

No. SHAEC1210504201

Date: 28 Jun 2012

Page 1 of 9

SU ZHOU MAO YU TECHNOLOGY CO.,LTD SUZHOU HIGH-TECH ZONE XIANG JIANG ROAD, NO.1555

The following sample(s) was/were submitted and identified on behalf of the clients as : PET from the film

SGS Job No. :	SP12-018619 - SUZ
Date of Sample Received :	25 Jun 2012
Testing Period :	25 Jun 2012 - 28 Jun 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).
Conclusion :	Based on the performed tests on submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (PBDE) 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 Ltd.

Fan Jingjie, JJ Approved Signatory

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No. SHAEC1210504201

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	SHA12-105042.001	Transparent film

### Remarks :

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

### RoHS Directive 2011/65/EU

- 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.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	MDL	<u>001</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

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Test Report	No. SHAEC121050420	)1	Date: 28	Jun 2012	Page 3 of 9
<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	MDL	<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	

Notes :

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

#### Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

<u>Test Item(s)</u>	<u>Unit</u>	MDL	<u>001</u>
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
lodine (I)	mg/kg	50	ND

#### Hexabromocyclododecane (HBCDD)

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

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

Notes :

 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.

#### **Phthalates**

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

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No.	SHAEC1210504201
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Date: 28 Jun 2012 F

Page	4	of	9
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Test Item(s)	<u>Unit</u>	MDL	<u>001</u>
Dibutyl Phthalate (DBP)	%	0.003	ND
Benzylbutyl Phthalate (BBP)	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	%	0.003	ND
Notes :			

(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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No. SHAEC1210504201

Date: 28 Jun 2012

Page 5 of 9

### ATTACHMENTS

## **RoHS Testing Flow Chart**

- 1) Name of the person who made testing: Jan Shi/Yoyo Wang/Allen Xiao/Gary Xu
- 2) Name of the person in charge of testing: Jeff Zhang/George Xu/ Linda Li
- 3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded)



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No. SHAEC1210504201

Date: 28 Jun 2012

#### Page 6 of 9

### Phthalates Testing Flow Chart

- 1) Name of the person who made testing: Elyn Yao
- 2) Name of the person in charge of testing: Rachel Zhang



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No. SHAEC1210504201

Date: 28 Jun 2012

Page 7 of 9

## **HBCDD Testing Flow Chart**

- 1) Name of the person who made testing: Gary Xu
- 2) Name of the person in charge of testing: Linda Li



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No. SHAEC1210504201

Date: 28 Jun 2012

#### Page 8 of 9

### **Halogen Testing Flow Chart**

- 1) Name of the person who made testing: Sisily Yin
- 2) Name of the person in charge of testing: Zirco Yu



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