

Test Report No. CANEC1210051901 Date: 03 Aug 2012 Page 1 of 14

KINGBOARD LAMINATES HOLDINGS LIMITED

2/F.,HARBOUR VIEW 1,NO.12 SCIENCE PARK EAST AVENUE,PHASE II HONG KONG SCIENCE PARK,SHATIN,N.T. HONG KONG

The following sample(s) was/were submitted and identified on behalf of the clients as: KB-6160

SGS Job No.: CP12-036076 - GZ

Tested Sample Info. : KB-6160

Client Ref. Info.: KB-6060, KB-6160A/6060A, KB-6160C/6060C, KB-6150/6050,

KB-6150C/6050C

Date of Sample Received: 26 Jul 2012

Testing Period : 26 Jul 2012 - 01 Aug 2012

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).

Signed for and on behalf of SGS-CSTC Ltd.

Almay Gao

Approved Signatory

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Test Results:

Test Part Description:

Specimen No. SGS Sample ID Description

1 CAN12-100519.001 Yellow sheet 1#

Remarks:

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

Elementary Analysis & Flame Retardants

Test Method: With reference to IEC 62321:2008

- (1) Determination of Cadmium by ICP-OES.
- (2) Determination of Lead by ICP-OES.
- (3) Determination of Mercury by ICP-OES.
- (4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
- (5) Determination of PBBs / PBDEs content by GC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Cadmium (Cd)	mg/kg	2	ND
Lead (Pb)	mg/kg	2	7
Mercury (Hg)	mg/kg	2	ND
Hexavalent Chromium (CrVI)	mg/kg	2	ND
Sum of PBBs	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	mg/kg	-	ND
Monobromodiphenyl ether	mg/kg	5	ND

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Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
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	
Decabromodiphenyl ether	mg/kg	5	ND	

Organic-tin compounds

Test Method: With reference to ISO 17353: 2004 with carbamate, analysis was performed by GC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibutyl tin (DBT)	mg/kg	0.02	ND
Tributyl tin (TBT)	mg/kg	0.02	ND
Dioctyl tin (DOT)	mg/kg	0.02	ND
Triphenyl tin (TPhT)	mg/kg	0.02	ND

Polynuclear Aromatic Hydrocarbons (PAHs)

Test Method: With reference to ZEK 01.4-08 of German ZLS and its amendments, analysis was performed by GC-MS.

Test Item(s) Naphthalene(NAP)	<u>Unit</u> mg/kg	<u>MDL</u> 0.2	<u>001</u> ND
Acenaphthylene(ANY)	mg/kg	0.2	ND
Acenaphthene(ANA)	mg/kg	0.2	ND
Fluorene(FLU)	mg/kg	0.2	ND
Phenanthrene(PHE)	mg/kg	0.2	ND
Anthracene(ANT)	mg/kg	0.2	ND

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Test Item(s) Fluoranthene(FLT)	<u>Unit</u> mg/kg	MDL 0.2	<u>001</u> ND	
Pyrene(PYR)	mg/kg	0.2	ND	
Benzo(a)anthracene(BaA)	mg/kg	0.2	ND	
Chrysene(CHR)	mg/kg	0.2	ND	
Benzo(b)fluoranthene(BbF) + Benzo(j)fluoranthene(BjF)	mg/kg	0.4	ND	
Benzo(k)fluoranthene(BkF)	mg/kg	0.2	ND	
Benzo(e)pyrene(BeP)	mg/kg	0.2	ND	
Benzo(a)pyrene(BaP)	mg/kg	0.2	ND	
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.2	ND	
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.2	ND	
Benzo(g,h,i)perylene(BPE)	mg/kg	0.2	ND	
Sum of 18 PAHs	mg/kg	-	ND	

ZEK 01.4-08: Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Materials those are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact).	Materials those are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo(a)pyrene (mg/kg)	<0.2**	1	20
Sum of 18 PAH (mg/kg)*	<0.2**	10	200

Notes:

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^{* =} Only PAH substances > 0.2 mg/kg are taken into account while calculating the sum of PAHs

^{** =} In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which is indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.



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Formaldehyde

Test Method: In-house method (GZTC-CHEM-TOP-059-03), analysis was performed by UV-Vis.

 Test Item(s)
 Unit
 MDL
 001

 Formaldehyde
 g/kg
 0.02
 ND

Hexabromocyclododecane (HBCDD)

Test Method: Determination of HBCDD by GC-MS based on IEC 62321:2008.

Test Item(s) Unit MDL 001
Hexabromocyclododecane (HBCDD) mg/kg 10 ND

Notes:

(1) Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Hexabromocyclododecane (HBCDD) is considered as a priority for risk evaluation and substance restriction.

Tetrabromobisphenol A (TBBP-A)

Test Method: With reference to US EPA 3550C: 2007, analysis was performed by GC-MS/HPLC-MS.

