規格承認書
Specification for Approval

客　戶：IE002
Customer
品　名：Big LTE Antenna
Part name
料　號：GY115IE002-001
Part No.
客戶料號:
Customer Part No.
Rev.(版本): 01

客戶承認印　CUSTOMER APPROVED BY		
APPROVAL	CHIEF	SUPERVISOR
Approval No.		
Model		
Part No.		

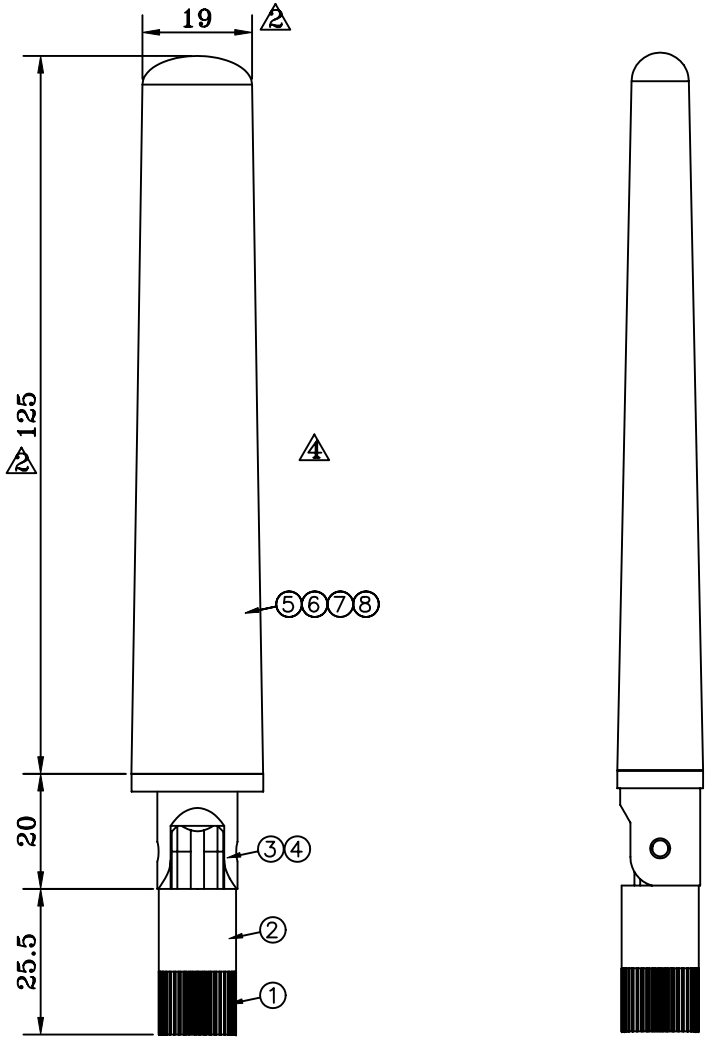
CHIEF	SALES	R&D	DESIGN
ROX		ROX	REASON
Date:2017/12/19		Date: 2017/12/19	
驊 陞 科 技 股 份 有 限 公 司 **WIESON TECHNOLOGIES CO., LTD.**			

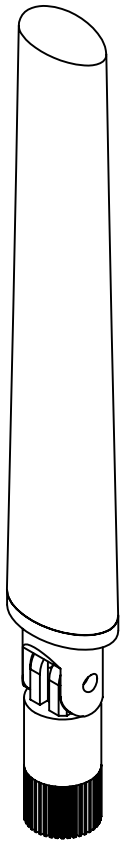
表格編號：324012 版本: 第四版

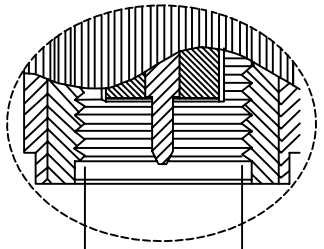
Customer Drawing

ROHS Compliant

REV	DATE	DESCRIPTION	NAME
01	17.09.20	NEW RELEASE	JAY
02	17.11.03	⚠1 Modify SMA	JAY
03	17.11.06	⚠2 Modify Cover Size	JAY
04	17.12.15	⚠3 Modify Sponge Size	JAY
05	17.12.19	⚠4 Modify COVER	JAY







NO.	ITEM	DESCRIPTION	QTY
⑨			
⑧	Sponge	Sponge , Size:10 x 10 x 3mm⚠3	2
⑦	PCB	PCB , FR-4	1
⑥	COVER	COVER , BLACK	1
⑤	CABLE	RG178 COAXIAL CABLE , OD:1.8 , ORANGE	1
④	FIXED PIN	FIXED , BLACK	2
③	BASE-2	BASE-2 , BLACK	1
②	BASE-1	BASE-1 , BLACK	1
①	CONNECTOR	SMA PLUG (S/T) FOR ANTENNA⚠1	1

WIESON TECHNOLOGIES CO., LTD

PART NO.: GY115IE002-001

TITLE: Big LTE Antenna

DRAWN BY	JAY(WST)	DRAWING NO.	WSTSXXXXXX
CHECKED BY		DRAWING SIZE	A4
APPROVED BY		UNIT	mm
SORTING NO.	WSC	PAGE	1 OF 1

[ARTICLE:044032 V6]

RF Antenna Cable Assembly

Specification

1. Electrical Properties :

1.1 Frequency Range……..…0.698~0.96 GHz;
1710 ~ 2170 GHz;
2.30GHz~2.69GHz

1.2 Impedance ……..…. 50Ω Nominal
1.3 VSWR ……..…... 3 :1Max.
1.4 Return Loss……..…….-15.42 dB Max.
1.5 Radiation ……Omni-directional
1.6 Peak Gain……2.06dBi (0.704GHz)
1.7 Efficiency……>45%
1.8 Polarization ……. Linear; Vertical
1.9 Admitted Power …….. 1W
1.10 Cable …….. RG-178 Cable ;ORANGE
1.11 Connector ……. SMA Connector

2. Physical Properties :

2.1 Operating Temp ……..…..……-10℃~ +60℃
2.2 Storage Temp ……..…..……-10℃~ +70℃

WIESON TECHNOLOGIES CO., LTD.	SPECIFICATION LIST	TYPE OF PRODUCT
		RF Antenna

INDEX

				Approvals	
Rev	Date	Description	Edited by	Prepared :	REASON
01	2017/12/12	ISSUE	REASON	Checked :	JOSN
				Approved :	ROX
				Issued No :	01
				Sheet :	**1 OF 137**

WIESON TECHNOLOGIES CO.,LTD

BILL OF MATERIAL

Cust.	**IE002**	**TITLE**	**Big LTE Antenna**				
Cust.P/N		**WIESON P/N**	**GY115IE002-001**				
NO.	**DESCRIPTION**	**SUPPLIER**	**SUPPLIER PART NO.**	**UL NO.**	**AVL**	**QUANTITY**	**REMARK**
1	**SMA PLUG (S/T) FOR ANTENNA**	/	CONNECTOR	/		1PCS	
2	**BASE-1 , BLACK**	/	BASE-1	/		1PCS	
3	**BASE-2 , BLACK**	/	BASE-2	/		1PCS	
4	**FIXED , BLACK**		FIXED PIN			2PCS	
5	**RG178 COAXIAL CABLE , OD:1.8 , ORANGE**		CABLE			MM	
6	**COVER , BLACK**		COVER			1PCS	
7	**PCB , FR-4**		PCB			1PCS	
8	**Sponge , Size:20 x 11 x 6mm**		SPONGE			1PCS	
9	**Sponge , Size:18 x 11 x3.5mm**		SPONGE			1PCS	

APPROVED BY: ROX **CHECKD BY: JOSN** **DESIGNED BY: REASON**

XINHUI DISTRICT SAN HUAN COPPER PRODUCTS CO.,LTD

3RD DISTRICT XIJIA INDUSTRY ZONE XINHUI DISTRICT JIANGMEN CITY GUANGDONG CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as :
kuai xiao tong (in Chinese as 快削铜)

SGS Job No. :	GZIN1701002002PC - GZ
Date of Sample Received :	13 Jan 2017
Testing Period :	13 Jan 2017 - 19 Jan 2017
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 (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo

Echo Yeung
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN17-009091.001	Brassy metal

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 62321-7-1:2015 , determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
(5)With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	15
Lead (Pb)	1,000	mg/kg	2	28858▲
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))▼	-	µg/cm²	0.10	ND
Sum of PBBs	1,000	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	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Item(s)	Limit	Unit	MDL	*001*
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 RoHS Directive (EU) 2015/863.

(2) ▼= a. The sample is positive for CrVI if the CrVI concentration is greater than 0.13 µg/cm2. The sample coating is considered to contain CrVI

b. The sample is negative for CrVI if CrVI is ND (concentration less than 0.10 µg/cm2). The coating is considered a non-CrVI based coating

c. The result between 0.10 µg/cm2 and 0.13 µg/cm2 is considered to be inconclusive - unavoidable coating variations may influence the determination

Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f? p=104:30:1742232870351101::::FSP_ORG_ID, FSP_LANG_ID:1258637,25

Remark▲: According to the declaration from the client, Lead (Pb) in specimen is exempted by EU RoHS directive 2011/65/EU based on |ANNEX III 6(c)|: Copper alloy containing up to 4 % lead by weight.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.

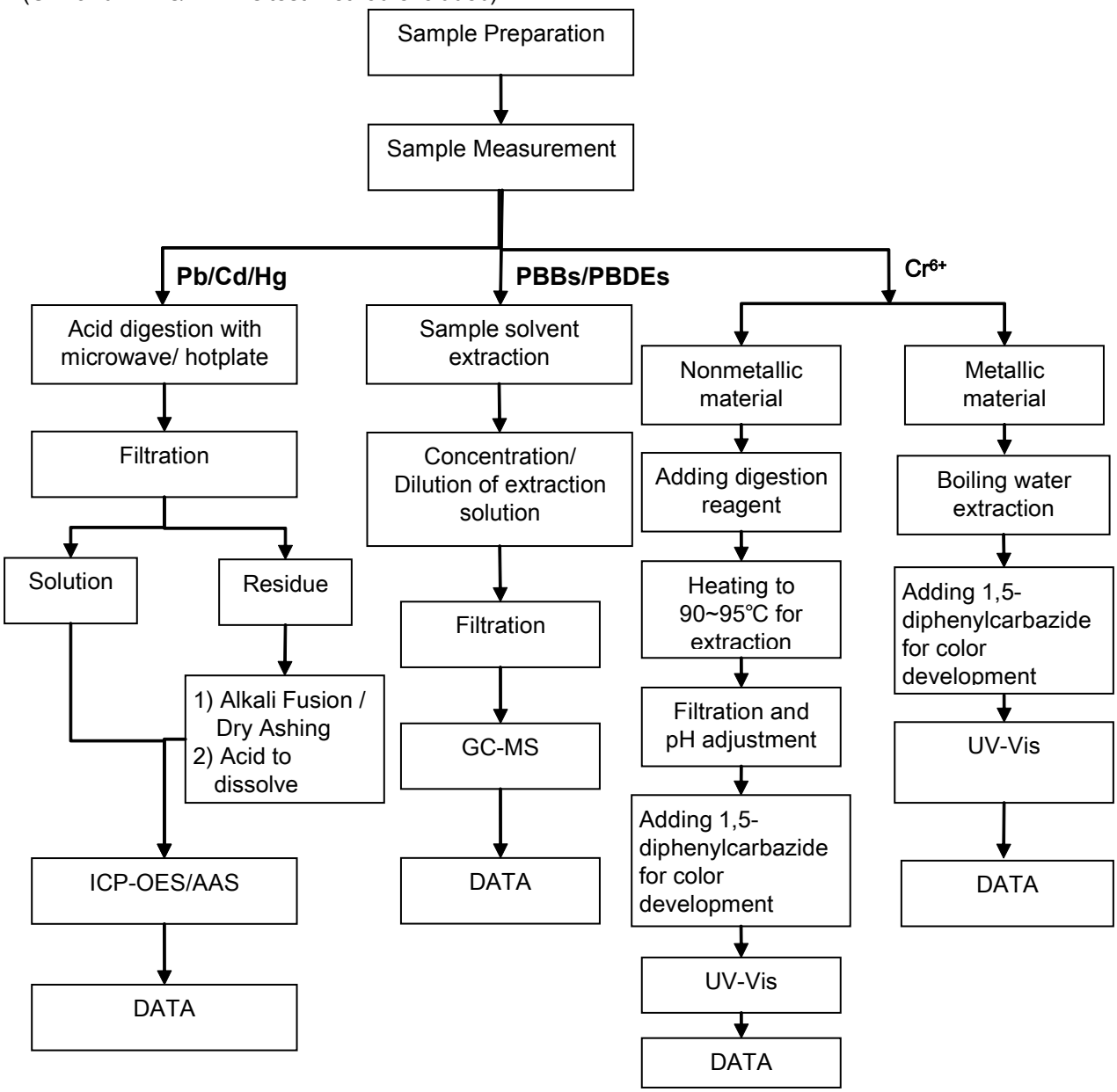
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn

中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Edith Zhang / Sunny Hu
2) Name of the person in charge of testing: Bella Wang / Qiong Liu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Sample photo:

CAN17-009091.001

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试报告

No. SZXEC1700075702 日期: 2017年02月23日

深圳市永艺发科技有限公司

深圳市宝安区松岗街道江边社区创业三路江边工业区轻污染区厂房第12栋一楼

以下测试之样品是由申请者所提供及确认：镀镍

SGS工作编号：	RP17-000791 - SZ
样品接收日期：	2017年02月20日
测试周期：	2017年02月20日 - 2017年02月23日
测试要求：	根据客户要求测试
测试方法：	请参见下一页
测试结果：	请参见下一页
结论：	基于所送样品进行的测试，镉、铅、汞、六价铬的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司深圳分公司
授权签名

Sunny Nie聂芳敏
批准签署人

备注：本报告是编号为SZXEC1700075701报告的中文版本。

SGS Bldg, No.3, Jianghao Industrial Park, No.430, Jihua Road, Bantian, Longgang District, Shenzhen, China 518129 t (86-755) 25328888 f (86-755) 83106190 www.sgsgroup.com.cn
中国·深圳·龙岗区坂田吉华路430号江灏工业园3栋SGS大楼 邮编: 518129 t (86-755) 25328888 f (86-755) 83106190 e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	SZX17-000757.001	带银色镀层的金属

备注 :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = 方法检测限

(3) ND = 未检出 (< MDL)

(4) "-" = 未规定

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法 : (1)参考IEC 62321-5:2013，用ICP-OES测定镉的含量
(2)参考IEC 62321-5:2013，用ICP-OES测定铅的含量
(3)参考IEC 62321-4:2013，用ICP-OES测定汞的含量
(4)参考IEC 62321-7-1:2015 ，用紫外-可见分光光度计比色法测定六价铬的含量

测试项目	限值	单位	MDL	*001*
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	12
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))▾	-	μg/cm²	0.10	ND

备注 :

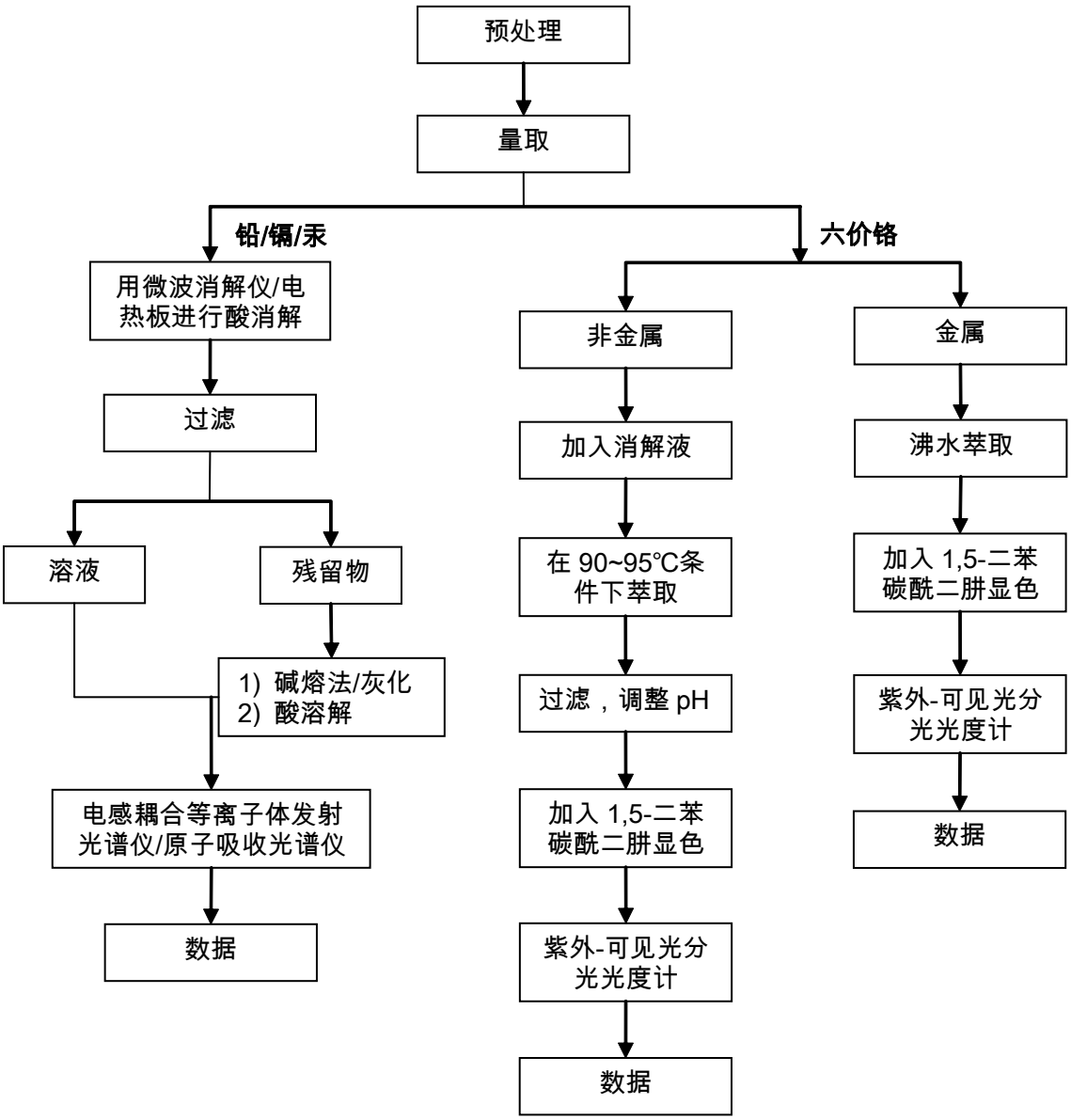
(1) 最大允许极限值引用自RoHS指令(EU) 2015/863。

(2) ▾=a. 当六价铬的浓度高于0.13 μg/cm2时，样品为阳性，即含有六价铬；
b. 当六价铬的浓度为ND(低于0.10 μg/cm2)时，样品为阴性，即未检测到六价铬；
c. 当六价铬的浓度介于0.10 μg/cm2与0.13 μg/cm2之间时，无法直接判定是否检测到六价铬，因不同个体的样品表面差异可能会影响测定结果；
由于未获知样品的存储条件和生产日期，样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。
IEC 62321系列等同于 EN 62321系列
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

附件

Pb/Cd/Hg/Cr^{6+} 测试流程图

1) 分析人员：邓焕梁 / 任秋美
2) 项目负责人：罗敏仪 / 童妙琦
3) 样品按照下述流程被完全消解（六价铬测试除外）。



样品照片:

SZX17-000757.001

此照片仅限于随SGS正本报告使用

*** 报告完 ***

Test Report

No. SZXEC1700075703 Date: 23 Feb 2017 Page 1 of 5

SHENZHEN YONGYIFA TECHNOLOGY CO., LTD.

1ST/FLOOR，12TH BUILDING， LIGHT POLLUTION AREA PLANT，JIANGBIAN INDUSTRIAL ZONE，CHUANGYE 3RD ROAD，JIANGBIAN COMMUNITY，SONGGANG STREET， BAOAN DISTRICT，SHENZHEN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : Gold plating bath

SGS Job No. :	RP17-000791 - SZ
Date of Sample Received :	20 Feb 2017
Testing Period :	20 Feb 2017 - 23 Feb 2017
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 Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) do not exceed the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Sunny Nie
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch Testing Center Chemical Laboratory

SGS Bldg, No.3, Jianghao Industrial Park, No.430, Jihua Road, Bantian, Longgang District, Shenzhen, China 518129 t (86-755) 25328888 f (86-755) 83106190 www.sgsgroup.com.cn
中国·深圳·龙岗区坂田吉华路430号江灏工业园3栋SGS大楼 邮编: 518129 t (86-755) 25328888 f (86-755) 83106190 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX17-000757.002	Transparent liquid

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	*002*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	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	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND

SGS Bldg, No.3, Jianghao Industrial Park, No.430, Jihua Road, Bantian, Longgang District, Shenzhen, China 518129 t (86-755) 25328888 f (86-755) 83106190 www.sgsgroup.com.cn
中国·深圳·龙岗区坂田吉华路430号江灏工业园3栋SGS大楼 邮编: 518129 t (86-755) 25328888 f (86-755) 83106190 e sgs.china@sgs.com

Test Item(s)	Limit	Unit	MDL	*002*
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 :

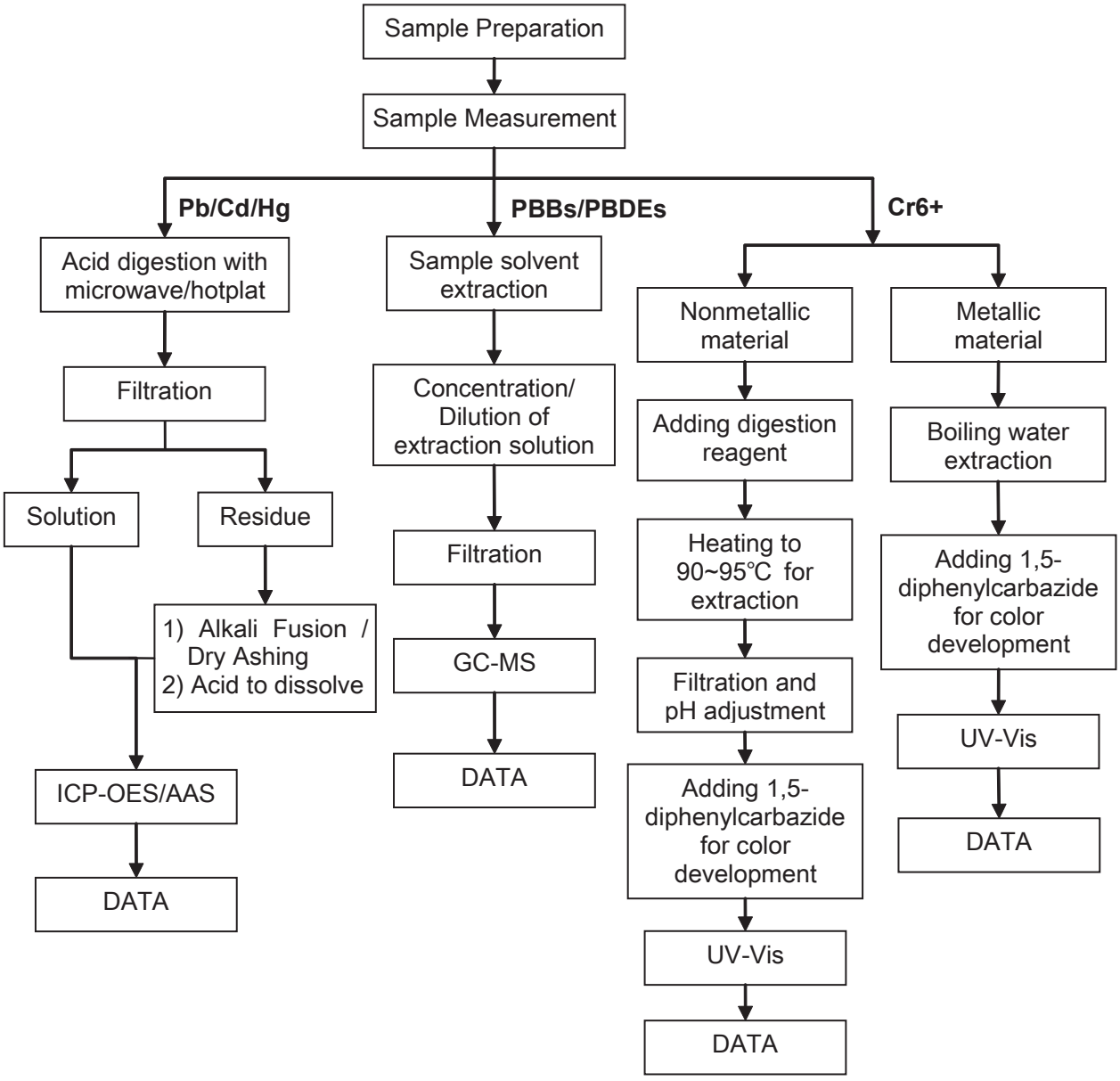
(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
(2) On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
(3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
(4) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
(5) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.'

Remark : The result(s) shown is/are of the total weight of wet sample.

