINTING INK

SGS Job No. : TP15-000701 - TJ

Main Substance : PRINTING INK

Model No. : TK TNS (TK TNSG、TK TNSG-H、TK TNSG-HG) YELLOW
TK TNS (TK TNSG、TK TNSG-H、TK TNSG-HG) MAGENTA
TK TNS (TK TNSG、TK TNSG-H、TK TNSG-HG) CYAN
TK TNS (TK TNSG、TK TNSG-H、TK TNSG-HG) BLACK

Date of Sample Received : 10 Feb 2015

Testing Period : 10 Feb 2015 - 16 Feb 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).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Tianjin) Co., Ltd.



Reabeca Zhou
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	TSN15-001748.023	yellow viscous liquid
SN2	TSN15-001748.024	red viscous liquid
SN3	TSN15-001748.025	blue viscous liquid
SN4	TSN15-001748.026	black viscous liquid

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive 2011/65/EU

- Test Method :
- (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
 - (2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
 - (3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.
 - (4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
 - (5) With reference to IEC 62321:2008, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	023	024	025
Cadmium (Cd)	100	mg/kg	2	ND	ND	ND
Lead (Pb)	1000	mg/kg	2	ND	ND	ND
Mercury (Hg)	1000	mg/kg	2	ND	ND	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND	ND	ND
Sum of PBBs	1000	mg/kg	-	ND	ND	ND
Monobromobiphenyl	-	mg/kg	5	ND	ND	ND
Dibromobiphenyl	-	mg/kg	5	ND	ND	ND
Tribromobiphenyl	-	mg/kg	5	ND	ND	ND
Tetrabromobiphenyl	-	mg/kg	5	ND	ND	ND
Pentabromobiphenyl	-	mg/kg	5	ND	ND	ND
Hexabromobiphenyl	-	mg/kg	5	ND	ND	ND
Heptabromobiphenyl	-	mg/kg	5	ND	ND	ND
Octabromobiphenyl	-	mg/kg	5	ND	ND	ND
Nonabromobiphenyl	-	mg/kg	5	ND	ND	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>023</u>	<u>024</u>	<u>025</u>
Decabromobiphenyl	-	mg/kg	5	ND	ND	ND
Sum of PBDEs	1000	mg/kg	-	ND	ND	ND
Monobromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Dibromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tribromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Octabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND	ND	ND
Decabromodiphenyl ether	-	mg/kg	5	ND	ND	ND

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>026</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND



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<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>026</u>
Decabromodiphenyl ether	-	mg/kg	5	ND

Notes :

(1) The maximum permissible limit is quoted from directive 2011/65/EU, Annex II.

Phthalates

Test Method : With reference to EN14372: 2004, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>023</u>	<u>024</u>	<u>025</u>
Dibutyl Phthalate (DBP)	84-74-2	% (w/w)	0.003	ND	ND	ND
Benzylbutyl Phthalate (BBP)	85-68-7	% (w/w)	0.003	ND	ND	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	% (w/w)	0.003	ND	ND	ND
Diisobutyl Phthalate (DIBP)	84-69-5	% (w/w)	0.003	ND	ND	ND

<u>Test Item(s)</u>	<u>CAS NO.</u>	<u>Unit</u>	<u>MDL</u>	<u>026</u>
Dibutyl Phthalate (DBP)	84-74-2	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	% (w/w)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	% (w/w)	0.003	ND
Diisobutyl Phthalate (DIBP)	84-69-5	% (w/w)	0.003	ND

Notes :

Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC and the latest amending directive:

(1) Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.

(2) Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl Phthalates (DIBP) have been adopted in the draft of Commission Delegated Directive amending Annex II to Directive 2011/65/EU of the European Parliament, and the regulatory limit of each restricted substances should be 0.1%.