 Test Item(s)
 Unit
 MDL
 001

 Tetrabromobisphenol A (TBBP-A)
 mg/kg
 10
 ND

Phthalate

Test Method: Determination of phthalates by GC-MS based on EN 14372:2004.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Dibutyl Phthalate (DBP)	% (w/w)	0.003	ND
Benzylbutyl Phthalate (BBP)	% (w/w)	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	% (w/w)	0.003	ND
Diisononyl Phthalate (DINP)	% (w/w)	0.010	ND
Di-n-octyl Phthalate (DNOP)	% (w/w)	0.003	ND
Diisodecyl Phthalate (DIDP)	% (w/w)	0.010	ND
Dimethyl Phthalate (DMP)	% (w/w)	0.003	ND

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Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>	
Diethyl Phthalate (DEP)	% (w/w	0.003	ND	
Diisobutyl Phthalate (DIBP)	% (w/w	0.003	ND	
Dinonyl Phthalate (DNP)	% (w/w	0.003	ND	
Diisooctyl Phthalate (DiOP)	% (w/w	0.010	ND	
Dipropyl Phthalate (DPrP)	% (w/w	0.003	ND	
Dicyclohexyl Phthalate (DCHP)	% (w/w	0.003	ND	
Dipentyl Phthalate (DPP)	% (w/w	0.003	ND	
Dibenzyl Phthalate (DBzP)	% (w/w	0.003	ND	
Diphenyl Phthalate (DPhP)	% (w/w	0.003	ND	
Di-n-hexyl Phthalate (DnHP)	% (w/w	0.003	ND	
Notes				

Notes:

PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

Test Method: With reference to US EPA Method 3550C: 2007, analysis was performed by HPLC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Perfluorooctane Sulfonates (PFOS) and related	mg/kg	10	ND
Acid,Metal Salt and Amide			
Perfluorooctanoic Acid (PFOA)	mg/kg	10	ND

Notes:

For reference: commission regulation (EU) No 757/2010 amending regulation (EC) No 850/2004:

- (1) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS equal to or below 10 mg/kg (0,001 % by weight) when it occurs in substances or in preparations.
- (2) For the purposes of this entry, Article 4(1) (b) shall apply to concentrations of PFOS in semi-finished products or articles, or parts thereof, if the concentration of PFOS is lower than 0,1 % by weight calculated with reference to the mass of structurally or micro-structurally distinct parts that contain PFOS or, for textiles or other coated materials, if the amount of PFOS is lower than $1\mu g$ /m2 of the coated material.

Benzotriazole UV Absorbant

Test Method: With reference to US EPA 3550C: 2007, analysis was performed by GC-MS.

Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
2-(3,5-Di-tert-butyl-2-hydroxyphenyl) benzotriazole	mg/kg	5	ND
(UV-320) (CAS No: 3846-71-7)			

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⁽¹⁾ Reference Information: Directive 2011/65/EU recasting RoHS directive 2002/95/EC: Bis (2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP) and Dibutyl phthalate (DBP) are considered as a priority for risk evaluation and substance restriction.



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Test Item(s)	<u>Unit</u>	<u>MDL</u>	<u>001</u>
2-(3',5'-Di-tert-butyl-2'-hydroxyphenyl)-5-chloro	mg/kg	5	ND
benzotriazole (UV-327) (CAS No: 3864-99-1)			
2-(2'-hydroxy-3',5'-di-tert- amylphenyl)	mg/kg	5	ND
benzotriazole (UV-328) (CAS No: 25973-55-1)			
TinUVin 350 (UV-350) (CAS No: 36437-37-3)	mg/kg	5	ND

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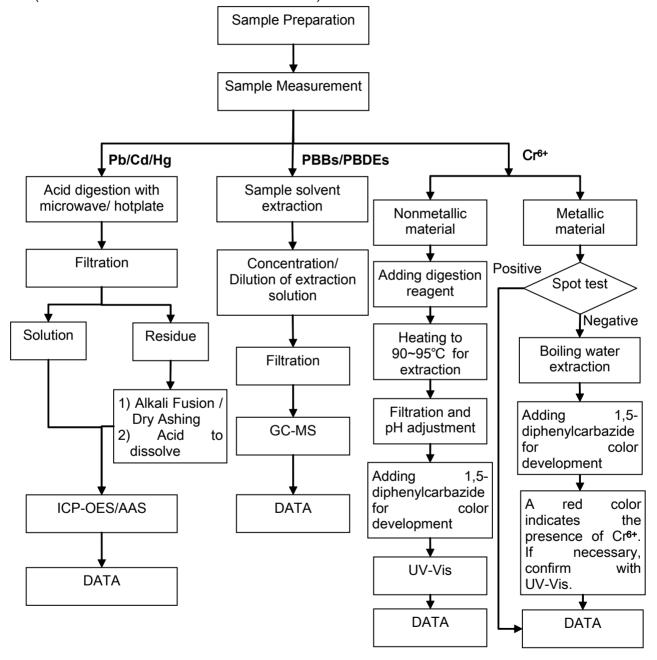
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ATTACHMENTS