ATTACHMENTS

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Winsen Deng / David Mai / Truly Ren
2) Name of the person in charge of testing: Zoe Luo / Laurel Li / Muky Tong /
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).



Sample photo:

SZX17-000757.002

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch Testing Center Chemical Laboratory
SGS Bldg, No.3, Jianghao Industrial Park, No.430, Jihua Road, Bantian, Longgang District, Shenzhen, China 518129 t (86-755) 25328888 f (86-755) 83106190 www.sgsgroup.com.cn
中国·深圳·龙岗区坂田吉华路430号江灏工业园3栋SGS大楼 邮编: 518129 t (86-755) 25328888 f (86-755) 83106190 e sgs.china@sgs.com

Test Report

JIASHAN WEIYE PTFE PRODUCTS FACTORY (COMMON PARTNERSHIP)

NO.61 YINXIU ROAD,WEITANG TOWN,JIASHAN,ZHEJIANG
CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : PTFE ROD

SGS Job No. :	CP17-001579 - GZ
Client Ref. Info. :	Used for 4mm-80mm
Date of Sample Received :	12 Jan 2017
Testing Period :	12 Jan 2017 - 17 Jan 2017
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) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Merry

Merry Lv
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center Chemical Laboratory.

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN17-008195.001	White plastic

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
(6)With reference to IEC 62321-8:2013 (111/321/CD) , determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	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	1,000	mg/kg	-	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Item(s)	Limit	Unit	MDL	*001*
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
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

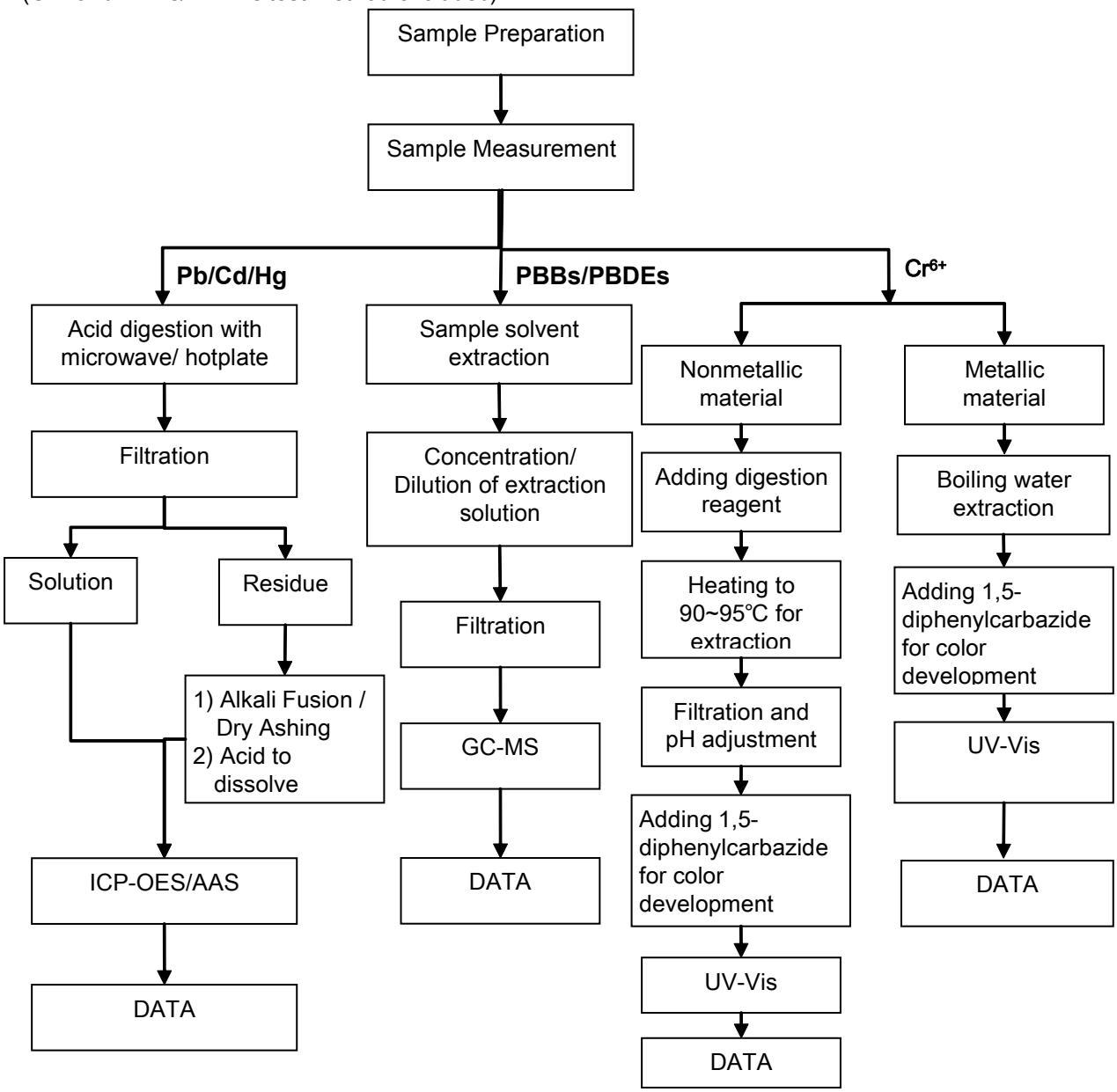
(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Edith Zhang / Sunny Hu
2) Name of the person in charge of testing: Bella Wang / Qiong Liu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).

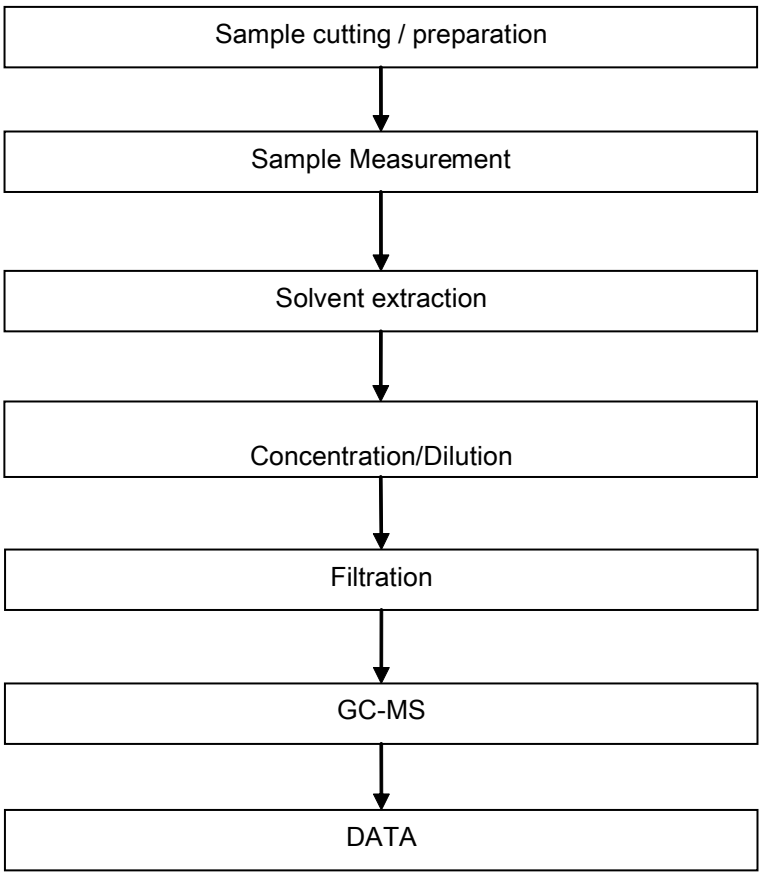


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

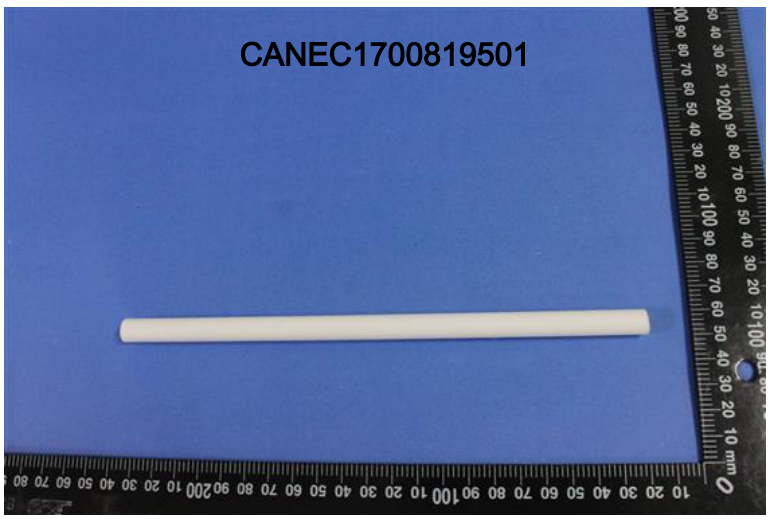
Phthalates Testing Flow Chart

1) Name of the person who made testing: Sunny Hu
2) Name of the person in charge of testing: Qiong Liu



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Sample photo:



CAN17-008195.001

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试报告

No. CANEC1703403505　　日期: 2017年03月14日　第1页,共6页

广东彩虹德记塑胶颜料股份有限公司
东莞市凤岗镇福民工业区

以下测试之样品是由申请者所提供及确认：请见备注

SGS工作编号：	CP17-010010 - SZ
样品接收日期：	2017年03月08日
测试周期：	2017年03月08日 - 2017年03月14日
测试要求：	根据客户要求测试
测试方法：	请参见下一页
测试结果：	请参见下一页
结论：	基于所送样品进行的测试，镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)的测试结果不超过欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司广州分公司
授权签名

梁康宁

Alkene Liang梁康宁
批准签署人

备注: 根据客户申请, SGS出具了此中文报告, 英文版本可根据客户要求提供. (The Chinese test report is issued according to the applicant's request. The English version is available from SGS if further needed)

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	CAN17-034035.003	黑色塑胶粒

备注 :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = 方法检测限

(3) ND = 未检出 (< MDL)

(4) "-" = 未规定

RoHS 指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法 : (1)参考IEC 62321-5:2013，用ICP-OES测定镉的含量。
(2)参考IEC 62321-5:2013，用ICP-OES测定铅的含量。
(3)参考IEC 62321-4:2013，用ICP-OES测定汞的含量。
(4)参考IEC 62321:2008，用紫外-可见分光光度计比色法测定六价铬的含量。
(5)参考IEC 62321-6:2015，用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚) 的含量。

测试项目	限值	单位	MDL	*003*
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	ND
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))	1,000	mg/kg	2	ND
多溴联苯之和(PBBs)	1,000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1,000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国 · 广州 · 经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试项目	限值	单位	MDL	003
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND

备注：

(1) 最大允许极限值引用自RoHS指令(EU) 2015/863 。

(2) 2015年6月4 号发表在欧盟官方杂志（官方公报）上的RoHS指令(EU) 2015/863附录II限值中还包括邻苯二甲酸酯BBP，DBP，DEHP和DIBP。新的指令限制了电子电器产品的每一个均一材质中邻苯二甲酸酯含量不得超过0.1%。

(3) 2021年7月22号开始，DEHP, BBP, DBP 和 DIBP的限制适用于医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。

(4) DEHP, BBP, DBP 和 DIBP的限制不适用于2019年7月22日前投放市场的电缆及电子电气产品中用于维修、重复利用、功能更新及容量提升的备用配件以及2021年7月22日前投放市场的医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。

(5) DEHP、BBP 和 DBP的限制不适用于玩具产品，因为No.1907/2006附录XVII第51条已对玩具产品中的DEHP、BBP 和 DBP含量进行了限制。

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

备注

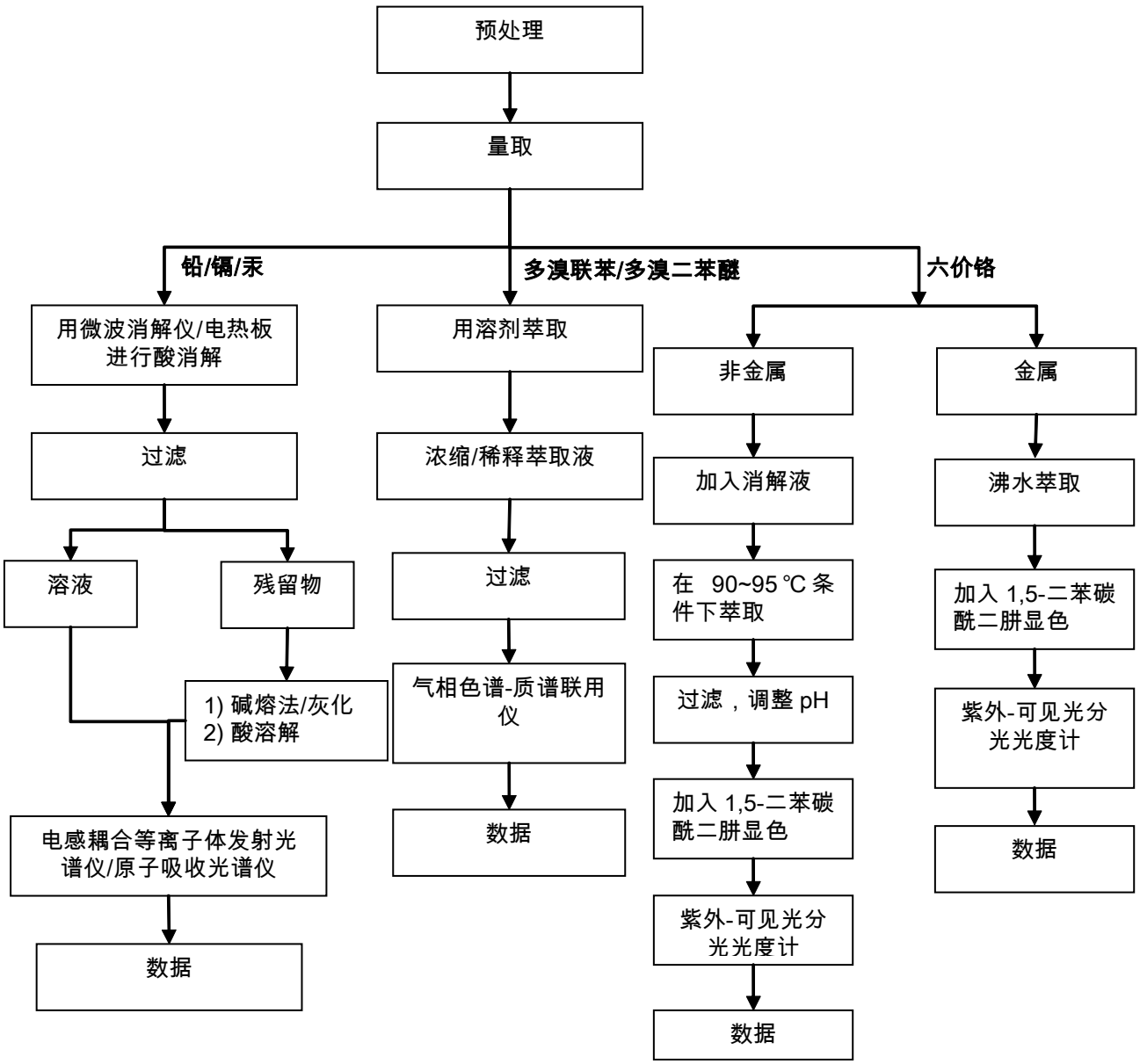
801	802	2013	2014	2017	3014	3040	3050	227
525	8101	8102	8201	8202	8203	8204	8207	808
806	2014B	8100	8206	3050B	MIXTURE			

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs 测试流程图

1) 分析人员：张梓路 / 胡香云
2) 项目负责人：汪丹 / 刘琼
3) 样品按照下述流程被完全消解（六价铬和多溴联苯/多溴二苯醚测试除外）。



样品照片:

CAN17-034035.003

此照片仅限于随SGS正本报告使用

*** 报告完 ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Report

DONGGUAN ANCHEN PLASTIC TECHNOLOGY CO.,LTD.

NO.D2, BUILDING D, QINTONG SCIENCE PARK, NO.82, SANLIAN SOUTH ROAD, LUWU VILLAGE, CHANGPING TOWN, DONGGUAN CITY

The following sample(s) was/were submitted and identified on behalf of the clients as : PC+PBT plastic

SGS Job No. :	CP17-001863 - SZ
Model No. :	6620-1
Main Substance :	PC and PBT
Date of Sample Received :	11 Jan 2017
Testing Period :	11 Jan 2017 - 16 Jan 2017
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) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Zmguan

Zm guan
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN17-006695.001	White plastic

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
(6)With reference to IEC 62321-8:2013 (111/321/CD) , determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	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	1,000	mg/kg	-	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Item(s)	Limit	Unit	MDL	*001*
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
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

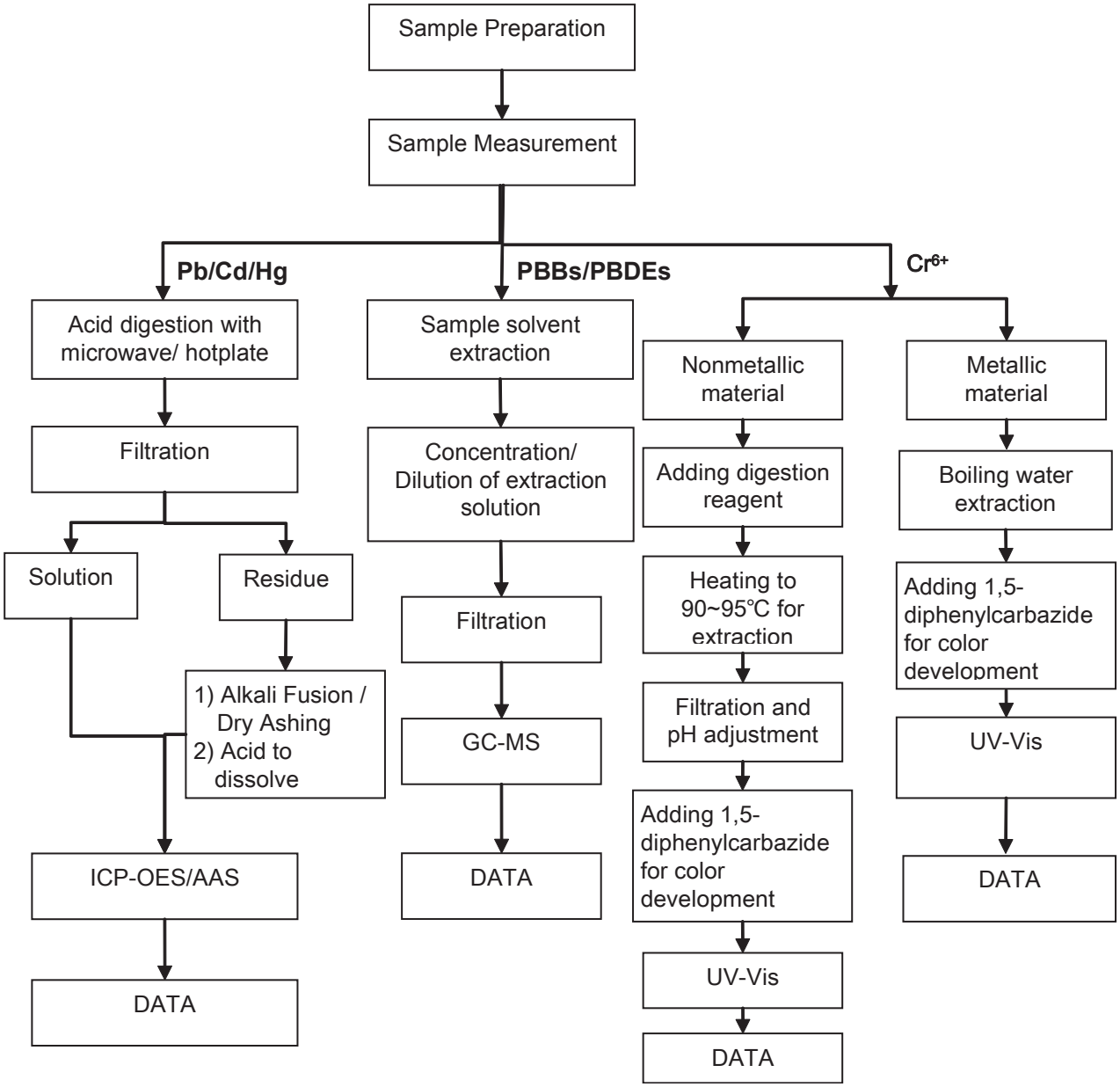
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn

中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Edith Zhang / Sunny Hu
2) Name of the person in charge of testing: Bella Wang / Qiong Liu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).

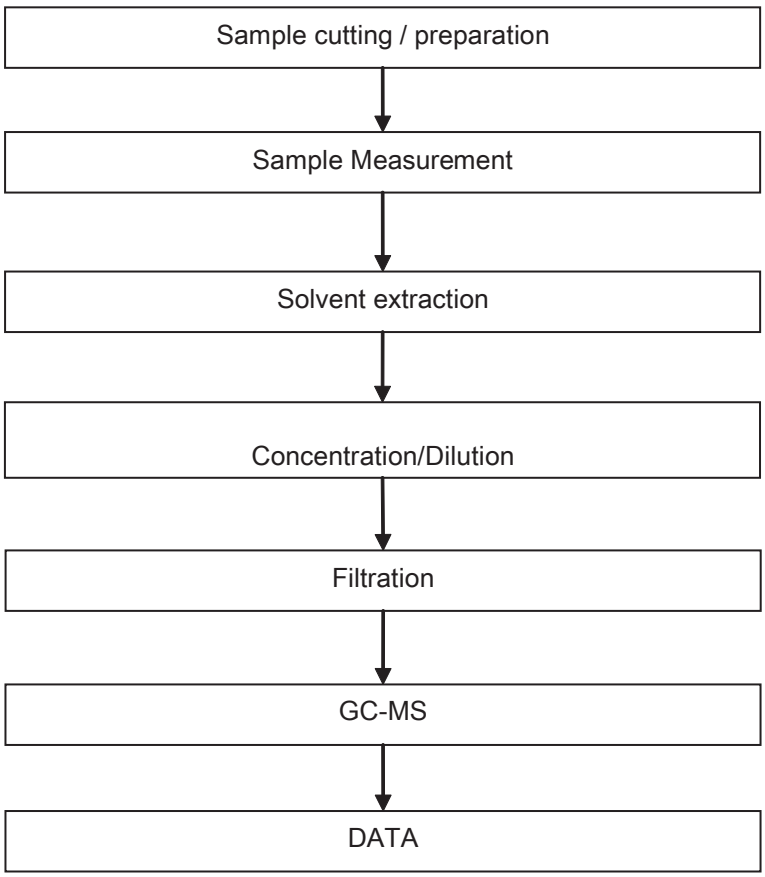


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

Phthalates Testing Flow Chart

1) Name of the person who made testing: Sunny Hu
2) Name of the person in charge of testing: Qiong Liu



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Sample photo:

CAN17-006695.001

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

DONGGUAN CITY GUANGZHEN PLASTIC SCIENCE AND TECHNOLOGY CO.,LTD

#780 SUWENNAN ROAD,DAJINGJIU PLASTIC RAW MATERIALS MARKET,SHUNXIN VILLAGE,CHANGPING TOWN,DONGGUAN CITY,CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : POM FM090

SGS Job No. :	GZIN1612060231PC - GZ
Client Ref. Info. :	FM090,M90-44,F20-03,100P,500P Mixture
Date of Sample Received :	28 Dec 2016
Testing Period :	28 Dec 2016 - 04 Jan 2017
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) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch

Echo

Echo Yeung
Approved Signatory

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	CAN16-258378.001	White plastic grains

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
(6)With reference to IEC 62321-8:2013 (111/321/CD) , determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (CrVI)	1,000	mg/kg	2	ND
Sum of PBBs	1,000	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	1,000	mg/kg	-	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Item(s)	Limit	Unit	MDL	001
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
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl phthalate (BBP)	1000	mg/kg	50	ND
Bis (2-ethylhexyl) phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

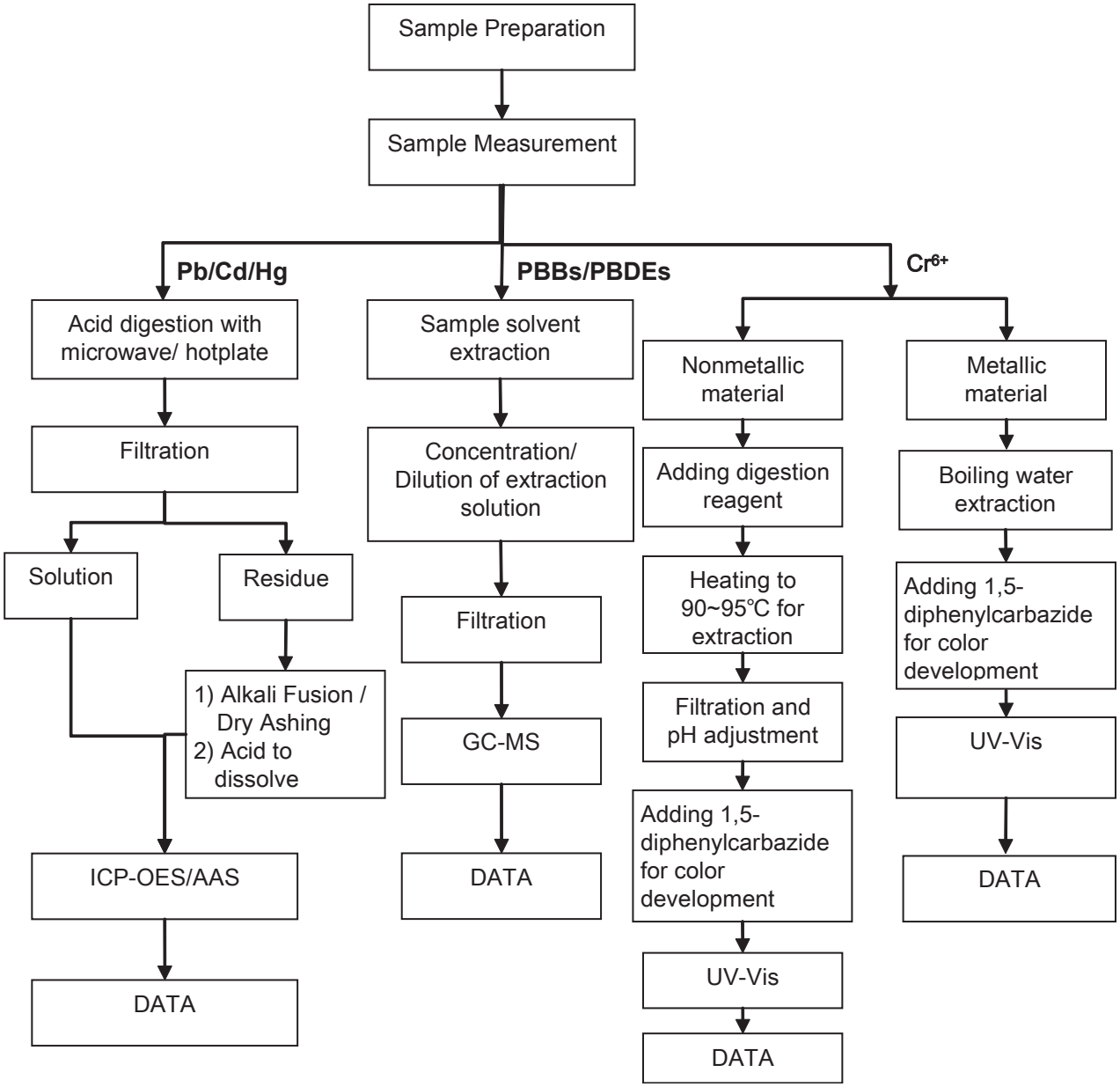
(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs Testing Flow Chart

1) Name of the person who made testing: Edith Zhang / Sunny Hu
2) Name of the person in charge of testing: Bella Wang / Qiong Liu
3) These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr^{6+} and PBBs/PBDEs test method excluded).