Result shown is of the total weight of dried sample



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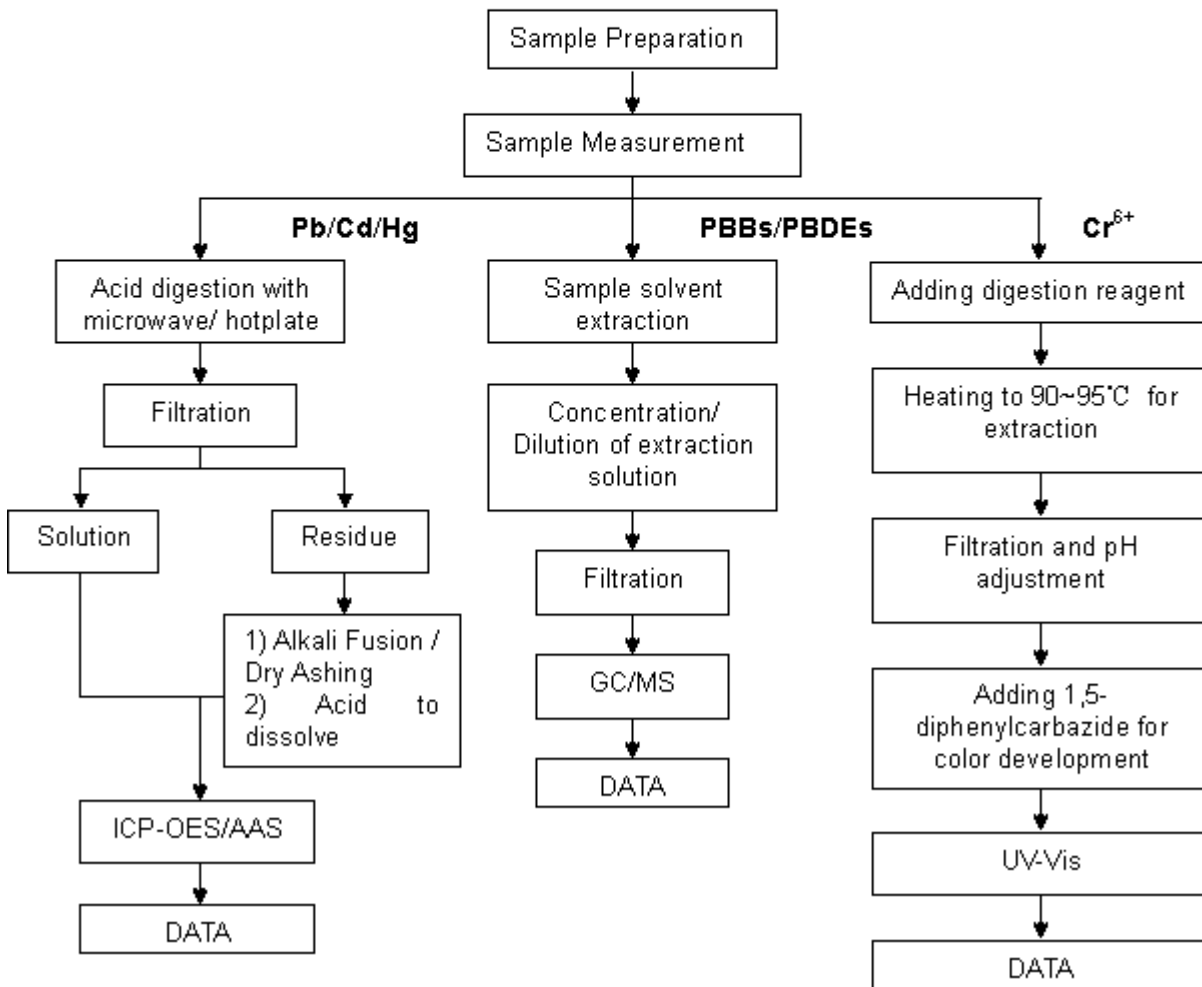
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ATTACHMENTS

Cd/Pb/Hg/Cr⁶⁺/PBBs&PBDEs Flow Chart

- 1) Name of the person who made testing: Teresa Wei/Ivy Hou/Carry Yao
- 2) Name of the person in charge of testing: Aaron Wang/Angell Yao/Rex Zhu
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ and PBBs/PBDEs test method excluded)



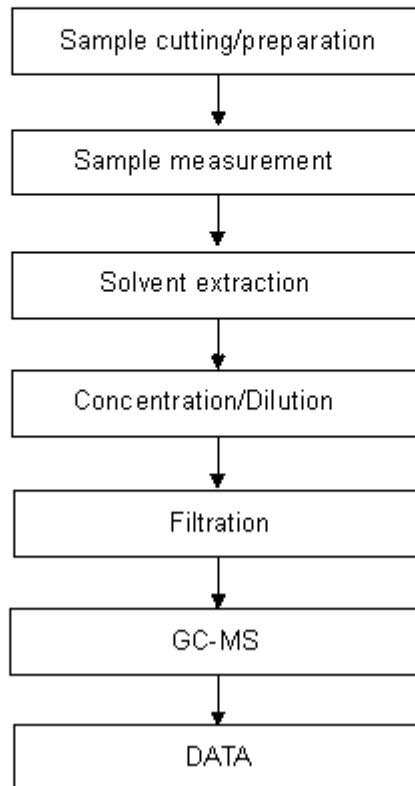
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Phthalate Testing Flow Chart

- 1) Name of the person who made testing: Cathy Cui
- 2) Name of the person in charge of testing: Rex Zhu



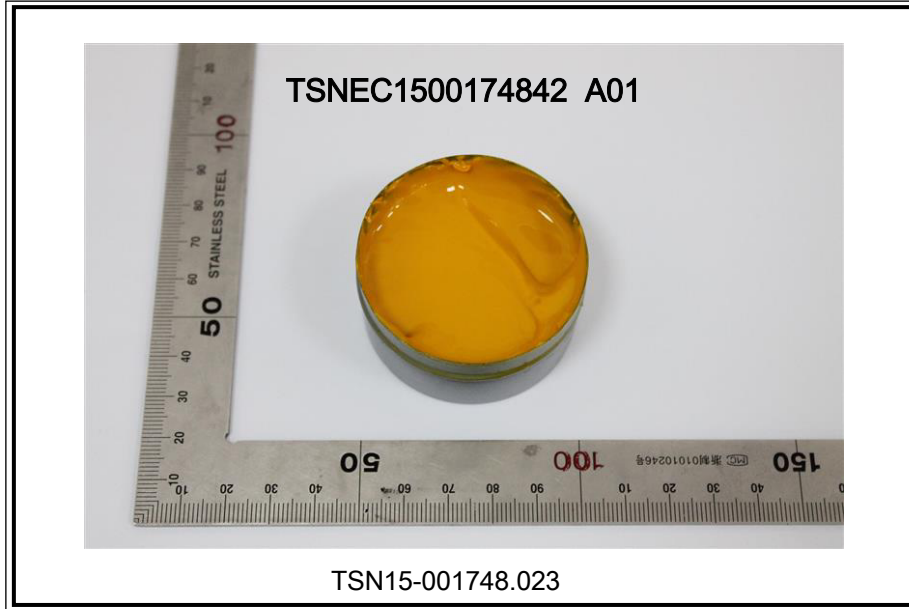
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