RoHS Testing Flow Chart

- 1) Name of the person who made testing: Bella Wang / Cutey Yu
- 2) Name of the person in charge of testing: Adams Yu / Ryan Yang
- 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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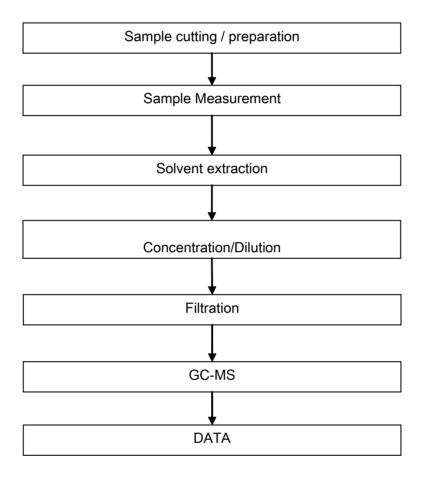
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HBCDD Testing Flow Chart

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Ryan Yang



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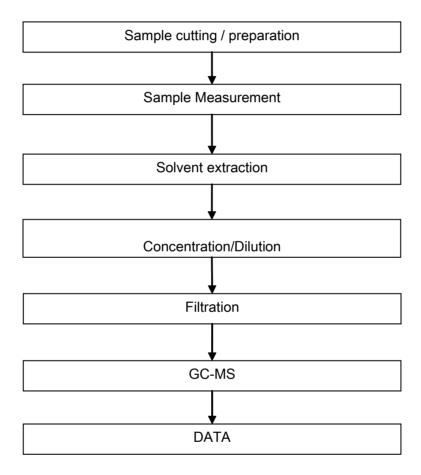
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Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Tina Zhao
- 2) Name of the person in charge of testing: Ryan Yang



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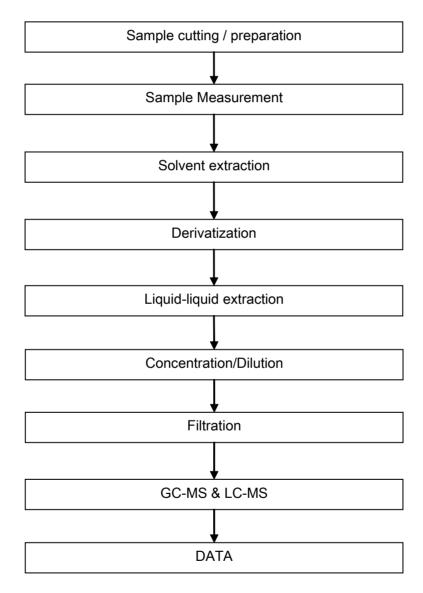


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TBBP-A Testing Flow Chart

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Ryan Yang



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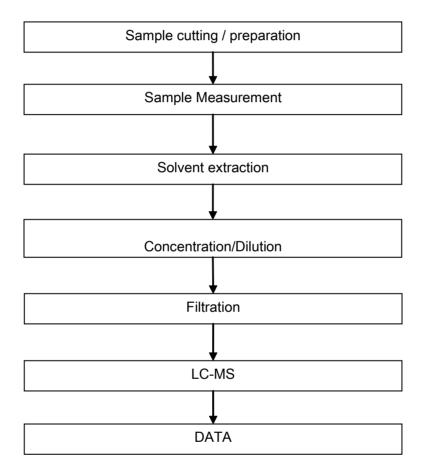
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PFOA / PFOS Testing Flow Chart

- 1) Name of the person who made testing: Cindy Huang
- 2) Name of the person in charge of testing: Ryan Yang



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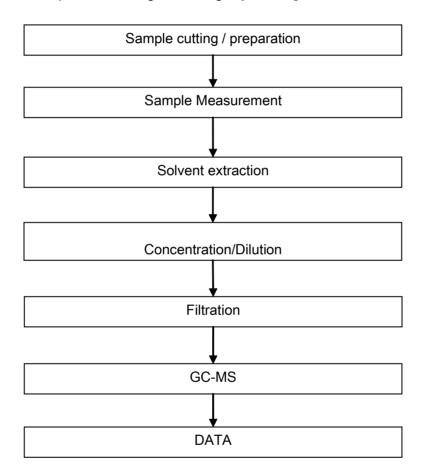
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PAHs Testing Flow Chart

- 1) Name of the person who made testing: Cutey Yu
- 2) Name of the person in charge of testing: Ryan Yang



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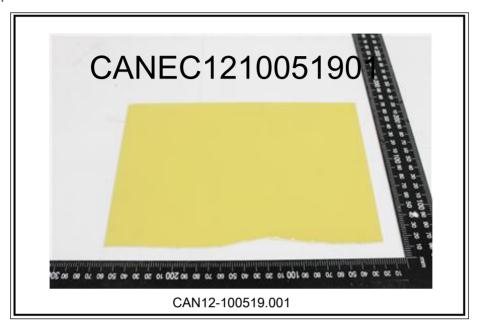


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