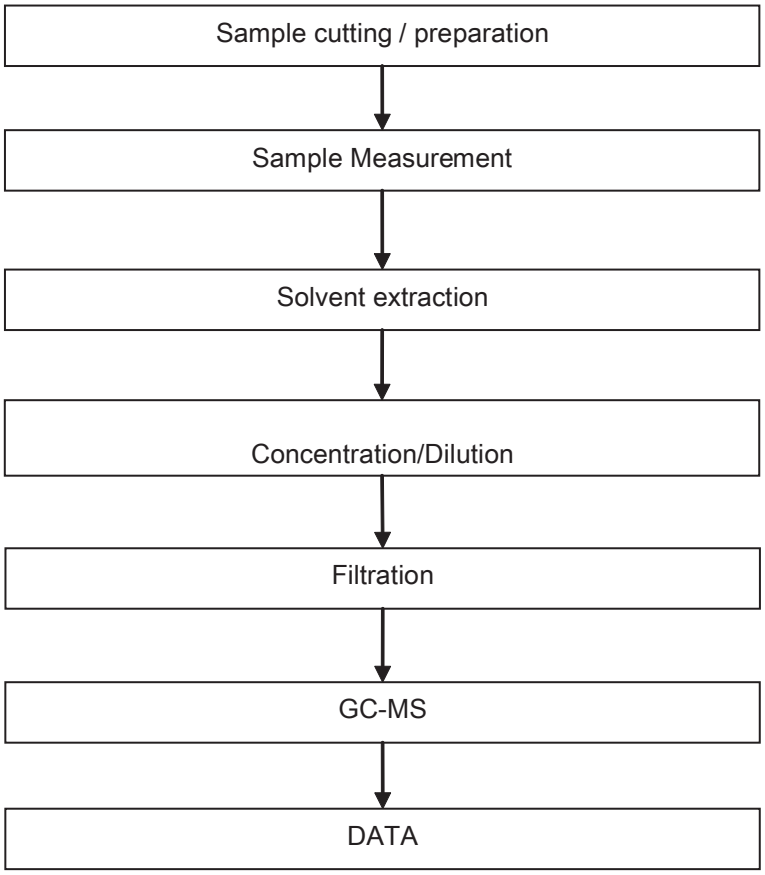


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

ATTACHMENTS

Phthalates Testing Flow Chart

1) Name of the person who made testing: Sunny Hu
2) Name of the person in charge of testing: Qiong Liu



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Sample photo:

CAN16-258378.001

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Report

No. SHAEC1704267103 Date: 16 Mar 2017

COLORANT CHROMATICS TRADING(SHANGHAI)CO.,LTD

2F,BLOCK C,VI-HUB@JINQIAO,200 JINSU ROAD,PUDONG,SHANGHAI

The following sample(s) was/were submitted and identified on behalf of the clients as : FEP Colormasterbatch

SGS Job No. :	SP17-007776 - SH
Lot No. :	5463152
Date of Sample Received :	13 Mar 2017
Testing Period :	13 Mar 2017 - 16 Mar 2017
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) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Marry Ma
Approved Signatory

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA17-042671.002	Brown solid pellet

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 AAS.
(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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
(6) With reference to IEC 62321-8 Ed.1.0 (111/321/CD), determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	*002*
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Item(s)	Limit	Unit	MDL	*002*
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
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

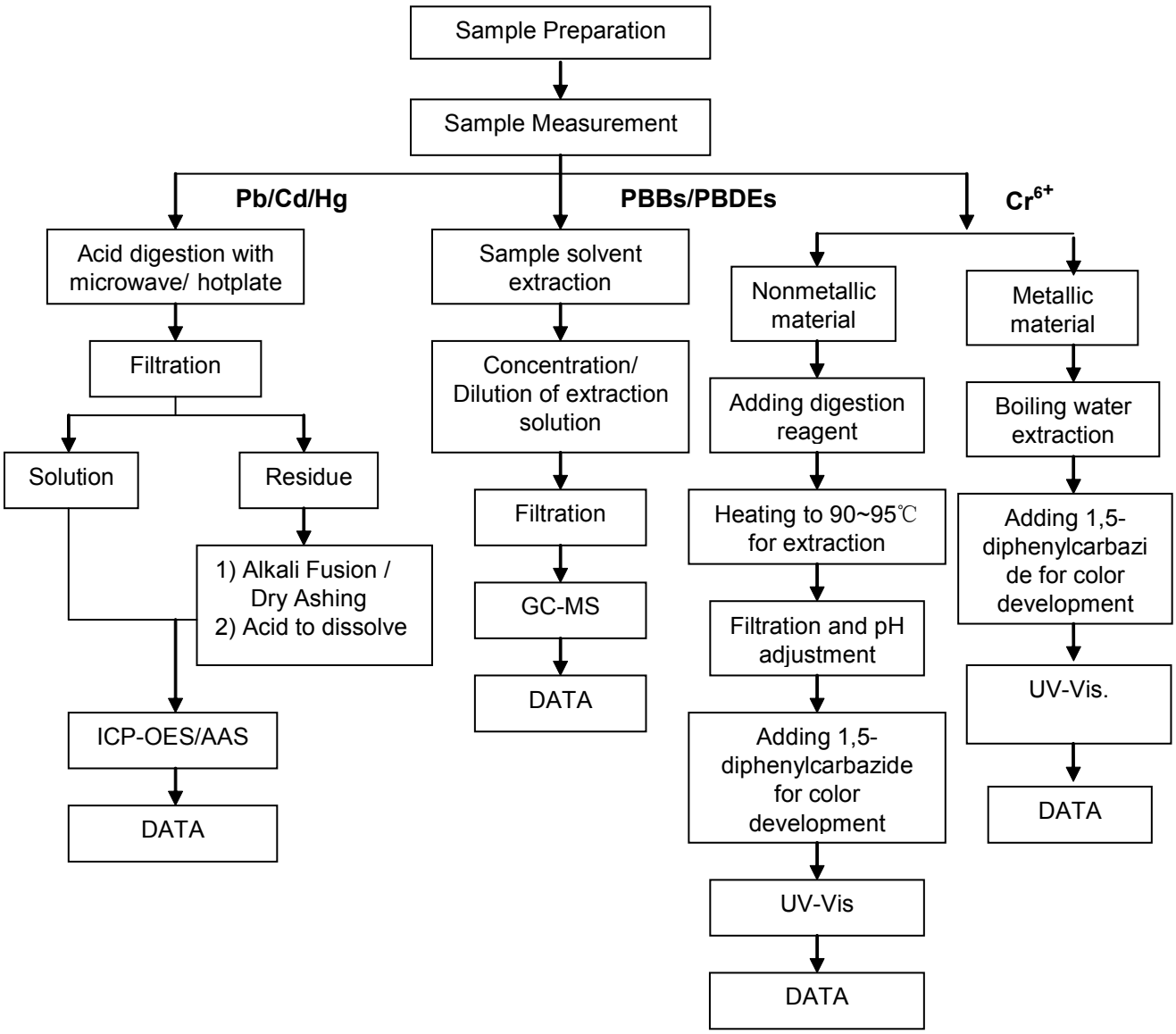
(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
(2) On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
(3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
(4) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
(5) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Meria Jin/Gary Xu/Sean Li/Sielina Song
2) Name of the person in charge of testing: Jan Shi/Jessy Huang/Luna Xu/Shara Wang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)

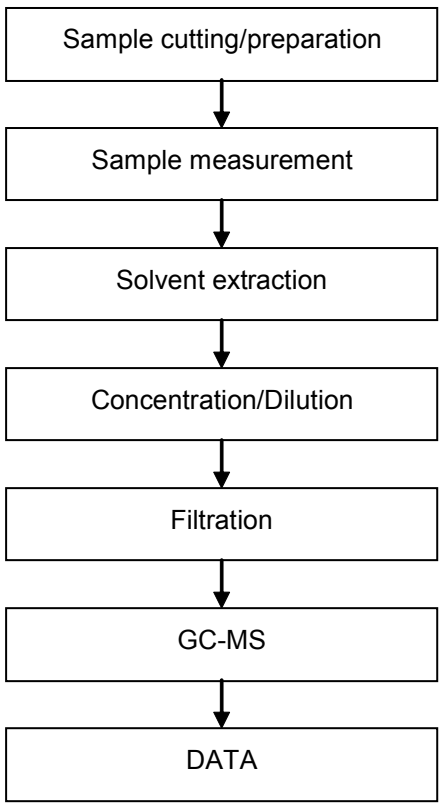


3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

ATTACHMENTS

Phthalates Testing Flow Chart

1) Name of the person who made testing: Sherlock Gao
2) Name of the person in charge of testing: Jessy Huang



3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Sample photo:

SHA17-042671.002

SGS authenticate the photo on original report only

*** End of Report ***

3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Report

Report No. ECL01J004573

Applicant TAIZHOU DONGYUAN ELECTRONICS CO., LTD
Address NO.6,XUHE ROAD,GAOGANG DISTRICT,TAIZHOU CITY,JIANGSU PROVINCE

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name	Silver plated copper clad steel
Part No.	Iron. Copper Silver
Sample Received Date	Jan. 20, 2017
Testing Period	Jan. 20, 2017 to Jan. 24, 2017
Test Requested	As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I) , Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)in the submitted sample(s).
Test Method	Please refer to the following page(s).
Test Result(s)	Please refer to the following page(s).

Tested by Zhou Hongxia Reviewed by Summer Xu

Approved by Su Hongwei Date Jan. 24, 2017

Su Hongwei
Senior Laboratory Manager

No. R285212650

Centre Testing International Pinbiao(Shanghai) Co., Ltd. No.1996,Xinjinqiao Road, Pudong New District,Shanghai,China

Test Report

Report No. ECL01J004573

Test Method

Tested Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013 Ed.1.0 Refer to IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013 Ed.1.0 Refer to IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury(Hg)	IEC 62321-4:2013 Ed.1.0 Refer to IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-1:2015	UV-Vis
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Fluorine (F)	Refer to BS EN 14582:2007	IC
Chlorine (Cl)	Refer to BS EN 14582:2007	IC
Bromine (Br)	Refer to BS EN 14582:2007	IC
Iodine (I)	Refer to BS EN 14582:2007	IC
Perfluorooctanoic Acid (PFOA)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
Perfluorooctane Sulfonates (PFOS)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS

Test Report

Report No. ECL01J004573

Test Result(s)

Tested Item(s)	Result			MDL
	1	2	3	
Lead(Pb)	N.D.	N.D.	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	N.D.	N.D.	2 mg/kg
Mercury(Hg)	N.D.	N.D.	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.▼	N.D.▼	N.D.▼	0.10μg/cm^2(LOQ)

Tested Item(s)	Result			MDL
	1	2	3	
Polybrominated Biphenyls(PBBs)				
Monobromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Polybrominated Diphenyl Ethers(PBDEs)				
Monobromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg

Test Report

Report No. ECL01J004573

Tested Item(s)	Result	MDL
	1	
Halogen		
Fluorine (F)	N.D.	10mg/kg
Chlorine (Cl)	N.D.	10mg/kg
Bromine (Br)	N.D.	10mg/kg
Iodine (I)	N.D.	10mg/kg

Tested Item(s)	Result	MDL
	3	
Perfluorooctanoic Acid (PFOA)	N.D.	0.5μg/m^2
Perfluorooctane Sulfonates(PFOS)	N.D.	0.5μg/m^2

Tested Sample/Part Description

1. Metal base
2. Cupreous plating
3. Silvery plating

Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL or LOQ)

-mg/kg = ppm = parts per million

-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm^2

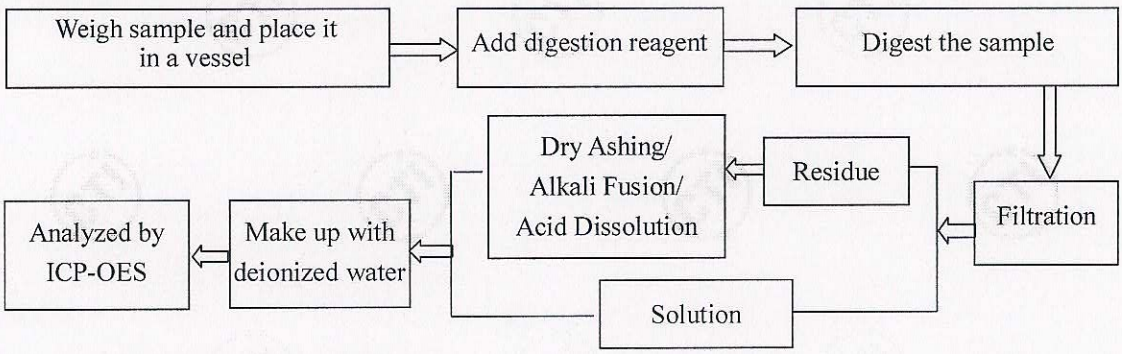
-▼The sample is negativefor Cr(VI) – The Cr(VI) concentration is below 0.10μg/cm^2. The coating is considered a non-Cr(VI) based coating.

Test Report

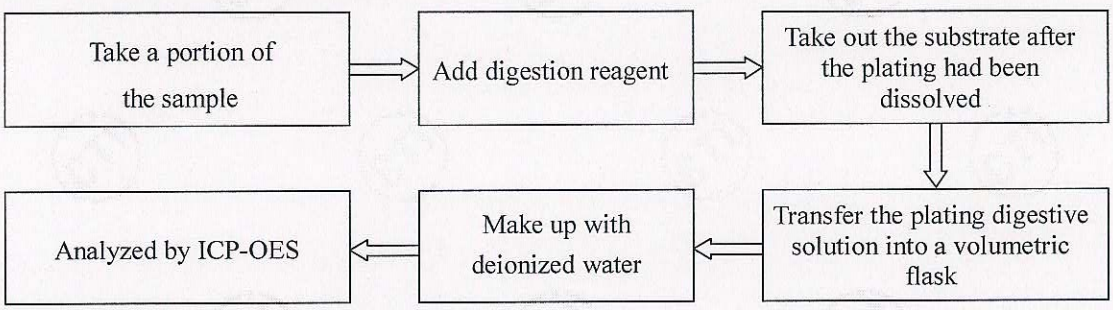
Test Process

1. Lead(Pb), Cadmium(Cd)

(1) IEC 62321-5:2013 Ed.1.0

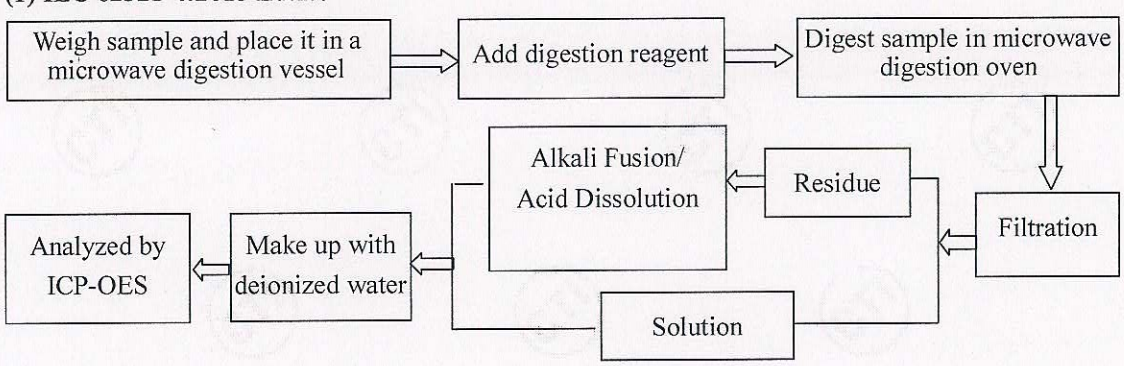


(2) Refer to IEC 62321-5:2013 Ed.1.0



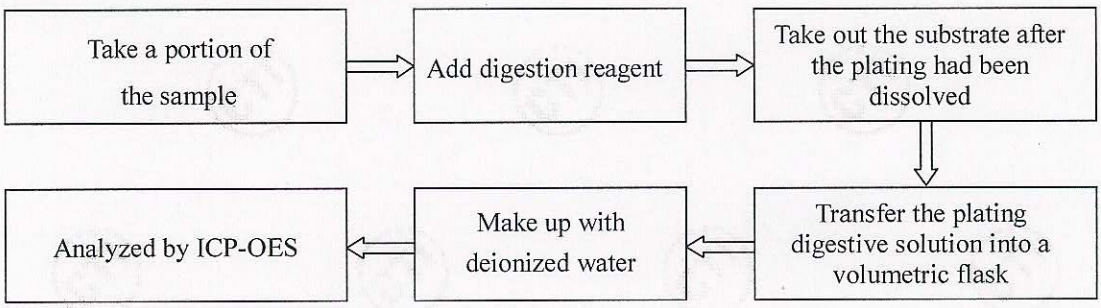
2. Mercury(Hg)

(1) IEC 62321-4:2013 Ed.1.0

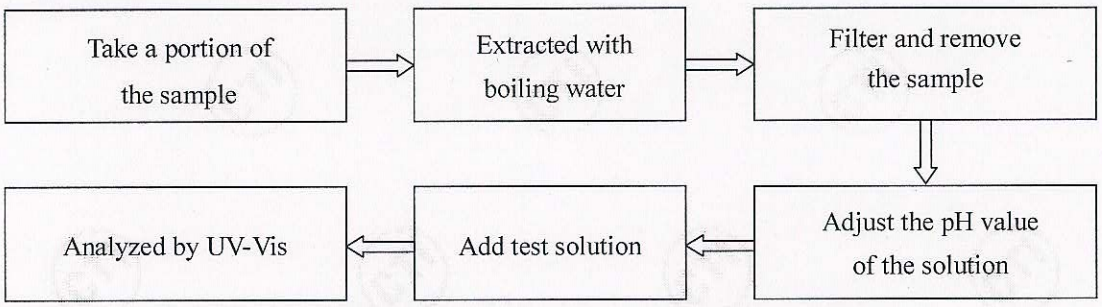


Test Report

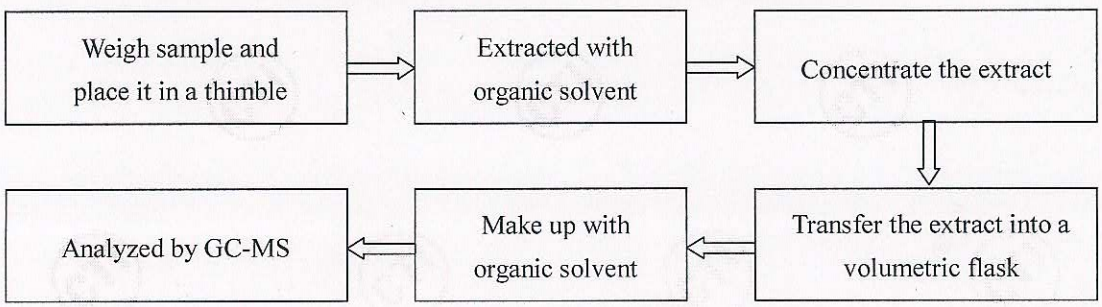
(2) Refer to IEC 62321-4:2013 Ed.1.0



3. Hexavalent Chromium (Cr(VI))

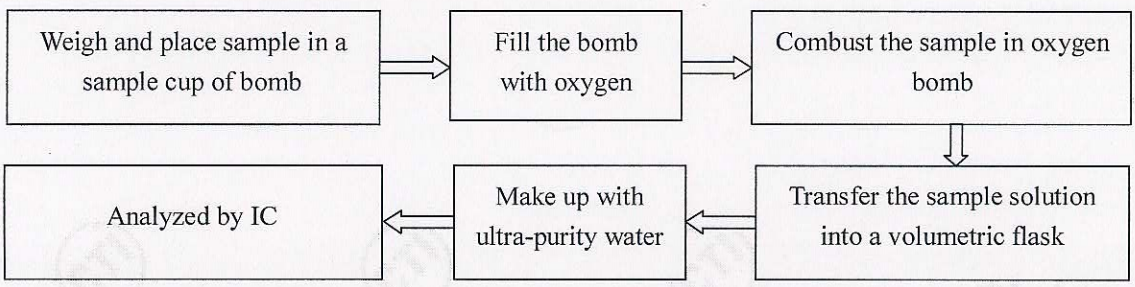


4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs)

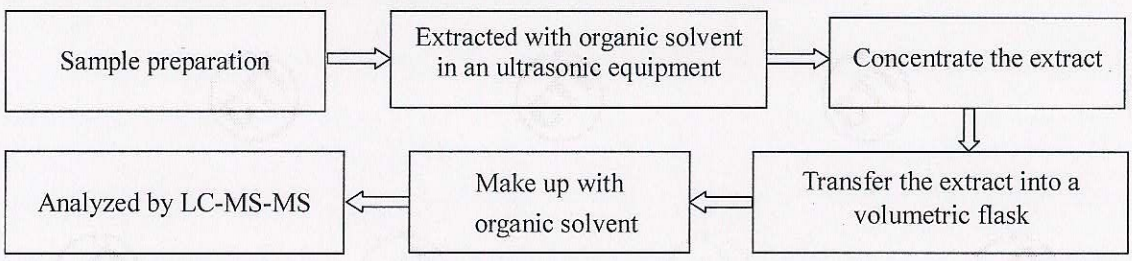


Test Report

5. Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I)



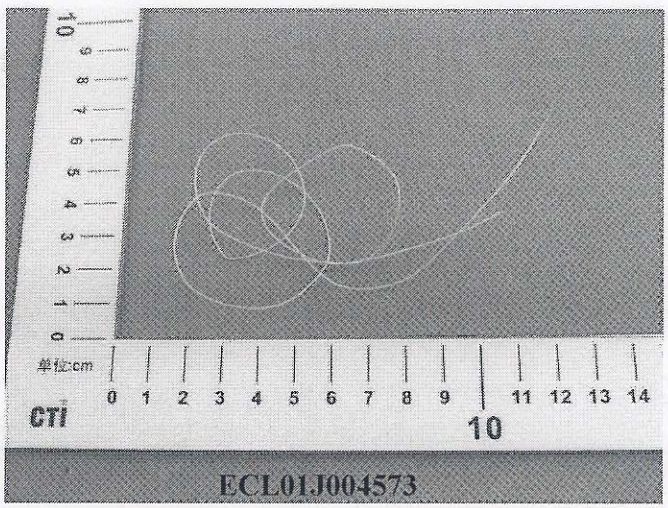
6.Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)



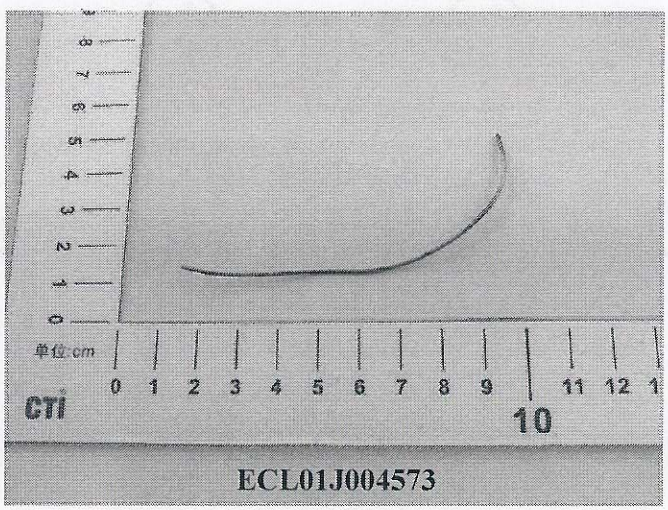
Test Report

Report No. ECL01J004573

Photo(s) of the sample(s)



1,3



2

*** End of Report ***

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

DAIKIN FLUOROCHEMICALS (CHINA) CO., LTD.

NO.8 JIN YU ROAD (WEST) ADVANCED MATERIALS INDUSTRIAL PARK, CHANGSHU, JIANGSU 215522, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : NEOFLON FEP

SGS Job No. :	SP17-001418 - SH
Model No. :	NP-1105
Date of Sample Received :	13 Jan 2017
Testing Period :	13 Jan 2017 - 18 Jan 2017
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 Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) do not exceed the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

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

Marry Ma
Approved Signatory

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA17-009041.010	Translucent solid pellet

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to 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 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

Test Item(s)	Limit	Unit	MDL	*010*
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

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Item(s)	Limit	Unit	MDL	*010*
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 RoHS Directive (EU) 2015/863.
(2) On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
(3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
(4) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
(5) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Halogen

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

Test Item(s)	Unit	MDL	*010*
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

Element(s)

Test Method : With reference to ASTM D 4004-06(2012), analysis was performed by ICP-OES.

3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Item(s)	Unit	MDL	*010*
Antimony (Sb)	mg/kg	50	ND

Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCP)

Test Method : With reference to ISO 18219: 2015, analysis was performed by GC-NCI-MS

Test Item(s)	Unit	MDL	*010*
Alkanes C10-C13, chloro (short-chain chlorinated paraffins) (SCCP)	mg/kg	50	ND

Hexabromocyclododecane (HBCDD)

Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	*010*
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Phthalates

Test Method : With reference to EN 14372:2004, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	010
Dibutyl Phthalate (DBP)	84-74-2	%	0.003	ND
Benzylbutyl Phthalate (BBP)	85-68-7	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	117-81-7	%	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.01	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.01	ND
Diisobutyl Phthalate (DIBP)	84-69-5	%	0.003	ND

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Item(s)	CAS NO.	Unit	MDL	010
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND

Notes :

(1) DBP,BBP,DEHP Reference information: Entry 51 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC):

i) Shall not be used as substances or in mixtures, in concentrations greater than 0,1 % by weight of the plasticised material, in toys and childcare articles.

ii) Toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

PFOS (Perfluorooctane Sulfonates) and PFOA (Perfluorooctanoic Acid)

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

Test Item(s)	Limit	Unit	MDL	010
Perfluorooctanesulfonate (PFOS)^	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

Notes :

(1) Max. limit specified by commission regulation (EU) No. 757/2010 amending regulation (EC) No 850/2004

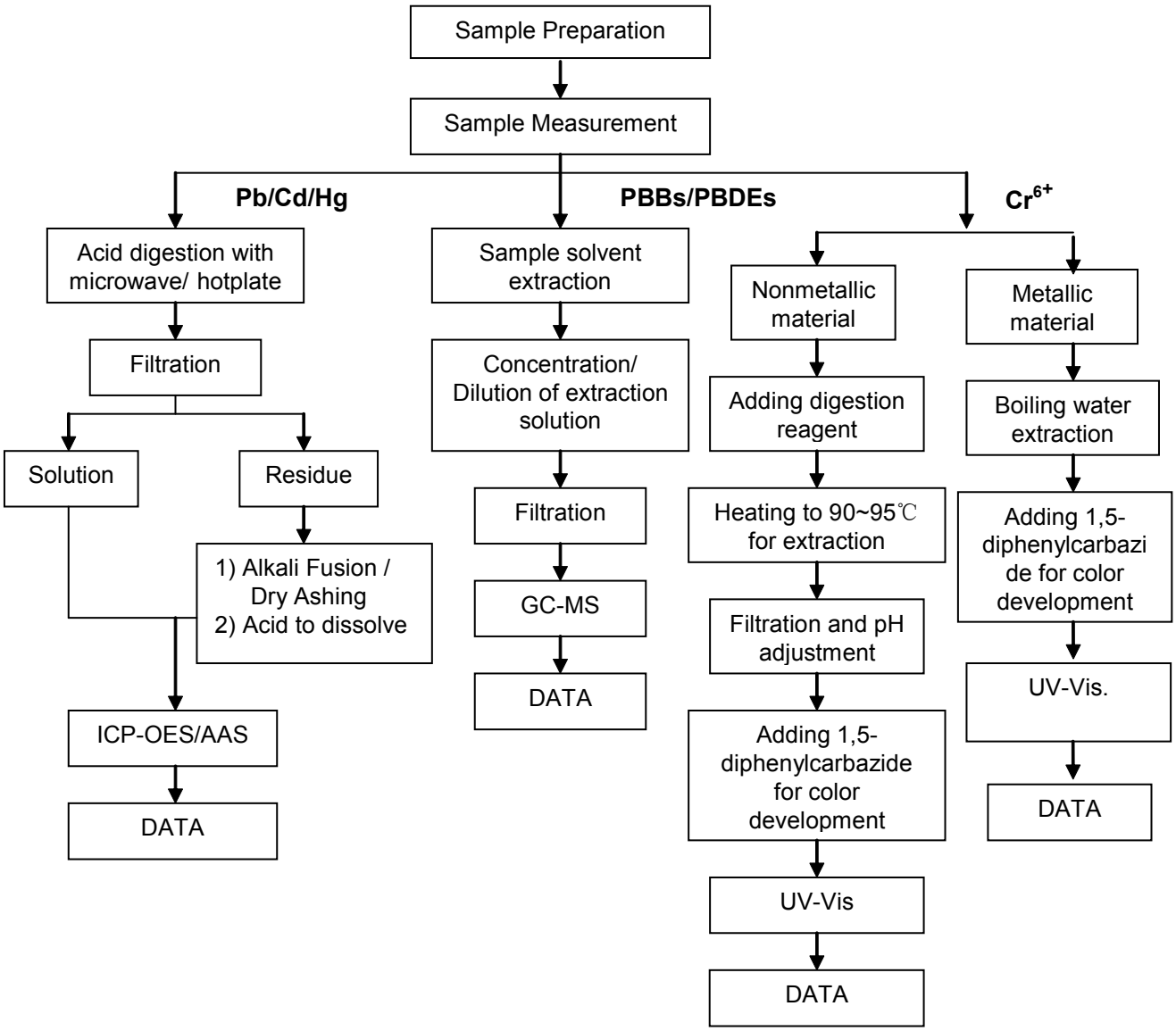
(2)^ PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluoroctanesulfonic acid, Perfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamide, N-Ethylperfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamidoethanol and N-Ethylperfluoroctane sulfonamidoethanol.

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Meria Jin/Gary Xu/Sean Li/Sielina Song
2) Name of the person in charge of testing: Jan Shi/Jessy Huang/Luna Xu/Shara Wang
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)

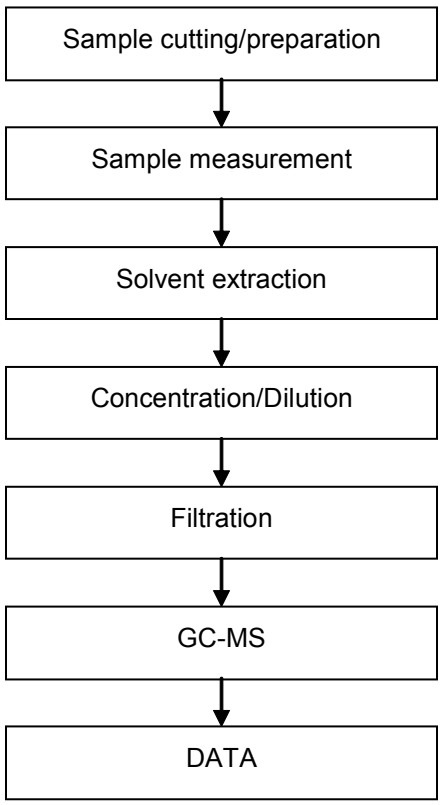


3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

ATTACHMENTS

Phthalates Testing Flow Chart

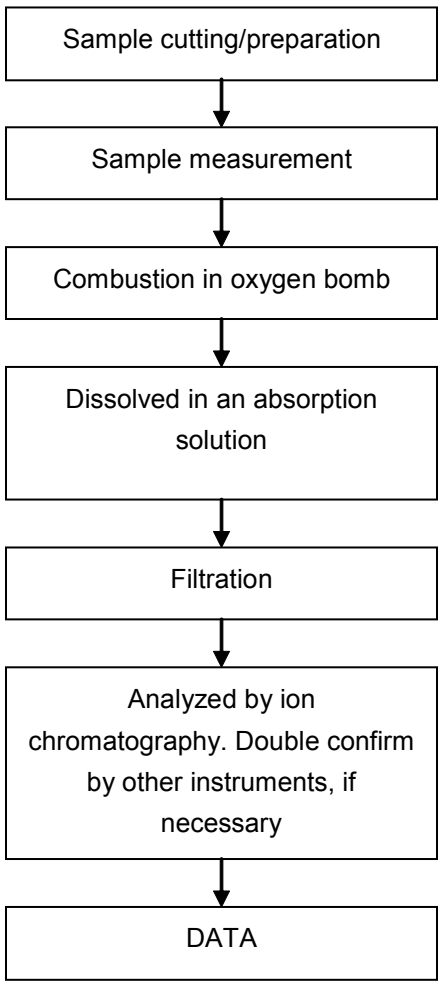
1) Name of the person who made testing: Sherlock Gao
2) Name of the person in charge of testing: Jessy Huang



ATTACHMENTS

Halogen Testing (oxygen bomb) Flow Chart

1) Name of the person who made testing: Kevin Xu
2) Name of the person in charge of testing: Sisily Yin

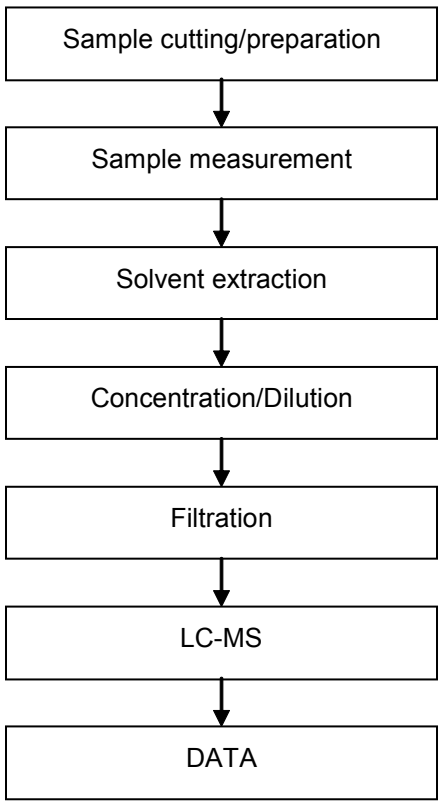


3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

ATTACHMENTS

PFOS/PFOA Testing Flow Chart

1) Name of the person who made testing: Jane Yang
2) Name of the person in charge of testing: Myra Ma

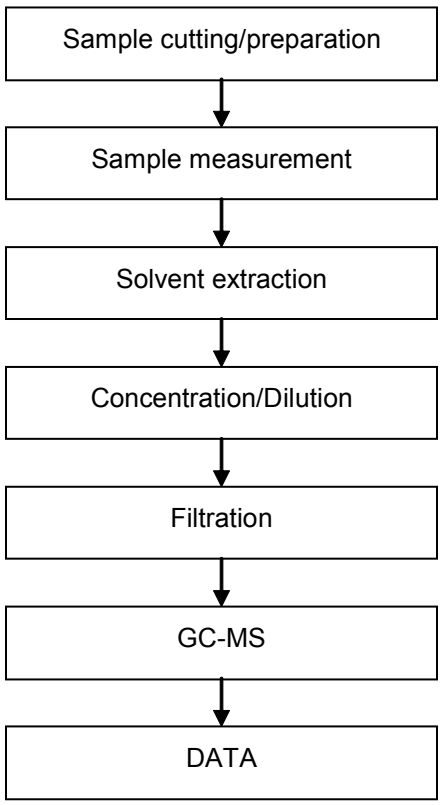


3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

ATTACHMENTS

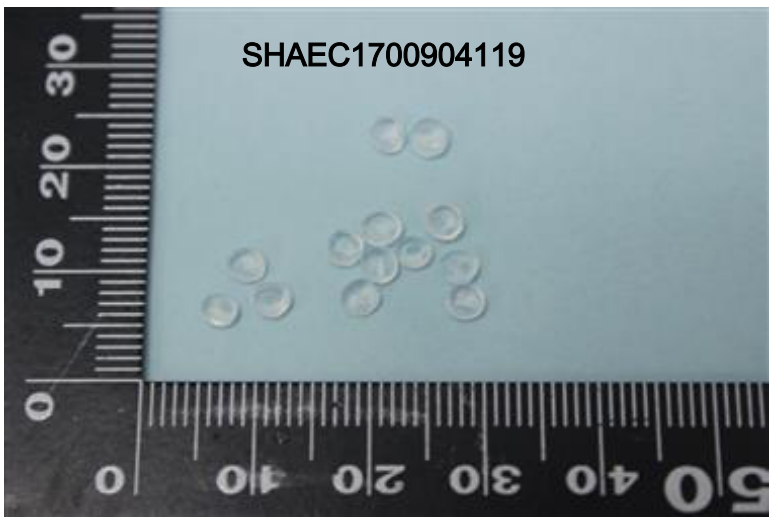
HBCDD Testing Flow Chart

1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Jessy Huang



3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Sample photo:



SHA17-009041.010

SGS authenticate the photo on original report only

*** End of Report ***

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. Testing Center-Chemical Laboratory
3/F,Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

TÜVRheinland®

Prüfbericht - Nr.: 0114044541d5 002

Test Report No.:

Auftraggeber: *Client:*	Chi Mei Corporation 59-1, San Chia, Jen Te, Tainan City 71702, Taiwan, R.O.C.
Gegenstand der Prüfung: *Test Item:*	ACRYLONITRILE-BUTADIENE-STYRENE COPOLYMER
Bezeichnung: *Identification:*	POLYLAC® PA-757 / Nature
Anlieferungszustand: *Delivery condition:*	apparent good
Eingangsdatum: *Date of Receipt:*	2015-12-14
Prüfort: *Testing location:*	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfgrundlage: *Test specification:*	According to RoHS (recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU last amended by (EU) 2015/863: Total Content of Lead, Cadmium, Mercury, Chromium VI, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers; and Benzylbutyl phthalate (BBP), Dibutyl phthalate (DBP), Bis(2-ethylhexyl) phthalate (DEHP), Diisobutyl phthalate (DIBP)
Prüfergebnis: *Test result:*	According to the kind and extend of tests performed the above mentioned test item passed the test specification.

geprüft/ *tested by:*

2016-01-22	Anne Chen /Coordinator	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert/ *checked by:*

2016-01-22	Carl Chang /Department Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges/ *Other Aspects:*

Test period: 2015-12-14 – 2016-01-04
This test report supersedes test report no. 0114044541d5 001.

Abkürzungen:	***ok / P***	***=***	***entspricht Prüfgrundlage***	***Abbreviations:***	***ok / P***	***=***	***passed***
	fail / F	***=***	***entspricht nicht Prüfgrundlage***		***fail / F***	***=***	***failed***
	n.a. / N	***=***	***nicht anwendbar***		***n.a. / N***	***=***	***not applicable***

Test Report No. : 0114044541d5 002 2016-01-22
Customer : Chi Mei Corporation
Test Method : Total Cadmium, Lead, Mercury, Chromium
- Ref. to IEC 62321-4:2013 and IEC 62321-5:2013
Chromium (VI) – Ref. to EN 62321:2009 (IEC 62321:2008)
(for Leather Material, Chromium (VI) - Ref. to ISO 17075:2007)
PBBs, PBDEs – Ref. to IEC 62321-6:2015

Sample Material Lab.-No.		LoD	POLYLAC® PA-757 plastic / beige TCL151214-36
Cadmium (Cd)	mg/kg	2	n.d.
Lead (Pb)	mg/kg	2	n.d.
Mercury (Hg)	mg/kg	2	n.d.
Chromium VI (Cr VI)	mg/kg	2	n.d.
Sum of Polybrominated biphenyls (PBBs)	mg/kg	-	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 Polybrominated diphenyl ethers (PBDEs)	mg/kg	-	n.d.
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.

Notes:
- n.d. - not detected
- n.a. - not applicable
- LoD - Limit of Detection
- mg/kg is equal to ppm (parts per million)

	Cd	Cr(VI)	Pb	Hg	PBBs	PBDEs
Maximum permissible Limit acc. to 2011/65/EU (mg/kg)	100	1000	1000	1000	1000	1000

TÜV Rheinland Taiwan Ltd. Chemical Laboratory

Test Report No. : 0114044541d5 002 2016-01-22
Customer : Chi Mei Corporation
Test Method : BBP/DBP/DEHP/DIBP - Organic solvent extraction, analyzed by GCMS (Ref. to DIN EN 62321-8:2014/ IEC 62321-8 (111/321/CD))

Sample Material Lab.-No.		LoD	POLYLAC® PA-757 plastic / beige TCL151214-36
Diethylhexylphthalate (DEHP)	mg/kg	50	n.d.
Dibutylphthalate (DBP)	mg/kg	50	n.d.
Benzylbutylphthalate (BBP)	mg/kg	50	n.d.
Diisobutylphthalate (DIBP)	mg/kg	50	n.d.

Notes:
- n.d. - not detected
- n.a. - not applicable
- LoD - Limit of Detection
- mg/kg is equal to ppm (parts per million)

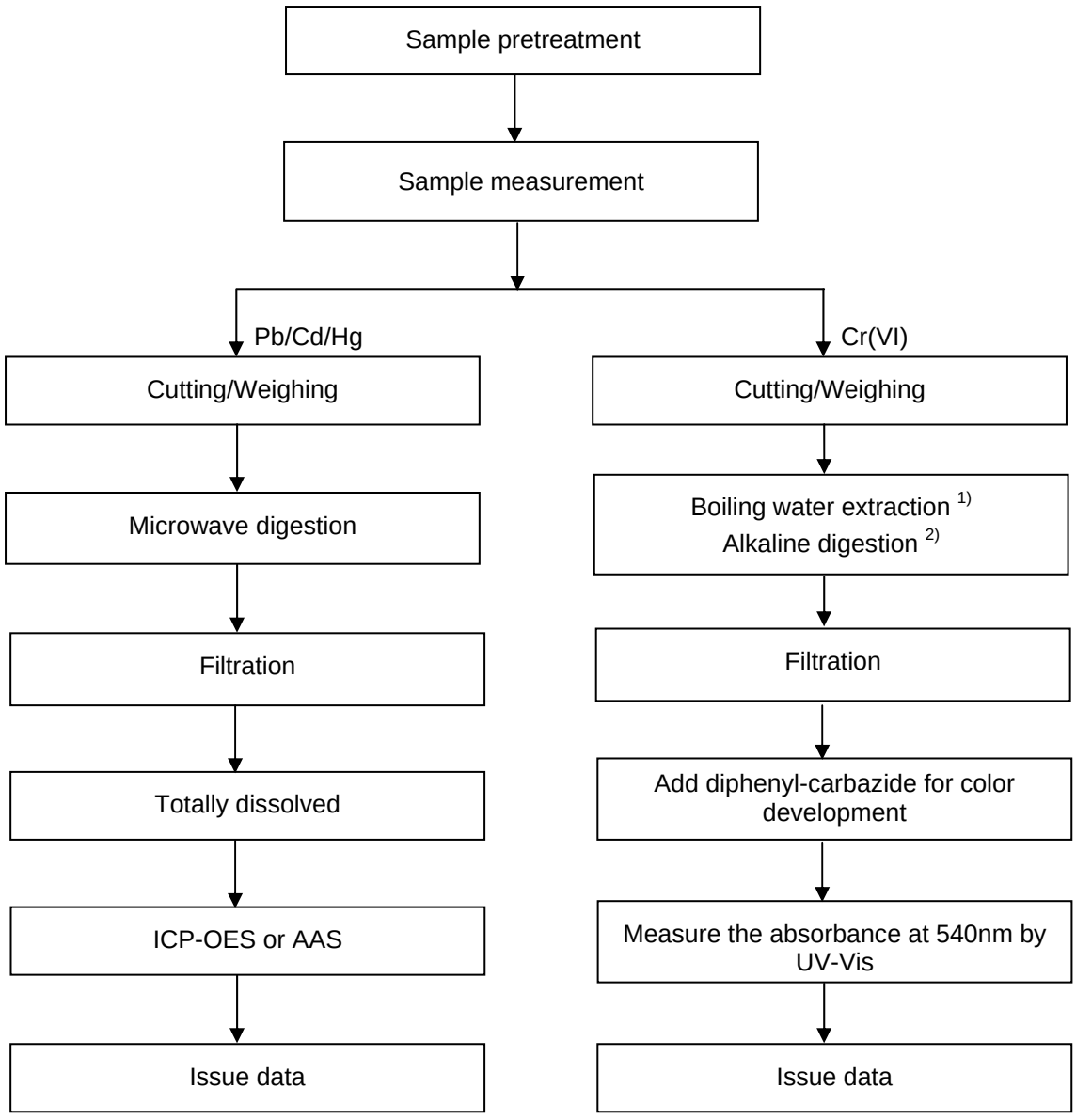
	BBP	**DBP**	**DEHP**	**DIBP**
Maximum permissible Limit acc. to (EU) 2015/863 (mg/kg)	1000	1000	1000	1000

Test Sample

Test Report No. : 0114044541d5 002 2016-01-22
Customer : Chi Mei Corporation

Testing procedure:

RoHS (Pb, Cd, Hg, Cr(VI))

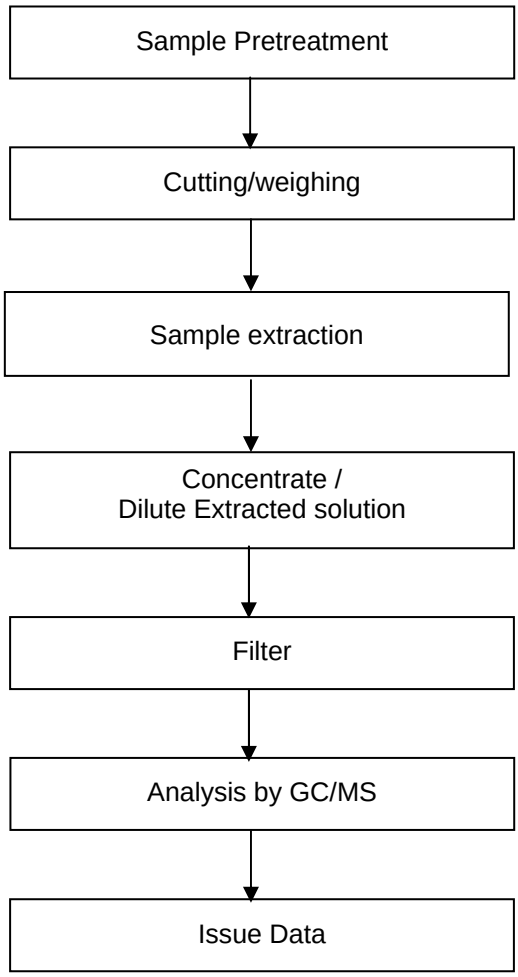


Notes: 1) For metallic material
2) For non-metallic material

Test Report No. : 0114044541d5 002 2016-01-22
Customer : Chi Mei Corporation

Testing procedure:

RoHS (PBBs/PBDEs), DEHP/DBP/BBP/DIBP



--- End of Test-Report ---

测试报告

No. CANEC1703403505　　日期: 2017年03月14日　第1页,共6页

广东彩虹德记塑胶颜料股份有限公司
东莞市凤岗镇福民工业区

以下测试之样品是由申请者所提供及确认：请见备注

SGS工作编号：	CP17-010010 - SZ
样品接收日期：	2017年03月08日
测试周期：	2017年03月08日 - 2017年03月14日
测试要求：	根据客户要求测试
测试方法：	请参见下一页
测试结果：	请参见下一页
结论：	基于所送样品进行的测试，镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)的测试结果不超过欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司广州分公司
授权签名

梁康宁

Alkene Liang梁康宁
批准签署人

备注: 根据客户申请, SGS出具了此中文报告, 英文版本可根据客户要求提供. (The Chinese test report is issued according to the applicant's request. The English version is available from SGS if further needed)

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	CAN17-034035.003	黑色塑胶粒

备注 :

(1) 1 mg/kg = 1 ppm = 0.0001%

(2) MDL = 方法检测限

(3) ND = 未检出 (< MDL)

(4) "-" = 未规定

RoHS 指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法 : (1)参考IEC 62321-5:2013，用ICP-OES测定镉的含量。
(2)参考IEC 62321-5:2013，用ICP-OES测定铅的含量。
(3)参考IEC 62321-4:2013，用ICP-OES测定汞的含量。
(4)参考IEC 62321:2008，用紫外-可见分光光度计比色法测定六价铬的含量。
(5)参考IEC 62321-6:2015，用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚) 的含量。

测试项目	限值	单位	MDL	*003*
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	ND
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))	1,000	mg/kg	2	ND
多溴联苯之和(PBBs)	1,000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1,000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国 · 广州 · 经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试项目	限值	单位	MDL	003
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND

备注：

(1) 最大允许极限值引用自RoHS指令(EU) 2015/863 。

(2) 2015年6月4 号发表在欧盟官方杂志（官方公报）上的RoHS指令(EU) 2015/863附录II限值中还包括邻苯二甲酸酯BBP，DBP，DEHP和DIBP。新的指令限制了电子电器产品的每一个均一材质中邻苯二甲酸酯含量不得超过0.1%。

(3) 2021年7月22号开始，DEHP, BBP, DBP 和 DIBP的限制适用于医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。

(4) DEHP, BBP, DBP 和 DIBP的限制不适用于2019年7月22日前投放市场的电缆及电子电气产品中用于维修、重复利用、功能更新及容量提升的备用配件以及2021年7月22日前投放市场的医疗器械，包括体外医疗器械，监控仪表，包括工业监测和控制仪器。

(5) DEHP、BBP 和 DBP的限制不适用于玩具产品，因为No.1907/2006附录XVII第51条已对玩具产品中的DEHP、BBP 和 DBP含量进行了限制。

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

备注

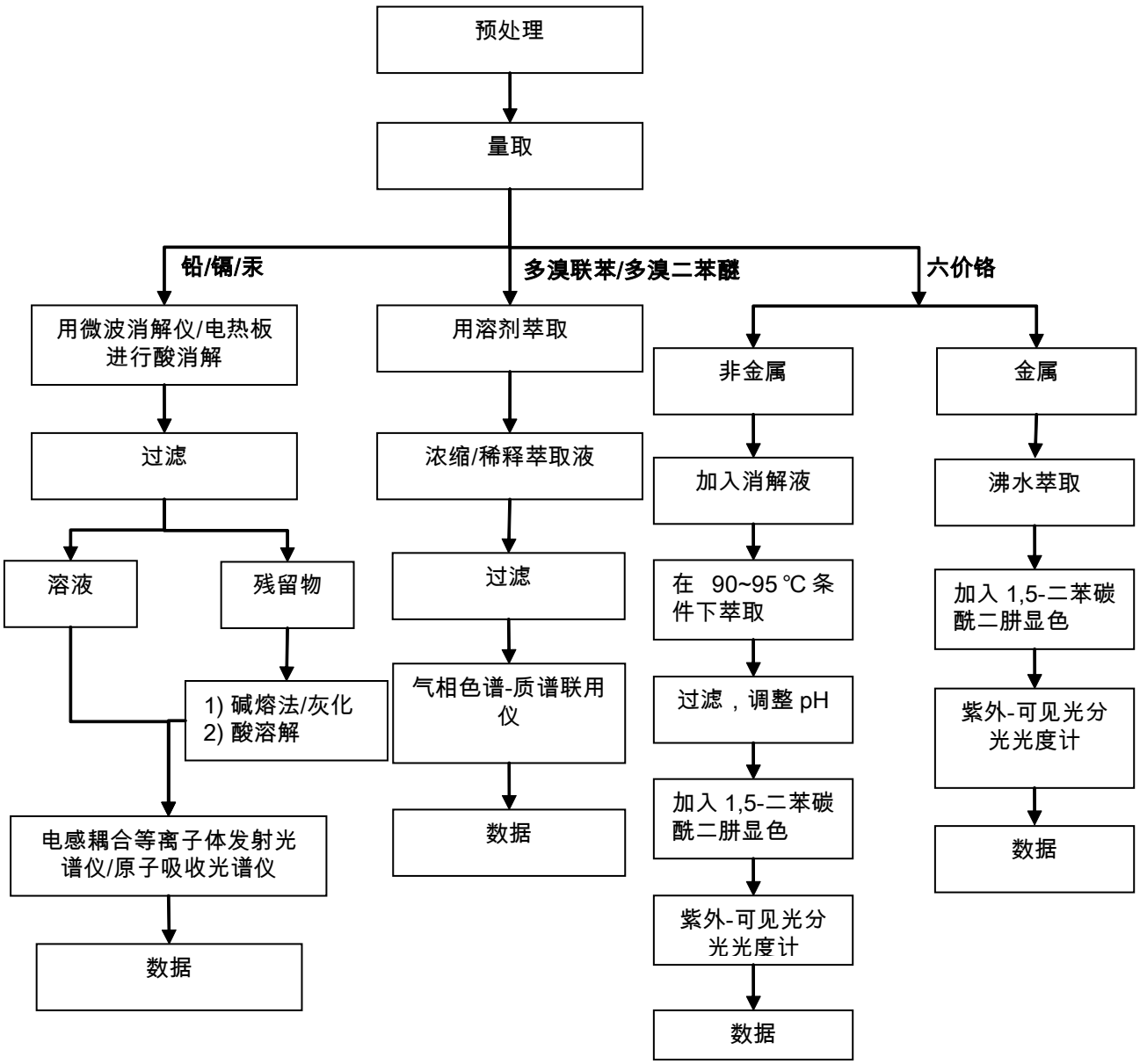
801	802	2013	2014	2017	3014	3040	3050	227
525	8101	8102	8201	8202	8203	8204	8207	808
806	2014B	8100	8206	3050B	MIXTURE			

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs 测试流程图

1) 分析人员：张梓路 / 胡香云
2) 项目负责人：汪丹 / 刘琼
3) 样品按照下述流程被完全消解（六价铬和多溴联苯/多溴二苯醚测试除外）。



样品照片:

CAN17-034035.003

此照片仅限于随SGS正本报告使用

*** 报告完 ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试报告

No. CANEC1712499206　　日期: 2017年07月14日　第1页,共20页

建滔积层板控股有限公司
香港新界沙田安耀街三号汇达大厦二十三楼

以下测试之样品是由申请者所提供及确认 : KB-6160

SGS工作编号 :	CP17-036234 - GZ
型号 :	KB-6160
客户参考信息 :	KB-6060,KB-6160A,KB-6060A,KB-6160C,KB-6060C,KB-6150,KB-6050,KB-6150C,KB-6050C
样品接收日期 :	2017年06月30日
测试周期 :	2017年06月30日 - 2017年07月07日
测试要求 :	根据客户要求测试
测试方法 :	请参见下一页
测试结果 :	请参见下一页
结论 :	基于所送样品进行的测试，镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯（如邻苯二甲酸二丁酯 (DBP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二(2-乙基已基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP)）的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务有限公司广州分公司
授权签名

Almay Gao高志梅
批准签署人

备注: 本报告是编号为CANEC1712499205报告的中文版本。

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国 · 广州 · 经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试结果 :

测试样品描述 :

样品编号	SGS样品ID	描述
SN1	CAN17-124992.002	黄色片（取无红色“KB”印字的黄色部位测试）

备注 :

(1) 1 mg/kg = 0.0001%

(2) MDL = 方法检测限

(3) ND = 未检出 (< MDL)

(4) "-" = 未规定

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法 : (1)参考IEC 62321-5:2013，用ICP-OES测定镉的含量。
(2)参考IEC 62321-5:2013，用ICP-OES测定铅的含量。
(3)参考IEC 62321-4:2013，用ICP-OES测定汞的含量。
(4)参考IEC 62321-7-2:2017，用UV-Vis分析六价铬含量和/或者参考IEC 62321-5:2013，用ICP-OES测试总铬含量。
(5) 参考IEC 62321-6:2015，用GC-MS测定PBBs(多溴联苯)和PBDEs(多溴二苯醚) 的含量
(6) 参考IEC 62321-8 :2017 ，用GC-MS测定邻苯二甲酸酯的含量。

测试项目	限值	单位	MDL	*002*
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1,000	mg/kg	2	8
汞 (Hg)	1,000	mg/kg	2	ND
六价铬(Cr(VI))	1,000	mg/kg	8	ND
多溴联苯之和(PBBs)	1,000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1,000	mg/kg	-	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试项目	限值	单位	MDL	*002*
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基已基)酯(DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND

备注 :

(1)最大允许极限值引用自RoHS指令(EU) 2015/863。IEC 62321系列等同于 EN 62321系列http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2)检测的铬(Cr)含量是“ND”，则六价铬(Cr(VI))含量也是“ND”，不需要进行六价铬(Cr(VI))的确认性测试。

(3)若铬(Cr)含量超过六价铬(Cr(VI))方法检出限，需要进行六价铬(Cr(VI))的确认性测试。

卤素

测试方法 : 参考EN 14582:2016，用 IC分析。

测试项目	单位	MDL	*002*
氟 (F)	mg/kg	50	775
氯 (Cl)	mg/kg	50	420
溴 (Br)	mg/kg	50	67516
碘 (I)	mg/kg	50	ND

元素分析

测试方法 : 参考US EPA方法 3052:1996，用ICP-OES分析。

测试项目	单位	MDL	*002*
砷 (As)	mg/kg	10	ND
锑 (Sb)	mg/kg	10	ND
铍(Be)	mg/kg	5	ND

四溴双酚-A

测试方法： 参照 US EPA 3540C: 1996方法测定, 采用GC-MS&HPLC-MS进行分析。

测试项目	单位	MDL	*002*
四溴双酚-A	mg/kg	10	ND

甲醛

测试方法： SGS内部方法（GZTC CHEM-TOP-059-03）测定，用UV-Vis分析。

测试项目	单位	MDL	*002*
甲醛	g/kg	0.02	ND

红磷

测试方法： 参考SGS内部方法(GZTC CHEM-TOP-215-01)，用PY-GC-MS&ICP-OES分析。

测试项目	单位	MDL	*002*
红磷	mg/kg	500	ND

聚氯乙烯(PVC)

测试方法： SGS内部方法(GZTC CHEM-TOP-066)，用FTIR分析。

测试项目	CAS NO.	单位	MDL	*002*
聚氯乙烯(PVC)	9002-86-2	-	-	**阴性**

备注：

(1) 阴性 = 未检测到，阳性 = 已检测到

六溴环十二烷(HBCDD)

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试方法： 参考 IEC 62321:2008, 用 GC-MS分析。

测试项目	单位	MDL	*002*
六溴环十二烷(HBCDD)	mg/kg	10	ND

邻苯二甲酸盐(或酯)

测试方法： 参考EN 14372: 2004的方法测定, 采用GC-MS进行分析。

测试项目	CAS NO.	单位	MDL	002
邻苯二甲酸二丁酯 (DBP)	84-74-2	%(w/w)	0.003	ND
邻苯二甲酸丁苄酯 (BBP)	85-68-7	%(w/w)	0.003	ND
邻苯二甲酸二(2-乙基己基)酯 (DEHP)	117-81-7	%(w/w)	0.003	ND
邻苯二甲酸二异壬酯 (DINP)	28553-12-0 / 68515-48-0	%(w/w)	0.010	ND
邻苯二甲酸二正辛酯 (DNOP)	117-84-0	%(w/w)	0.003	ND
邻苯二甲酸二异癸酯 (DIDP)	26761-40-0 / 68515-49-1	%(w/w)	0.010	ND
邻苯二甲酸二甲酯 (DMP)	131-11-3	%(w/w)	0.003	ND
邻苯二甲酸二乙酯 (DEP)	84-66-2	%(w/w)	0.003	ND
邻苯二甲酸二丙酯 (DPrP)	131-16-8	%(w/w)	0.003	ND
邻苯二甲酸二异丁酯 (DIBP)	84-69-5	%(w/w)	0.003	ND
邻苯二甲酸二正戊酯 (DnPP)	131-18-0	%(w/w)	0.003	ND
邻苯二甲酸二正己酯 (DnHP)	84-75-3	%(w/w)	0.003	ND
邻苯二甲酸二环己酯 (DCHP)	84-61-7	%(w/w)	0.003	ND
邻苯二甲酸二苯酯 (DPhP)	84-62-8	%(w/w)	0.003	ND
邻苯二甲酸二苄酯 (DBzP)	523-31-9	%(w/w)	0.003	ND
邻苯二甲酸二壬酯 (DNP)	84-76-4	%(w/w)	0.003	ND
邻苯二甲酸二异辛酯 (DIOP)	27554-26-3	%(w/w)	0.010	ND
邻苯二甲酸二(2-甲氧基乙基)酯 (DMEP)	117-82-8	%(w/w)	0.003	ND
邻苯二甲酸二烯丙酯 (DAP)	131-17-9	%(w/w)	0.003	ND
邻苯二甲酸癸基辛基酯 (nDnOP)	119-07-3	%(w/w)	0.003	ND
邻苯二甲酸二癸酯 (DnDP)	84-77-5	%(w/w)	0.003	ND
邻苯二甲酸二异戊酯 (DIPP)	605-50-5	%(w/w)	0.003	ND
邻苯二甲酸正戊基异戊基酯 (nPIPP)	776297-69-9	%(w/w)	0.003	ND
邻苯二甲酸二(C6-8支链)烷基酯(富C7) (DIHP)	71888-89-6	%(w/w)	0.010	ND
邻苯二甲酸二(C7-11支链与直链)烷基(醇)酯 (DHNUP)	68515-42-4	%(w/w)	0.010	ND

测试项目	CAS NO.	单位	MDL	002
己二酸二(2-乙基己基)酯(DEHA)	103-23-1	%(w/w)	0.003	ND
邻苯二甲酸二(4-甲基-2-戊基)酯 (BMPP)	146-50-9	%(w/w)	0.003	ND
邻苯二甲酸二(2-乙氧基)乙酯 (DEEP)	605-54-9	%(w/w)	0.003	ND
邻苯二甲酸二(2-丁氧基)乙酯 (DBEP)	117-83-9	%(w/w)	0.003	ND
邻苯二甲酸双十一烷酯 (DUDP)	3648-20-2	%(w/w)	0.003	ND
己二酸二异壬酯(DINA)	33703-08-1	%(w/w)	0.010	ND
邻苯二甲酸双十三烷基酯 (DTDP)	119-06-2	%(w/w)	0.003	ND
偏苯三酸三(2-乙基己)酯 (TOTM)	3319-31-1	%(w/w)	0.003	ND
对苯二甲酸二(2-乙基己)酯 (DOTP)	6422-86-2	%(w/w)	0.003	ND
邻苯二甲酸二庚酯 (DnHpP)	3648-21-3	%(w/w)	0.003	ND
乙酰柠檬酸三丁酯 (Citroflex, ATBC)	77-90-7	%(w/w)	0.010	ND
邻苯二甲酸二(2-丙基庚)酯(DPHpP)	53306-54-0	%(w/w)	0.010	ND
邻苯二甲酸二(支链与直链)己基酯 (DHP)	68515-50-4	%(w/w)	0.010	ND
邻苯二甲酸二(支链与直链)戊基酯 (DPP)	84777-06-0	%(w/w)	0.010	ND

备注 :

(1) DBP, BBP, DEHP参考信息: 1907/2006/EC Reach附录XVII的修正指令——552/2009/EC第51条(前身为2005/84/EC) 的要求:
i) 不允许DBP，BBP, DEHP质量浓度高于0.1%的可塑性物料用于玩具和儿童护理品.
ii) 当玩具和儿童护理品中的可塑性物料含DBP, BBP, DEHP质量浓度高于0.1%时,不得投放市场.
详细信息请参见Regulation (EC) No 552/2009

(2) DINP, DNOP, DIDP参考信息: 1907/2006/EC Reach附录XVII的修正指令——552/2009/EC第52条(前身为2005/84/EC) 的要求:
i) 不允许DINP, DNOP, DIDP质量浓度高于0.1%的可塑性物料用于可放入儿童口中的玩具和儿童护理品.
ii) 当可放入儿童口中的玩具和儿童护理品中的可塑性物料含DINP, DNOP, DIDP质量浓度高于0.1%时,不得投放市场.
详细信息请参见Regulation (EC) No 552/2009.

多环芳香烃(PAHs)

测试方法 : 参考AfPS GS 2014:01 PAK测试, 采用 GC-MS进行分析。

测试项目	CAS NO.	单位	MDL	002
萘 (NAP)	91-20-3	mg/kg	0.1	ND
苊烯(ANY)	208-96-8	mg/kg	0.1	ND
苊(萘嵌戊烷) (ANA)	83-32-9	mg/kg	0.1	ND
芴 (FLU)	86-73-7	mg/kg	0.1	ND
菲 (PHE)	85-01-8	mg/kg	0.1	ND

198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

测试项目	CAS NO.	单位	MDL	002
蒽 (ANT)	120-12-7	mg/kg	0.1	ND
荧蒽 (FLT)	206-44-0	mg/kg	0.1	ND
芘 (PYR)	129-00-0	mg/kg	0.1	ND
苯并(a)蒽 (BaA)	56-55-3	mg/kg	0.1	ND
屈 (CHR)	218-01-9	mg/kg	0.1	ND
苯并(b)荧蒽 (BbF)	205-99-2	mg/kg	0.1	ND
苯并(j)荧蒽 (BjF)	205-82-3	mg/kg	0.1	ND
苯并 (k)荧蒽 (BkF)	207-08-9	mg/kg	0.1	ND
苯并(a)芘 (BaP)	50-32-8	mg/kg	0.1	ND
苯并(e)芘 (BeP)	192-97-2	mg/kg	0.1	ND
茚苯(1,2,3-c,d)芘 (IPY)	193-39-5	mg/kg	0.1	ND
二苯并(a,h)蒽(DBA)	53-70-3	mg/kg	0.1	ND
苯并(g,h,i)苝(二萘嵌苯) (BPE)	191-24-2	mg/kg	0.1	ND
7项多环芳香烃总和[苊烯(ANY)，苊(萘嵌戊烷) (ANA)，芴 (FLU)，菲 (PHE)，芘 (PYR)，蒽 (ANT)，荧蒽 (FLT)]		mg/kg	-	ND
18项多环芳香烃总和		mg/kg	-	ND

AfPS(德国产品安全委员会):GS 认证对多环芳香烃的要求

参数	1 类	2 类		3 类	
	设计意图为放入口中的材料或者玩具上与皮肤接触的材料 (接触时间大于30秒).	未在 1 类规定中涵盖的材料,且可能与皮肤接触时间大于 30 秒的材料 (长时间接触皮肤)或频繁接触皮肤.		未在 1 和 2 类规定中涵盖的材料,且可能与皮肤接触的少于 30 秒的材料(短期接触皮肤)	
		2009/48/EC 中适用的玩具	产品安全法涉及的其他产品	2009/48/EC中适用的玩具	产品安全法涉及的其他产品
苯并(a)芘 (BaP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(e)芘 (BeP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(a)蒽 (BaA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(b)荧蒽 (BbF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(j)荧蒽 (BjF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并 (k)荧蒽mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
屈 (CHR) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
二苯并(a,h)蒽(DBA)mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苯并(g,h,i)苝(二萘嵌苯) (BPE)n mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
茚苯(1,2,3-c,d)芘 (IPY) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
苊烯(ANY)，苊(萘嵌戊烷) (ANA)，芴 (FLU)，菲 (PHE)，芘 (PYR)，蒽 (ANT)，荧蒽 (FLT)之和 mg/kg	< 1 （总和）	< 5 （总和）	< 10 (总和）	< 20 （总和）	< 50 （总和）
萘 (NAP) mg/kg	< 1	< 2		< 10	
18 PAH之和	<1	< 5	< 10	< 20	< 50

全氟辛酸(PFOA)和全氟辛烷磺酸(PFOS)

测试方法： 参考CEN/TS15968:2010方法，用 LC-MS分析。

测试项目	CAS NO.	单位	MDL	002
全氟辛酸(PFOA)	335-67-1	mg/kg	10	ND
全氟辛烷磺酸及其衍生物 (PFOS)^	-	mg/kg	10	ND

备注：

（1）^全氟辛烷磺酸(PFOS)及其衍生物包含全氟辛烷磺酸(PFOS)、全氟辛基磺酰胺(PFOSA)、2-（N-乙基全氟辛基磺酰胺）乙醇(EtFOSE)、N-甲基全氟辛烷磺酰胺(MeFOSA)、N-乙基全氟辛烷磺酰胺(EtFOSA)和2-（N-甲基全氟辛基磺酰胺）乙醇(MeFOSE)。

有机锡

测试方法： 参照ISO 17353: 2004方法测定, 采用GC-MS进行分析。

测试项目	单位	MDL	002
单丁基锡(MBT)	mg/kg	0.02	ND
二丁基锡(DBT)	mg/kg	0.02	ND
三丁基锡(TBT)	mg/kg	0.02	ND
单辛基锡(MOT)	mg/kg	0.02	ND
四丁基锡(TTBT/TeBT)	mg/kg	0.02	ND
二辛基锡(DOT)	mg/kg	0.02	ND
三苯基锡(TPhT)	mg/kg	0.02	ND
三环己基锡(TCyT)	mg/kg	0.02	ND

备注：

(1) 氧化双三丁基锡(TBTO)的浓度是基于三丁基锡(TBT)的测试结果计算所得。
(2) 二氯二丁基锡 (DBTC)的浓度是基于二丁基锡(DBT)的测试结果计算所得。
(3) 硼氢二丁基锡(DBB) 的浓度是基于二丁基锡(DBT)的测试结果计算所得。
(4) 二正辛基-双（2-乙基己基巯基乙酸酯）锡 (DOTE) 、二正辛基-双（2-乙基己基巯基乙酸酯）锡和单辛基-三(2-乙基己基巯基乙酸酯) 锡的反应物（DOTE and MOTE反应物）的浓度是基于二辛基锡(DOT)和单辛基锡（MOT）的测试结果计算所得。
(5) 三代有机锡化合物的物质包括三丁基锡，三苯基锡，三环己基锡，三辛基锡，三丙基锡。

苯并三唑类紫外吸收剂

测试方法： 参照EPA 3550C: 2007方法测定, 采用 GC-MS进行分析.

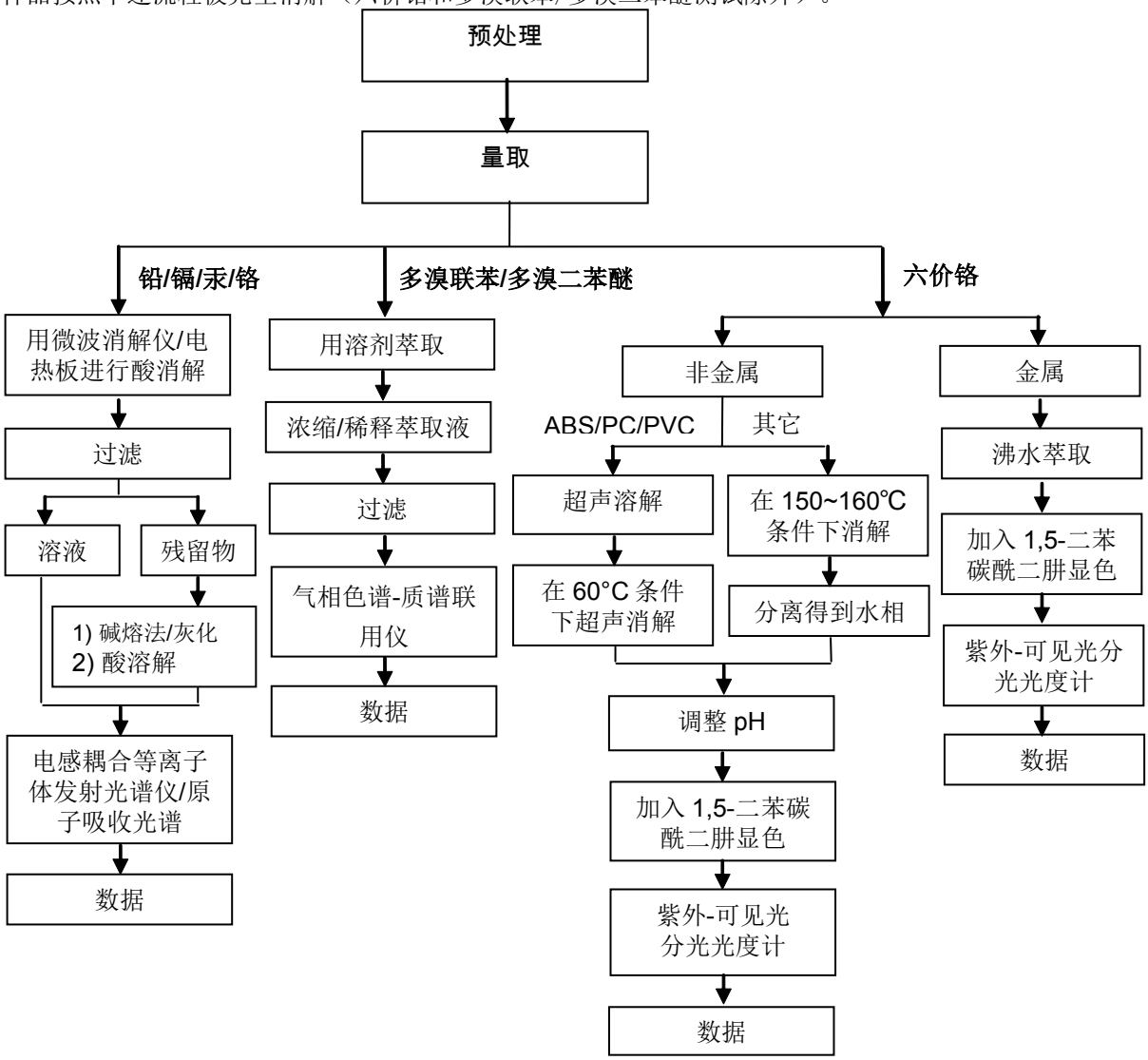
测试项目	CAS NO.	单位	MDL	*002*
2-(2'-羟基-3',5'-二叔丁基苯基)-苯并三唑	3846-71-7	mg/kg	5	ND
2-(2'-羟基-3',5'-二叔丁基苯基)-5-氯代苯并三唑	3864-99-1	mg/kg	5	ND
2-(2'-羟基-3',5'-二叔戊基苯基)苯并三唑	25973-55-1	mg/kg	5	ND
2-(2'-羟基-3'-异丁基-5'-叔丁基苯基)苯并三唑	36437-37-3	mg/kg	5	ND

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

Pb/Cd/Hg/Cr^{6+}/PBBs/PBDEs 测试流程图

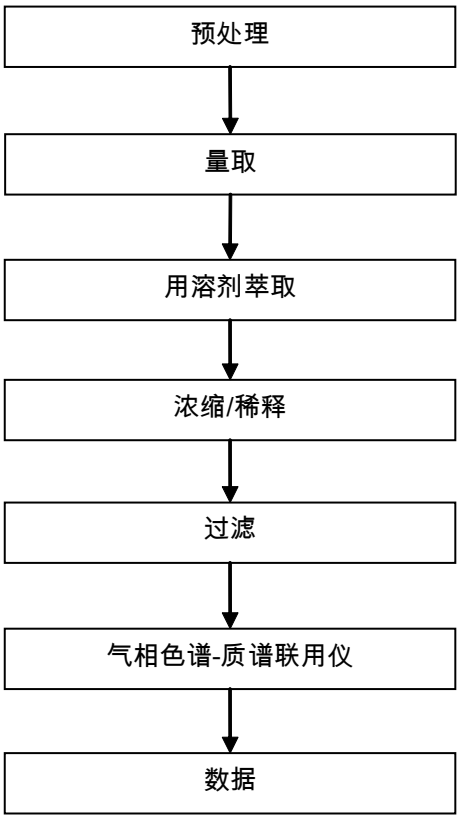
1) 分析人员：张梓路 / 胡香云
2) 项目负责人：汪丹 / 刘琼
3) 样品按照下述流程被完全消解（六价铬和多溴联苯/多溴二苯醚测试除外）。



附件

Phthalates 测试流程图

1) 分析人员：胡香云
2) 项目负责人：刘琼

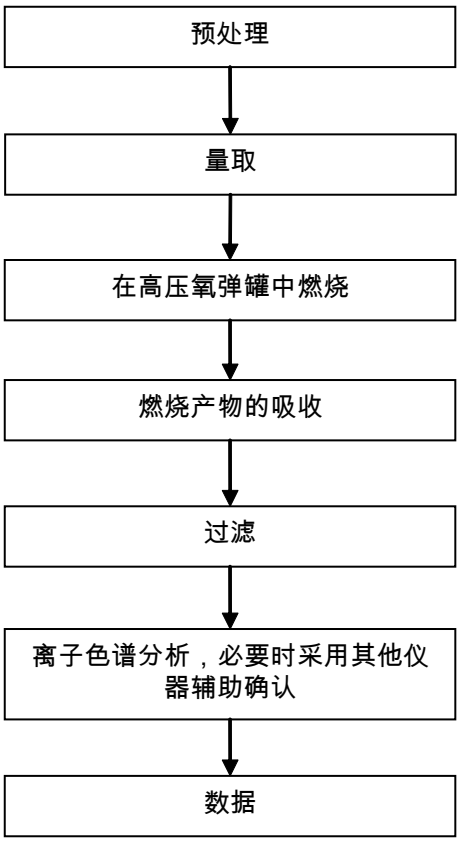


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

Halogen 测试流程图

1) 分析人员：肖戈
2) 项目负责人：汪丹

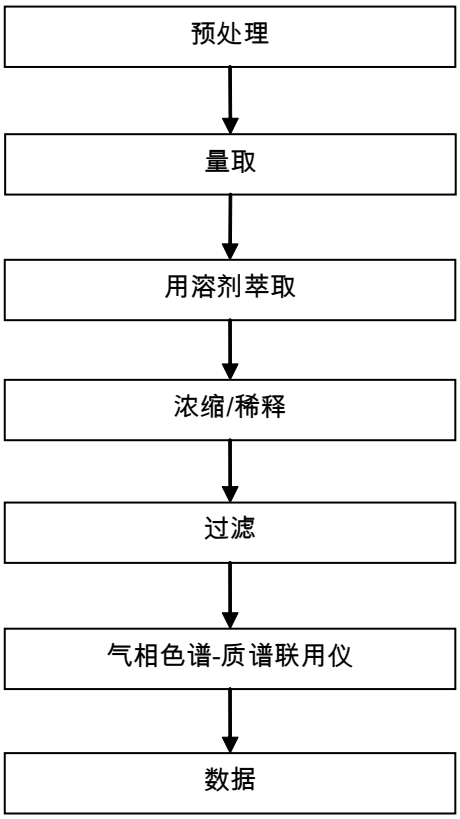


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

HBCDD 测试流程图

1) 分析人员：胡香云
2) 项目负责人：刘琼

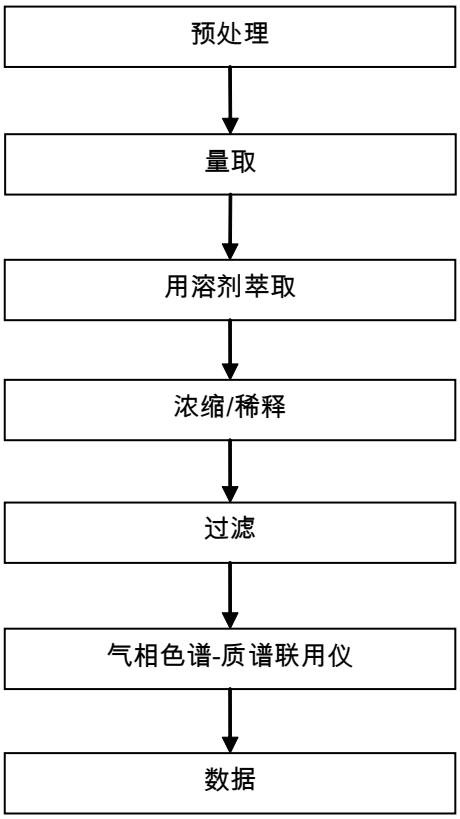


198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

PAHs 测试流程图

1) 分析人员：胡香云
2) 项目负责人：刘琼

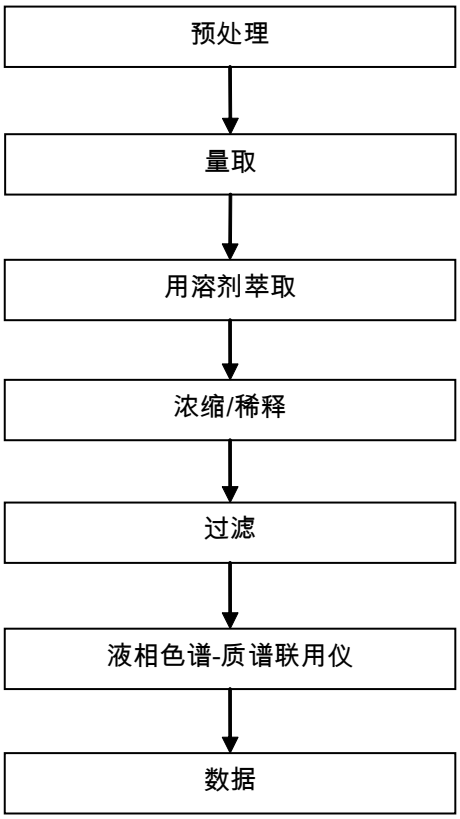


198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

PFOA / PFOS 测试流程图

1) 分析人员：王志红
2) 项目负责人：刘琼

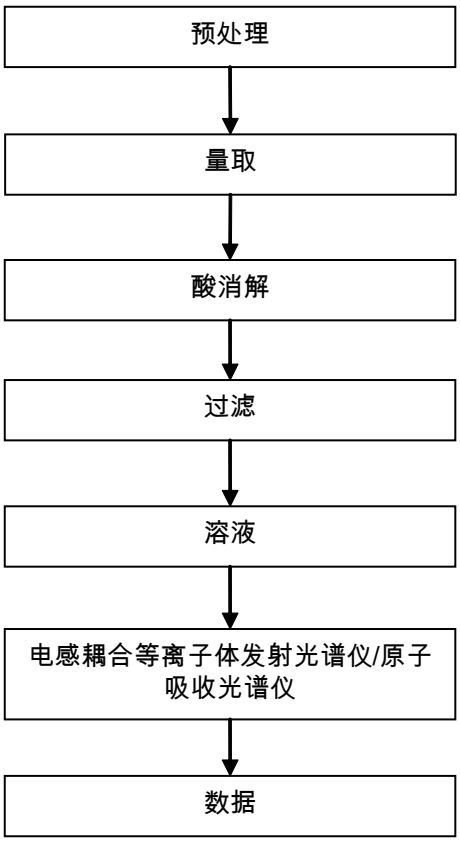


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

元素测试流程图

1) 分析人员：张梓路
2) 项目负责人：汪丹

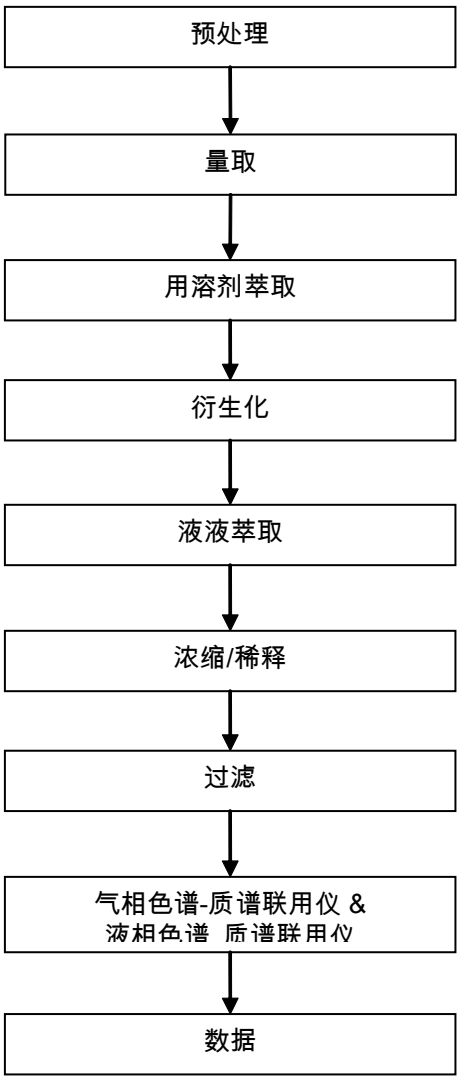


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

TBBP-A 测试流程图

1) 分析人员：张金花
2) 项目负责人：刘琼

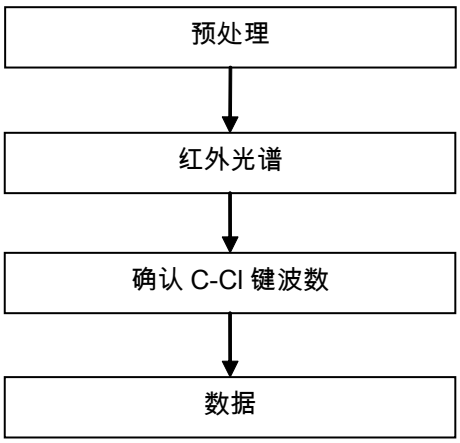


SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

附件

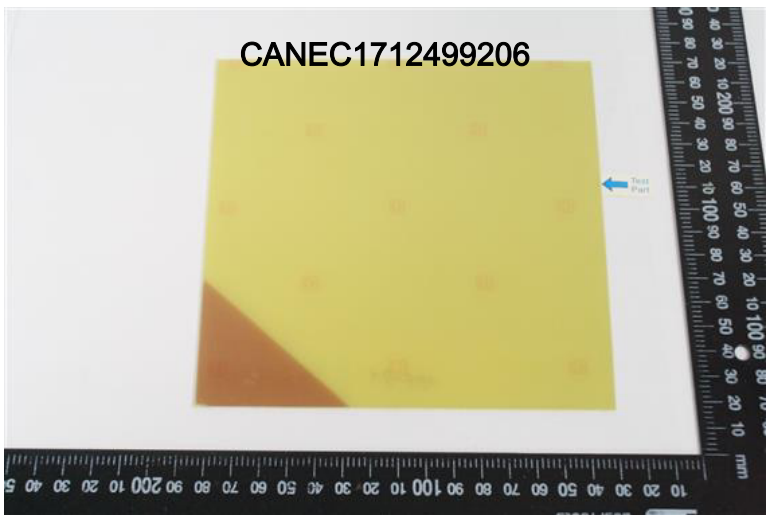
PVC 测试流程图

1) 分析人员：钟顺好
2) 项目负责人：刘垠



SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

样品照片:



CAN17-124992.002

此照片仅限于随SGS正本报告使用

*** 报告完 ***

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center Chemical Laboratory.
198 Kezhu Road,Scientech Park Guangzhou Economic & Technology Development District,Guangzhou,China 510663 t (86-20) 82155555 f (86-20) 82075113 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075113 e sgs.china@sgs.com

Test Report

Report No. SCL01J00529005

Applicant SHENZHEN RONGDA PHOTOSENSITIVE SCIENCE & TECHNOLOGY CO., LTD
Address FLOOR 1-3 R&D BUILDING ,FIRST SCIENCE PARK,FUYONG LAKE LIXIN,FUYONGSTREET,BAO'AN DISTRICT,SHENZHEN

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name	Liquid photosensitive solder resist ink
Part No.	H-8100黑色
Color	Black
Sample Received Date	Feb. 8, 2017
Testing Period	Feb. 8, 2017 to Feb. 11, 2017

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Hexabromocyclododecane (HBCDD), Phthalates in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).

Tested by E Z Yan

Approved by Danny Liu

Technical Manager

Reviewed by

Date Feb. 11, 2017

No. R187216530

Test Report

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321-6:2015	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270D:2007	GC-MS
Phthalates	Refer to IEC 62321-8 CDV	GC-MS
Phthalates	Refer to EN 14372:2004(E)	GC-MS

Test Result(s)

Tested Item(s)	**Result**	**MDL**
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg

Tested Item(s)	**Result**	**MDL**
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

Test Report

Report No. SCL01J00529005

Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers(PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
Phthalates(Refer to IEC 62321-8 CDV)		
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butylbenzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-2-ethylhexyl phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Di-n-octyl phthalate(DNOP) CAS#:117-84-0	N.D.	50 mg/kg
Diisononyl phthalate(DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
Diisodecyl phthalate(DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg

Tested Item(s)	Result	MDL
Phthalates(Refer to EN 14372:2004(E))		
Dipentyl phthalate(DPP) CAS#:131-18-0	N.D.	50 mg/kg

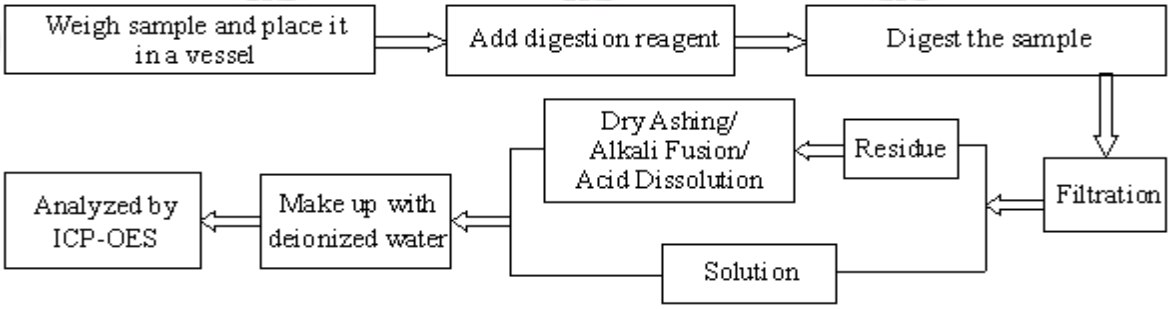
Tested Sample/Part Description Black liquid

Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

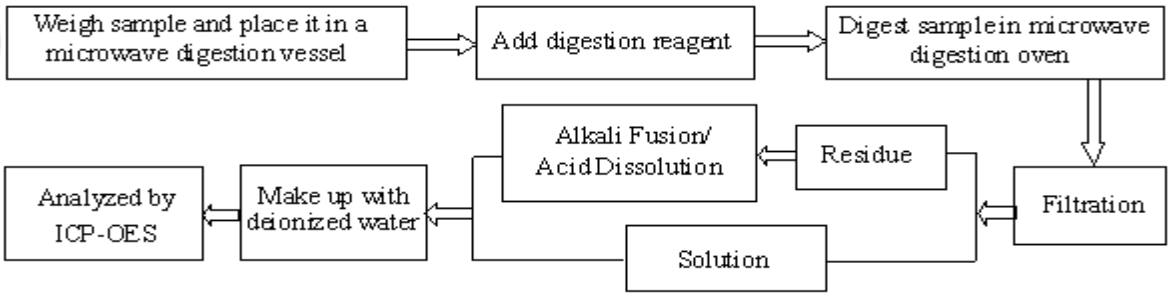
Test Report

Test Process

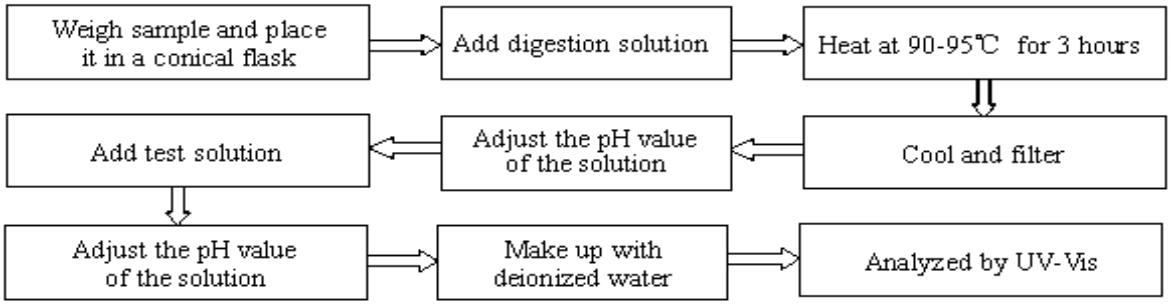
1. Lead (Pb), Cadmium (Cd)



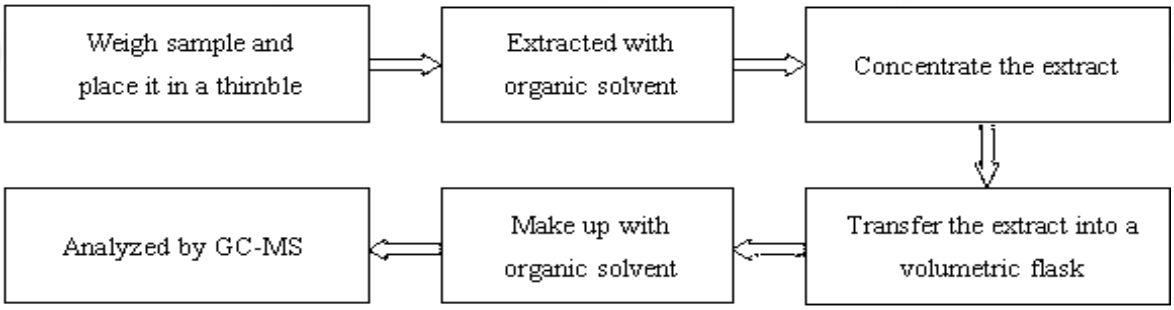
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))

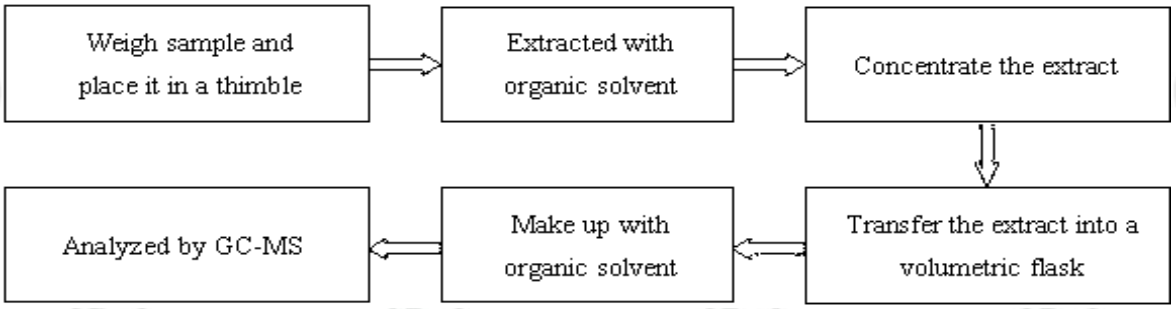


4. Polybrominated Biphenyls(PBBs) , Polybrominated Diphenyl Ethers(PBDEs)

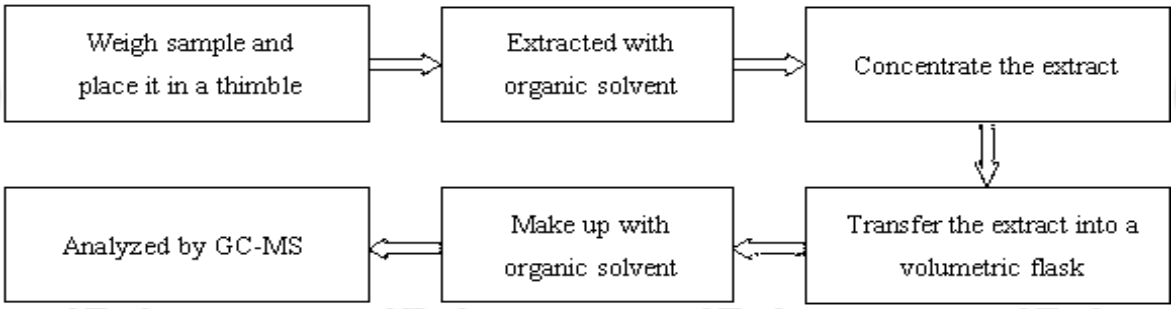


Test Report

5. Phthalates



6. Hexabromocyclododecane (HBCDD)



Test Report

Photo(s) of the sample(s)

*** End of report ***

Test Report

Report No. SCL01J024214001

Applicant HUI MEI
Address DATANG DISTRICT, DALINGSHAN TOWN, DONGGUAN CITY.

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name	EVA(Black)
Sample Received Date	Apr. 18, 2017
Testing Period	Apr. 18, 2017 to Apr. 24, 2017

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs) , Polybrominated Diphenyl Ethers(PBDEs) in the submitted sample(s).

Test Method Please refer to the following page(s).

Test Result(s) Please refer to the following page(s).

****

Conclusion

Tested Sample	According to directive	Result
Submitted Sample	2011/65/EU	Pass

****

Pass means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU.

Tested by

Approved by Hill Zheng
Technical Manager

Reviewed by

Date Apr. 24, 2017

No. S145811477

Test Report

Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321-6:2015	GC-MS

Test Result(s)

Tested Item(s)	**Result**	**MDL**	**Limit of Directive 2011/65/EU**
Lead (Pb)	18 mg/kg	2 mg/kg	1000 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg	100 mg/kg
Mercury (Hg)	N.D.	2 mg/kg	1000 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	2 mg/kg	1000 mg/kg

Tested Item(s)	**Result**	**MDL**	**Limit of Directive 2011/65/EU**
Polybrominated Biphenyls(PBBs)			
Monobromobiphenyl	N.D.	5 mg/kg	1000 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg	
Tribromobiphenyl	N.D.	5 mg/kg	
Tetrabromobiphenyl	N.D.	5 mg/kg	
Pentabromobiphenyl	N.D.	5 mg/kg	
Hexabromobiphenyl	N.D.	5 mg/kg	
Heptabromobiphenyl	N.D.	5 mg/kg	
Octabromobiphenyl	N.D.	5 mg/kg	
Nonabromobiphenyl	N.D.	5 mg/kg	
Decabromobiphenyl	N.D.	5 mg/kg	

Test Report

Tested Item(s)	Result	MDL	Limit of Directive 2011/65/EU
Polybrominated Diphenyl Ethers(PBDEs)			
Monobromodiphenyl ether	N.D.	5 mg/kg	1000 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg	
Tribromodiphenyl ether	N.D.	5 mg/kg	
Tetrabromodiphenyl ether	N.D.	5 mg/kg	
Pentabromodiphenyl ether	N.D.	5 mg/kg	
Hexabromodiphenyl ether	N.D.	5 mg/kg	
Heptabromodiphenyl ether	N.D.	5 mg/kg	
Octabromodiphenyl ether	N.D.	5 mg/kg	
Nonabromodiphenyl ether	N.D.	5 mg/kg	
Decabromodiphenyl ether	N.D.	5 mg/kg	

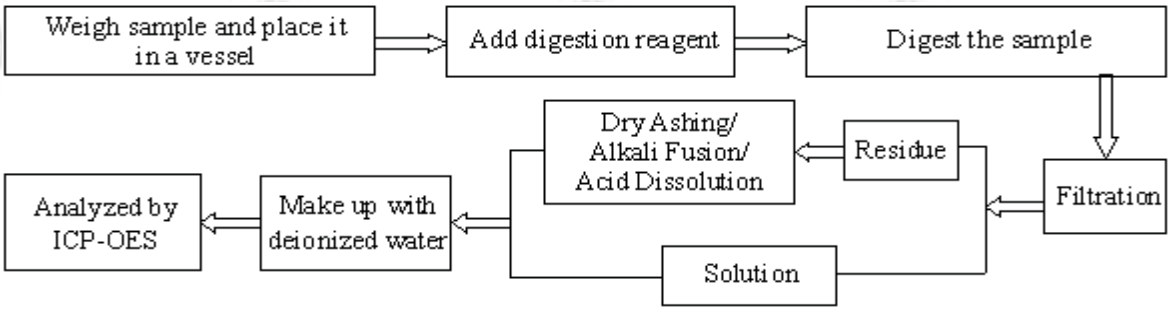
Tested Sample/Part Description Black foam

Remark: -MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

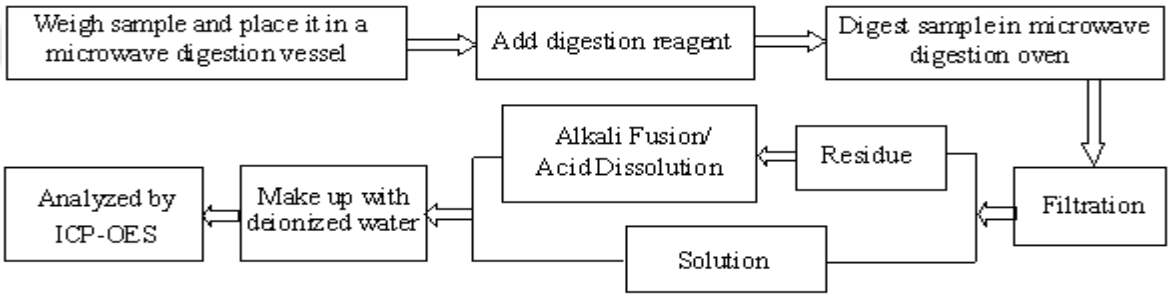
Test Report

Test Process

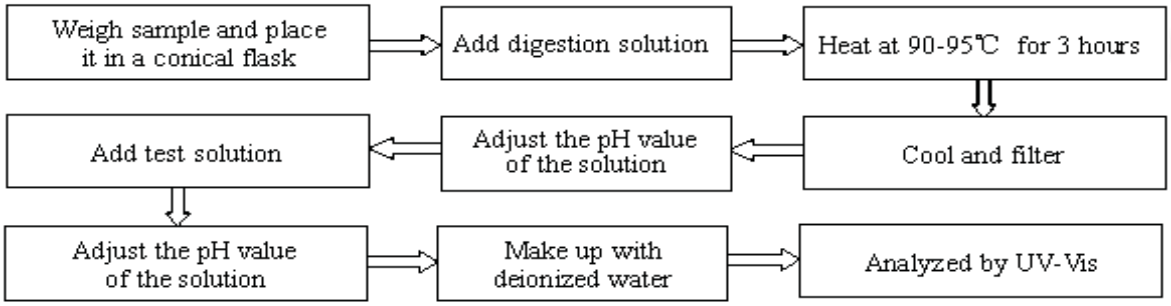
1. Lead (Pb), Cadmium (Cd)



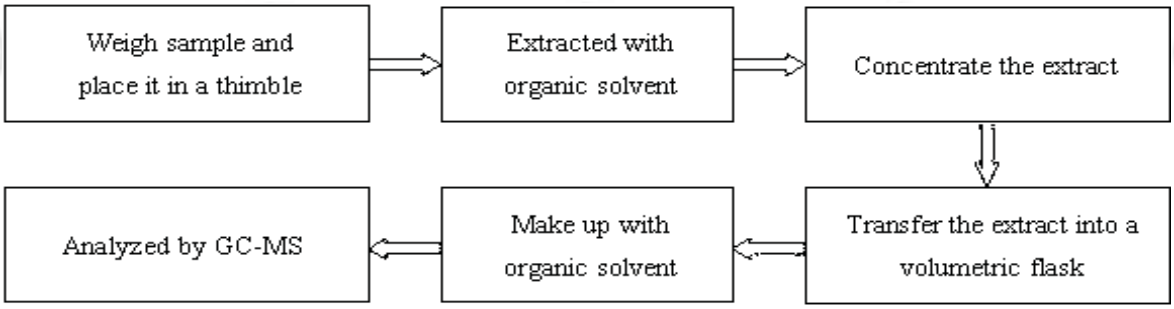
2. Mercury (Hg)



3. Hexavalent Chromium(Cr(VI))



4. Polybrominated Biphenyls(PBBs) , Polybrominated Diphenyl Ethers(PBDEs)



Test Report

Photo(s) of the sample(s)

*** End of report ***

Test Report

No. : CE/2017/12892 Date : 2017/01/23

DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

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

Sample Description	:	ADHESIVE
Style/Item No.	:	G9000 SERIES(G9000, G9000 C, G9000-SY, G9000W ,G9010, G9011, G9012)
The Testing sample	:	G9000-SY
Lot No.	:	6C01
Sample Receiving Date	:	2017/01/13
Testing Period	:	2017/01/13 TO 2017/01/23

==========

Test Requested :

(1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.

(2) As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine contents in the submitted sample.

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

SGS TAIWAN LTD

Troy Chang / Manager – Tech
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Test Result(s)

PART NAME No.1 : TRANSPARENT DOUBLE SIDED ADHESIVE (EXCLUDING THE RELEASE LINER)

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		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 (2008) and performed by UV-VIS.	2	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		-	n.d.
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.

DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Test Item(s)	Unit	Method	MDL	Result No.1
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582 (2007). Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.

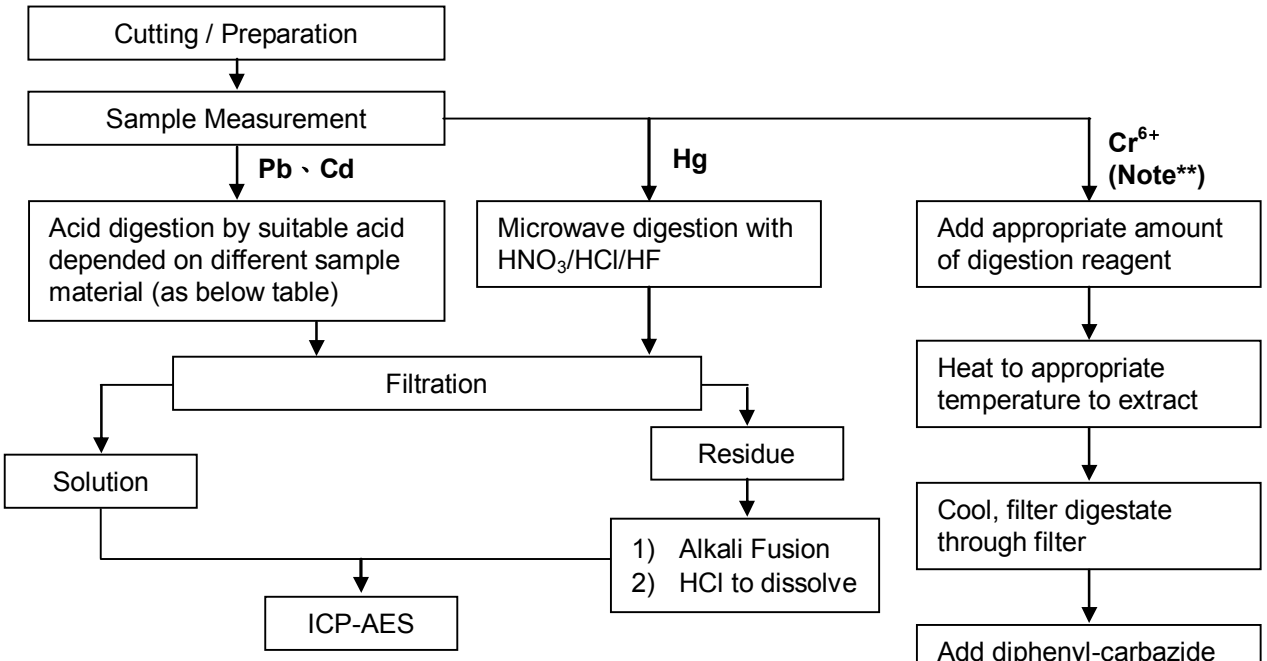
Note：

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

DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

These samples were dissolved totally by pre-conditioning method according to below flow chart.
（Cr^{6+} test method excluded）

- Technician: JR Wang
- Supervisor: Troy Chang



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Added appropriate reagent to total digestion

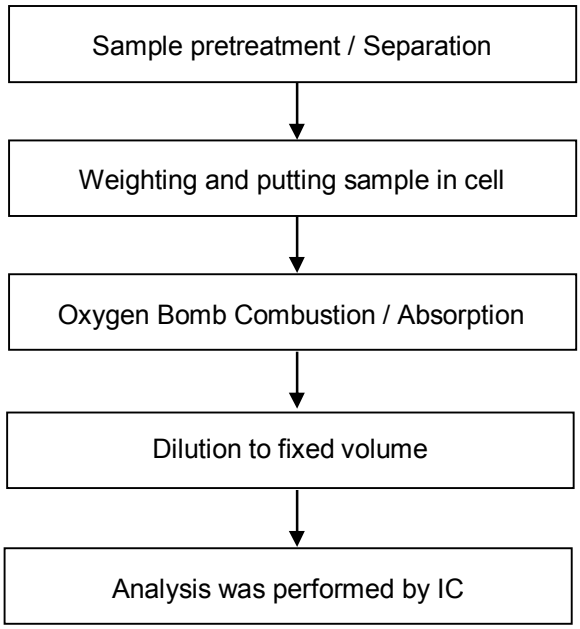
Note (For IEC 62321)**

(1) For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.
(2) For metallic material, add pure water and heat to boiling.

DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Analytical flow chart - Halogen

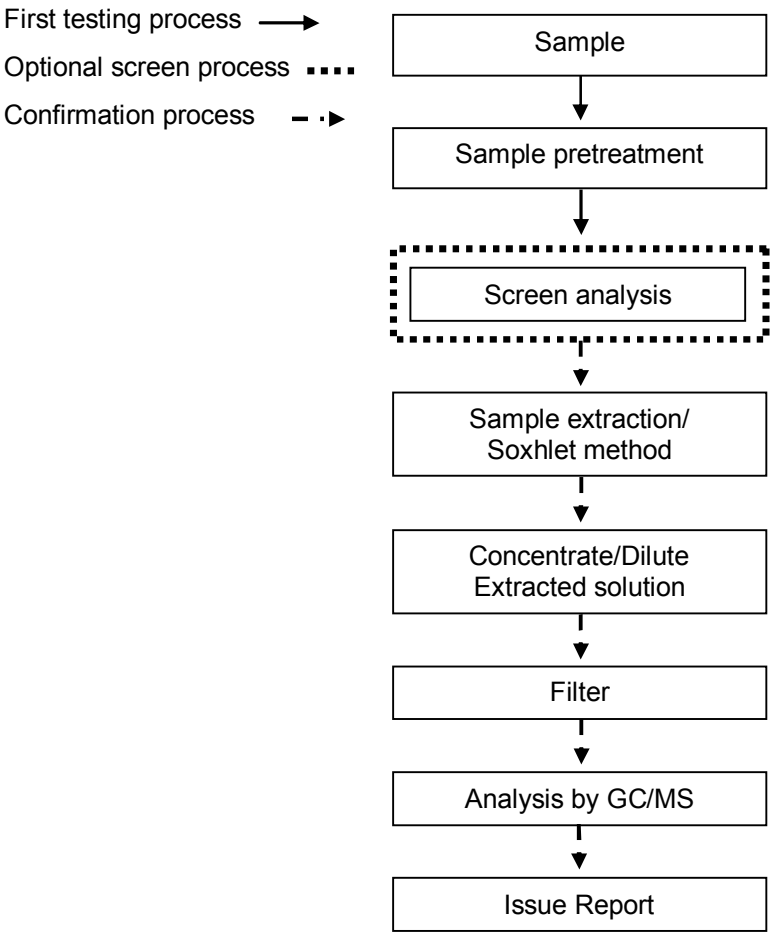
- Technician: Rita Chen
- Supervisor: Troy Chang



DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

Analytical flow chart - PBB/PBDE

- Technician : Yaling Tu
- Supervisor: Troy Chang



DEXERIALS CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN

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

CE/2017/12892

** End of Report **

WIESON TECHNOLOGIES CO., LTD.

WIESON 3D CHAMBER TEST REPORT

Customer:	**MultiTech**
Project Name:	**MTC-H5**
WIESON P/N:	**GY115IE002-001**
Antenna Type:	**LTE External Antenna**
Version No. :	**02**

Contact Information:
Tel:02-2647-1896

PM: **Eison Chou**
eison@wieson.com
Ext.6377

Engineer: wippen wippen@wieson.com
Ext.6712

INDEX.

Revision History

Revision	Date	Engineer	Description
01	2017/09/19	Wippen li	NEW RELEASE
02	2017/11/16	Wippen li	Change Product Color

I. Summary：

This report to account for the measurement setup and result of the Antenna.
The measurement setup includes s-parameter, pattern, and gain measurement.
The measured data for Antenna are presented and analysis.

II. S-Parameter Measurement：

A. Reflection coefficient :

(a) Instrument：Network Analyzer.

(b) Setup：

(1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.
(2) Connect the antenna under test to the Network Analyzer.
(3) Measure the S11(reflection coefficient) shown in Fig. 1.
(4) Generally, the S11 is less than –10dB to ensure the 90% power into antenna and only less than 10% power back to system.

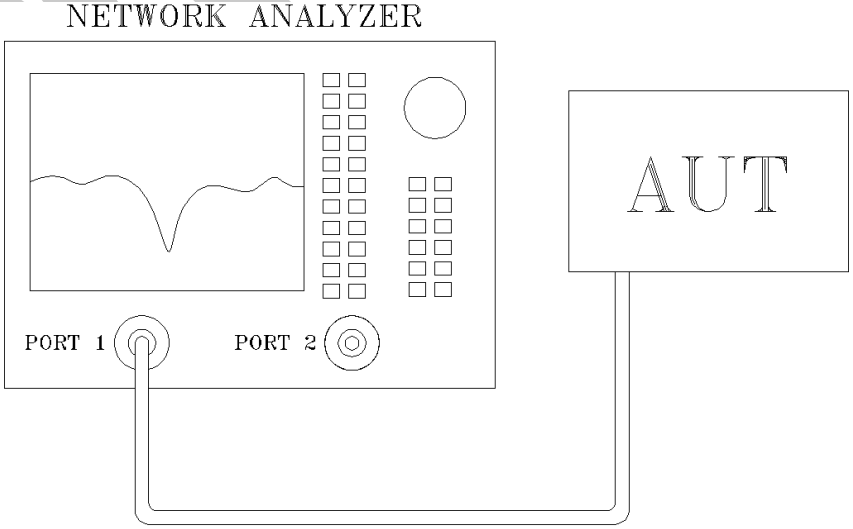


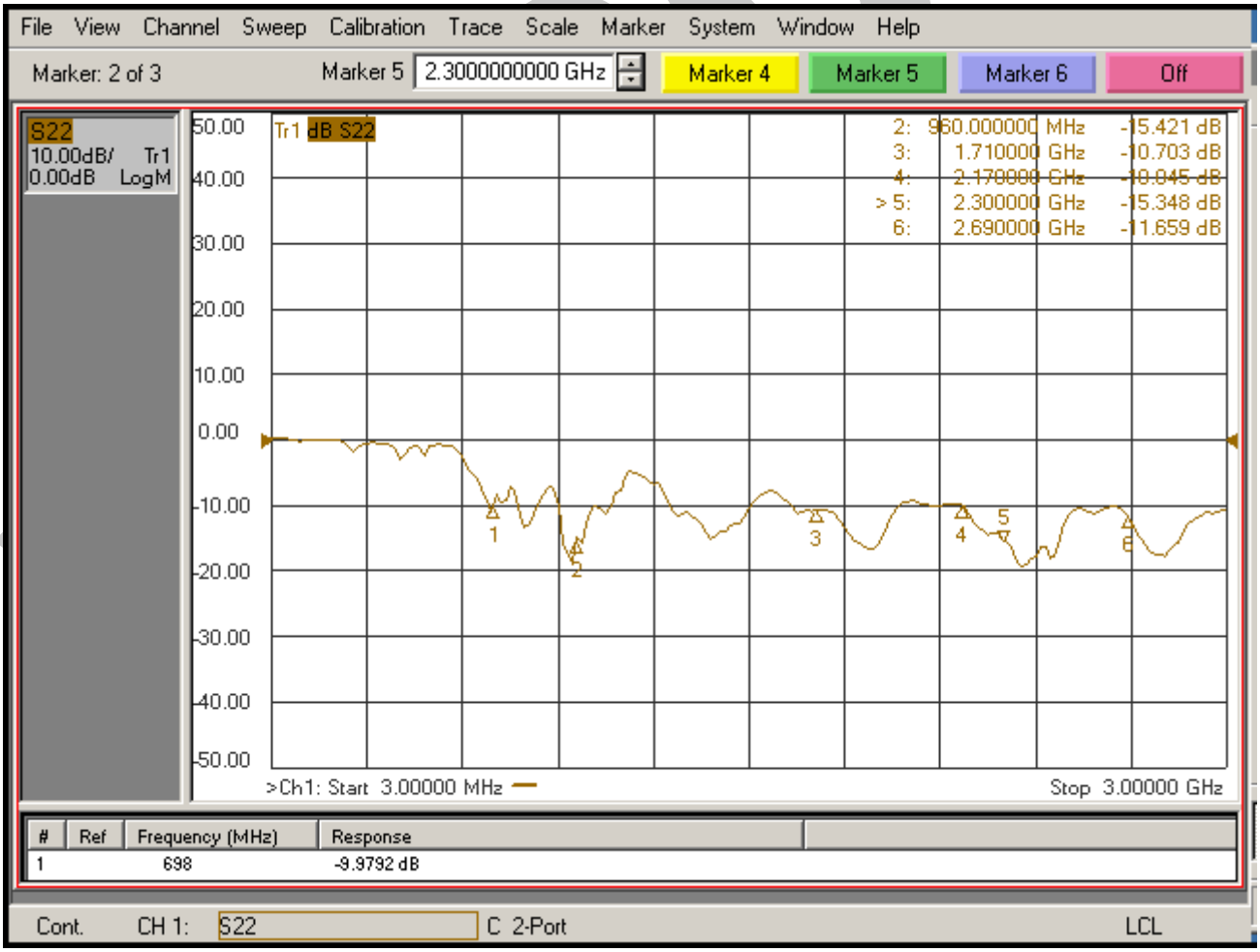
Fig.1 Antenna measured in Network Analyzer

III. Antenna Photos：

IV. S-Parameter Measurement Result：

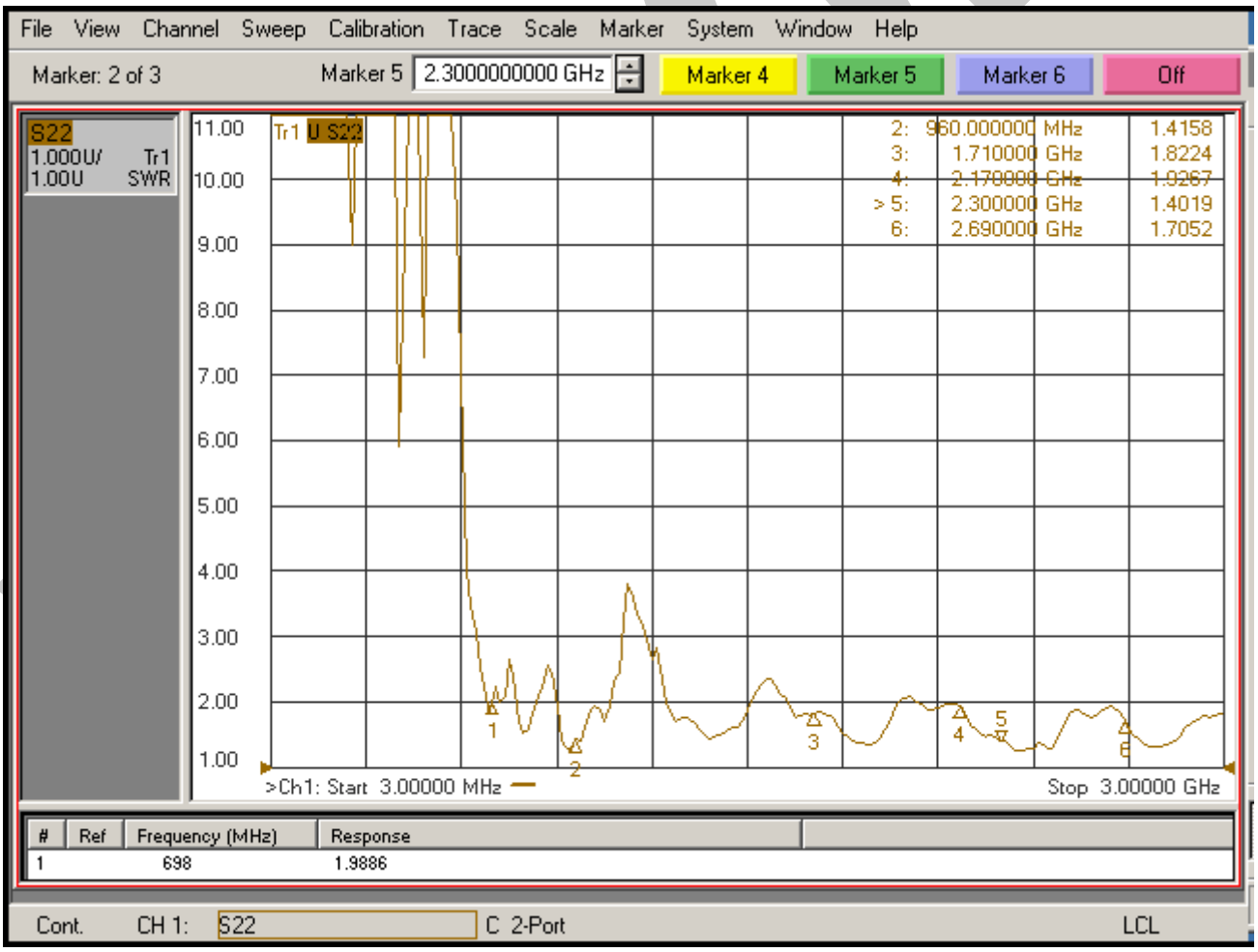
LTE Antenna Return loss

Frequency MHz	698 (MHz)	960 (MHz)	1710 (MHz)	2170 (MHz)	2300 (MHz)	2690 (MHz)
dB	-9.97	-15.42	-10.70	-10.04	-15.34	-11.65



LTE Antenna VSWR

Frequency MHz	698 (MHz)	960 (MHz)	1710 (MHz)	2170 (MHz)	2300 (MHz)	2690 (MHz)
	1.98	**1.41**	**1.82**	**1.02**	**1.40**	**1.70**



V. The Test Information Anechoic Chamber

A. Scope

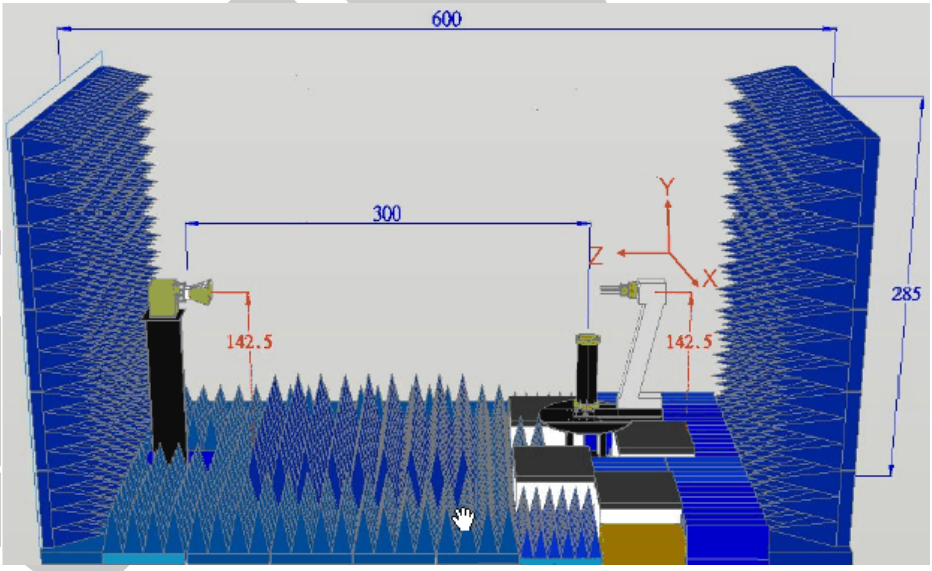
This statement of work defines the requirements of a far-field antenna measurement range, which includes

(1) One 325 cm (W) x 285 cm (H) x 640 cm (L) Antenna Measurement Anechoic Chamber, detailed requirements refer section 2.0 .

(2) One Far-field Antenna Measurement System with spinning linear CP measurement capabilities, detailed requirement refer section 3.0 .

(3) One broad-band transmitted antenna, detailed requirements refer section 8.0 .

(4) Three NRL-4433 standard gain antennas, detailed requirements refer section 9.0 .



B. Antenna Measurement Anechoic Chamber

Fully anechoic chamber with dimension 325 cm in width, 285 cm in height and 640 cm in length. The quiet zone of this Chamber shall be greater than

70 cm @ 0.9 GHz, 50 cm @1.8 GHz, 44 cm @2.4 GHz, 28 cm @5.8 GHz, 16 cm @18 GHz. Contractor should be aware of this anechoic chamber is going to be used for performing far-filed antenna measurement.

C. Electrical specifications

Frequency Range: 800 MHz to 18 GHz,
Quiet zone size: >70 cm @ 0.9 GHz, >50 cm @1.8 GHz, >44 cm @2.4 GHz, >28 cm @5.8 GHz, >16 cm @18 GHz.
Quiet zone ripple: < +/- 0.5 dB @1.5~2.4 GHz, < +/- 0.25 dB @2.4~18GHz

Field Probing Frequency	Peak-to-Peak Amplitude Ripple (within specified Quiet Zone Area)	Quiet Zone Size (cm)	Compliant
0.9 GHz	< 0.8 dB	70	Yes
1.575 GHz	< 0.6 dB	55	Yes
1.8 GHz	< 0.5 dB	50	Yes
2.45 GHz	< 0.4 dB	44	Yes
4.8 GHz	< 0.3 dB	31	Yes
5.8 GHz	< 0.3 dB	28	Yes

D. Absorbers

We shall design and install proper absorbers on the inner walls of the chamber to guarantee the electrical specifications. However, the absorbers height shall be no less than 24" which enables the space in the chamber to be around 203 cm (W) x 163 cm (H) x 533 cm (L). All the absorber used shall meet NRL-8093 fire retardant regulations

E. Far-field Antenna Measurement System

We shall supply all the hardware and software which are capable of characterizing antenna radiation patterns from 30 KHz to 6 GHz or 18GHz using the existed Agilent 5230A PNA-L or Agilent 8753ES Vector Network Analyzer. The system shall be able to automatically measure and plot single axis amplitude and phase antenna patterns in either Cartesian or polar formats.

F. Far-field measurement software

The software consists of the control or data acquisition software and the data plotting software.

(1) The data acquisition software shall at least be capable of the following functions:
*measuring single frequency per cut - single axis (azimuth); system can automatically switch frequency at the end of a scan.
*measuring data in Uni-direction or bi-direction
*measuring data at least with azimuth 360 degrees. (+/- 180 degrees or 0-360 degrees)
*real time plot in Cartesian or polar format
*screen shows real time angle position

*system automatically calculates S/N ratio level based on measured signal fluctuation
*function to set positioner zero position
*operator can set data taking velocity and data sampling interval
*entry to allow positioner offset to any angle

(2) The data plotting software shall at least be capable of the following functions:
*Editing plot data
*plotting data in Cartesian, Polar or delimited ASCII output with header information
*plotting data in linear or dB scales
*normalizing data to peak (dB), standard gain reference (dBi), or no normalization
*overlaying data, (drag and drop capability is preferable)
*outputting data to any Windows supported printers

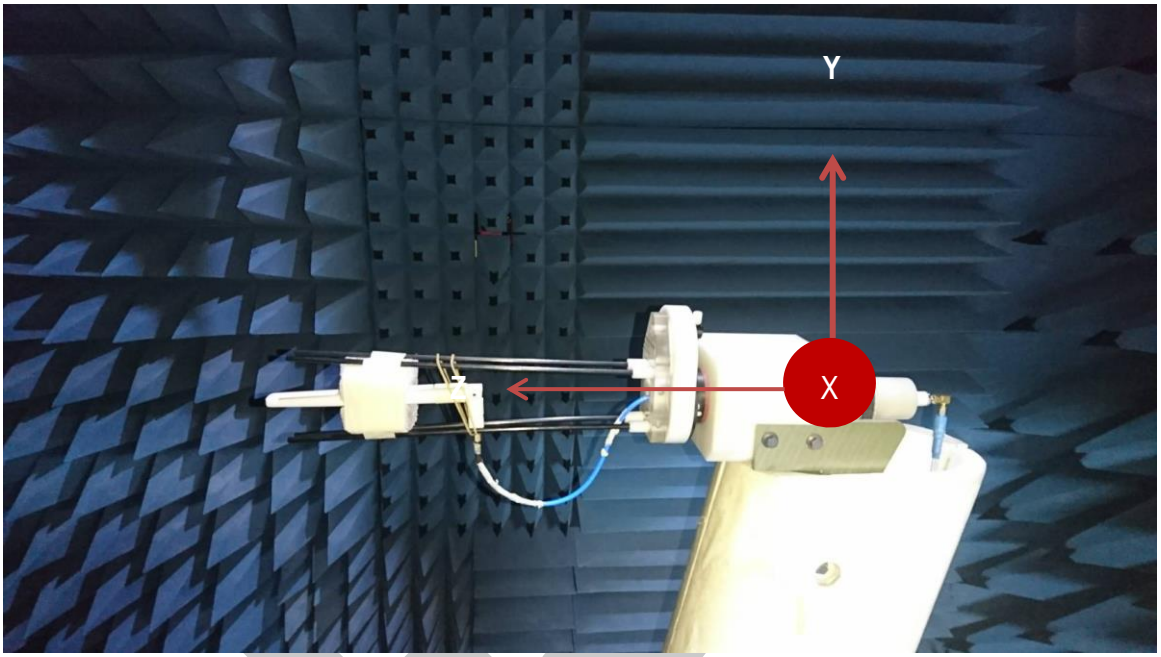
G. Broadband Transmitted antenna

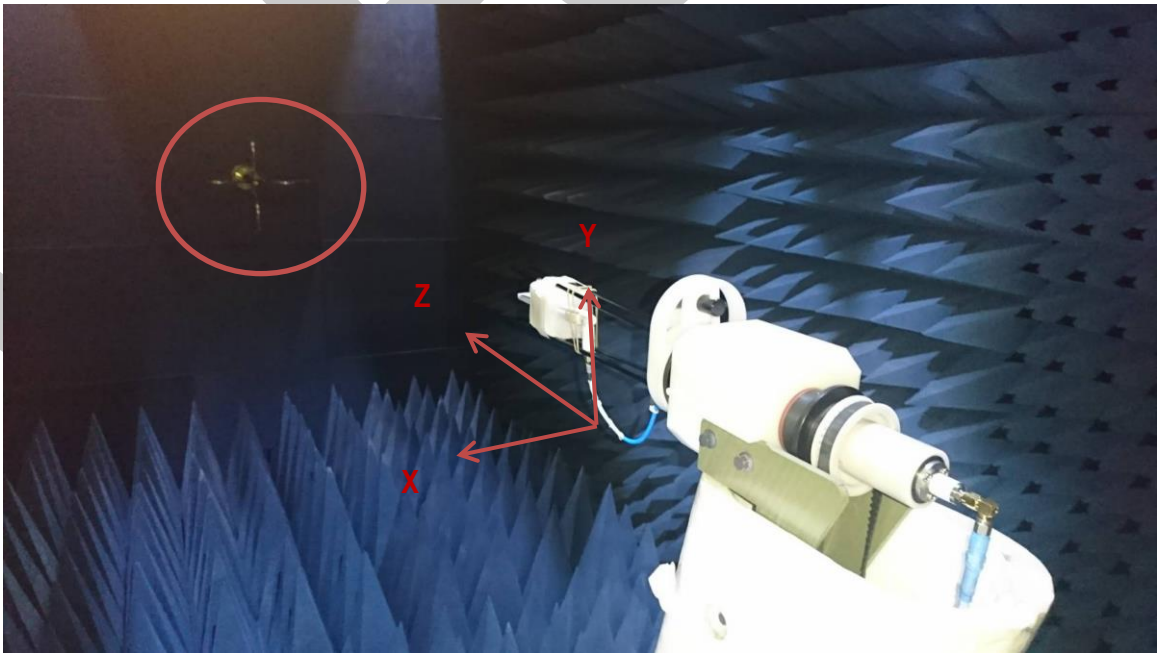
We shall provide a linear-polarized broadband antenna with the specifications better than those listed hereafter in this article,
Frequency: 1-18 GHz, Gain: >12 dBi @10 GHz, VSWR:<2,0:1, Front to Back Ration > 20 dB

H. NRL4433 Standard Gain Horns

We shall provide one WR-430, WR-187 one DRH0118 standard gain horns which meets the specifications of NRL-4433 report. The operating frequency of WR-430 standard gain horn is from 1.7 to 2.6 GHz, and WR-187 from 3.95 to 5.85 GHz, and DRH-0118 from 0.8 to 18GHz. We shall also provide NRL-4433 theoretical gain curves and tables for the standard gain horns.

VI. Antenna Measurement Photo





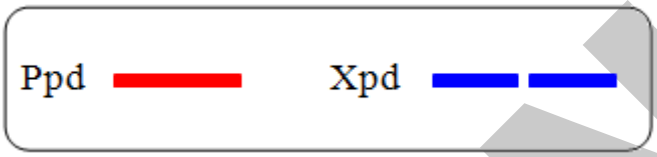
VII. Antenna Measurement Result

LTE Antenna

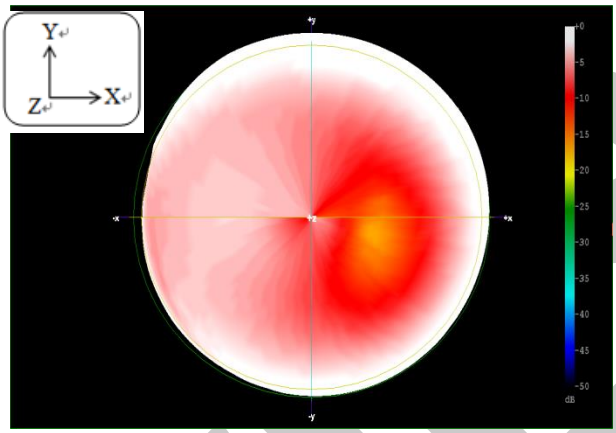
Frequency (MHz)	Peak Gain (dBi)	3D Gain (dBi)	3D Radiation Efficiency(%)
0.698	1.82	-2.37	58
0.704	2.06	-2.37	58
0.746	1.45	-2.92	51
0.757	1.38	-2.76	53
0.787	1.23	-3.01	50
0.824	1.51	-2.76	53
0.836	1.43	-2.92	51
0.849	1.11	-2.84	52
0.869	1.23	-2.68	54
0.88	1.28	-2.68	54
0.894	1.48	-2.76	53
0.9	1.88	-2.92	51
0.915	1.18	-3.19	48
0.925	1.16	-3.28	47
0.94	1.02	-3.47	45
0.96	1.22	-2.76	53
1.71	0.74	-1.74	67
1.732	0.86	-1.80	66
1.75	1.07	-1.94	64
1.755	1.19	-1.87	65
1.785	0.86	-2.22	60
1.8	0.86	-2.22	60
1.84	1.46	-2.37	58
1.85	1.77	-2.15	61

1.88	1.5	-2.52	56
1.91	2.01	-2.01	63
1.92	1.94	-2.08	62
1.93	1.84	-2.22	60
1.95	1.85	-2.15	61
1.96	1.89	-2.15	61
1.98	2.17	-2.01	63
1.99	2.35	-1.94	64
2.11	2.76	-2.08	62
2.132	3.52	-1.49	71
2.14	3.34	-1.67	68
2.155	3.16	-1.87	65
2.17	3.42	-1.61	69
2.305	3.58	-1.25	75
2.345	3.94	-0.86	82
2.39	4.33	-0.60	87
2.5	2.55	-2.08	62
2.535	2.84	-1.61	69
2.57	2.44	-1.43	72
2.62	1.27	-2.01	63
2.655	1.68	-1.19	76
2.69	1.43	-1.43	72

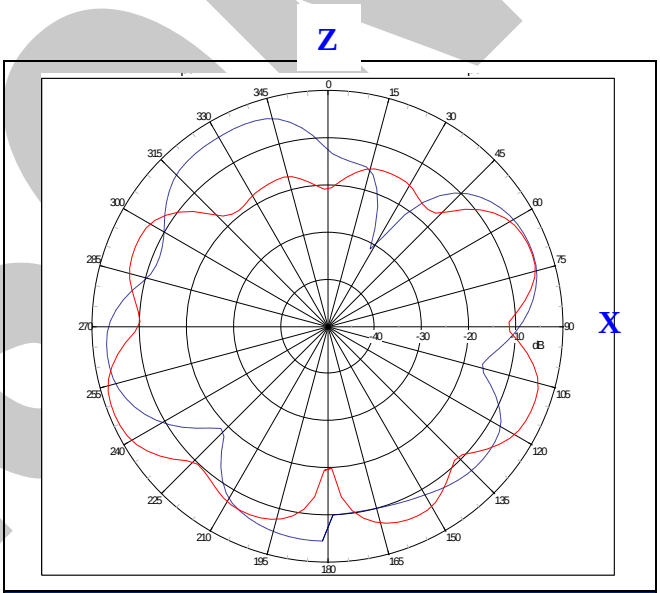
3D Radiation Pattern of LTE Antenna



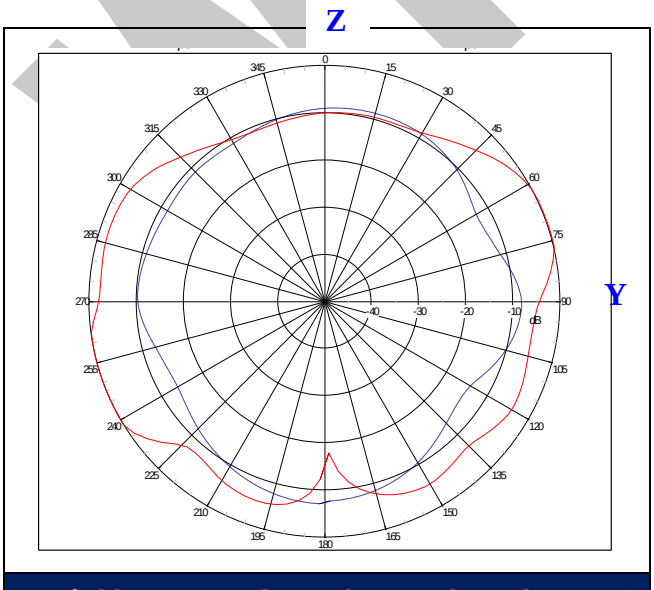
0.698GHz



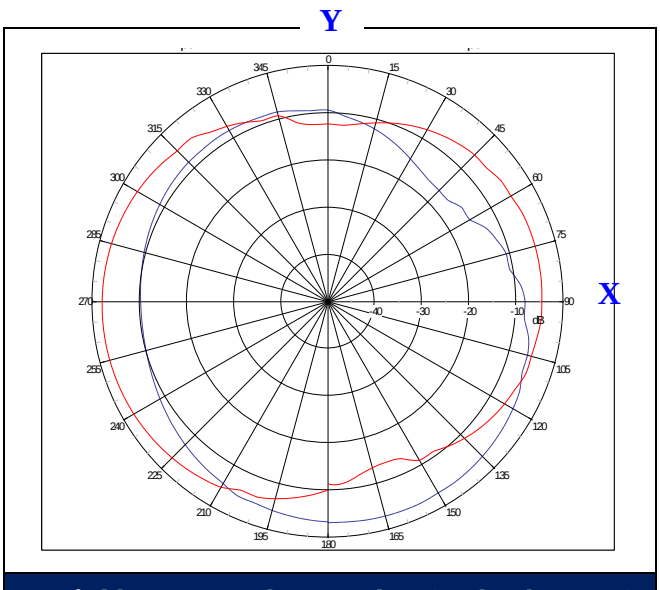
3D Pattern



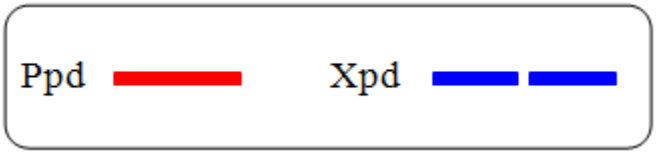
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



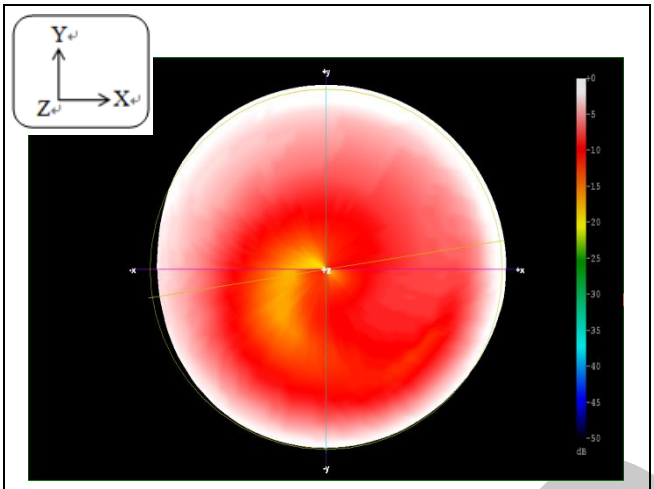
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



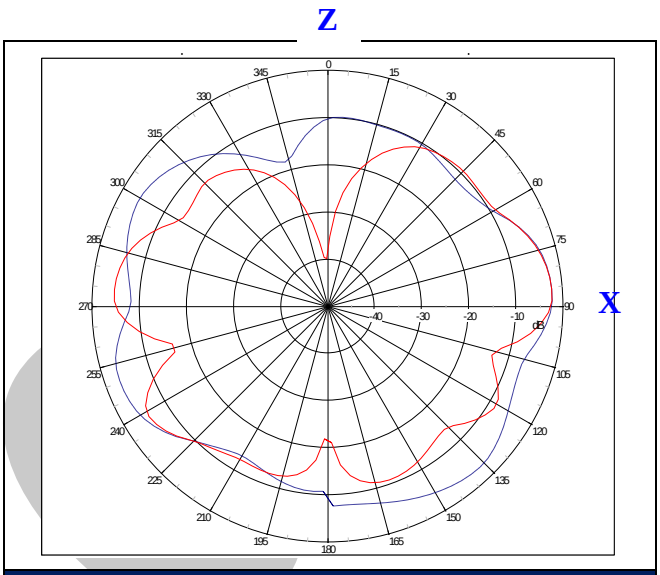
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



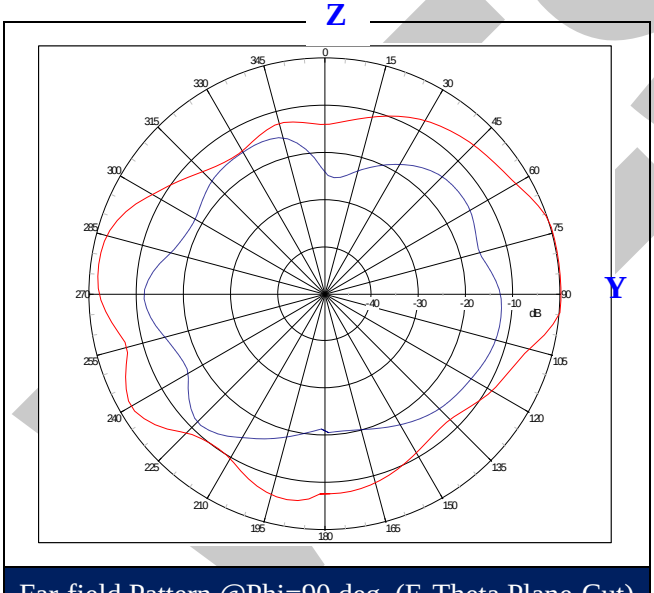
0.824GHz



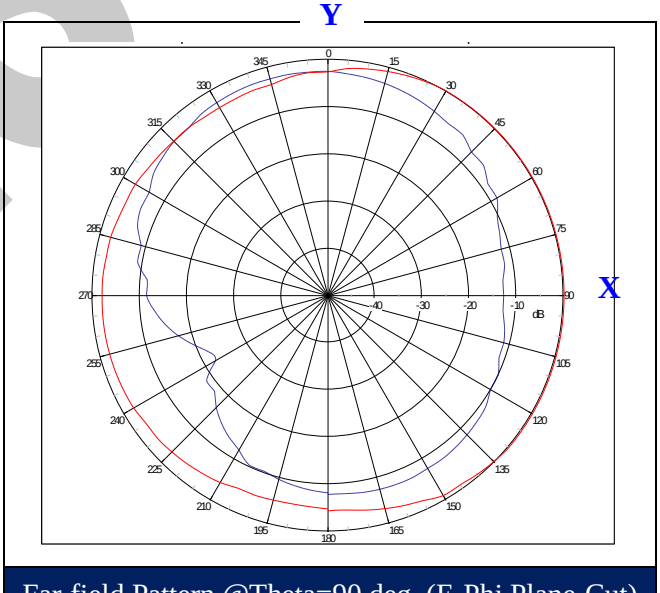
3D Pattern



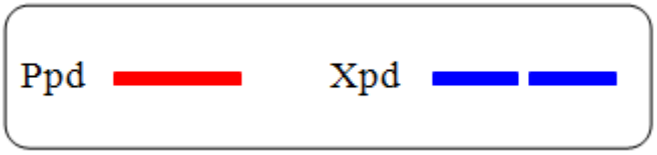
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



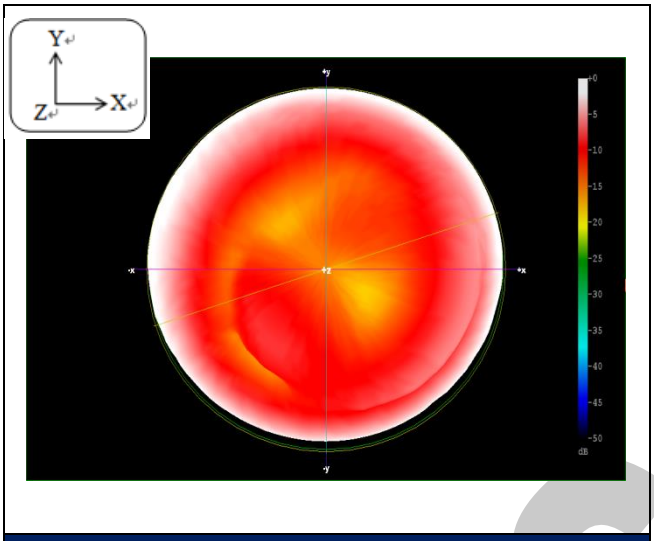
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



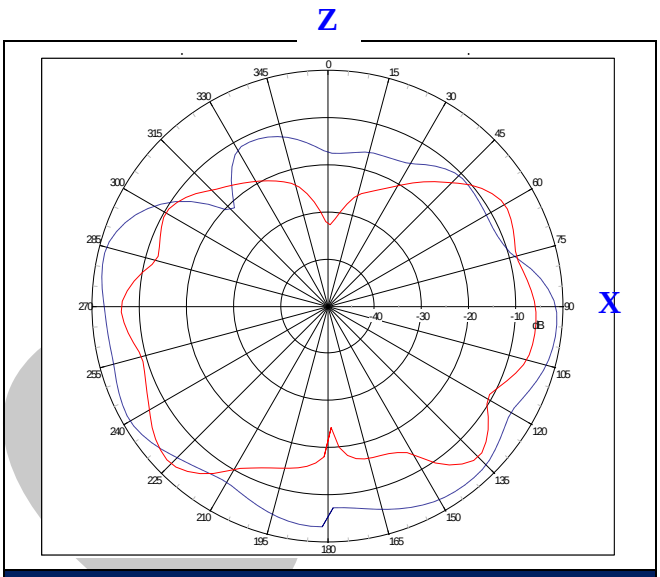
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



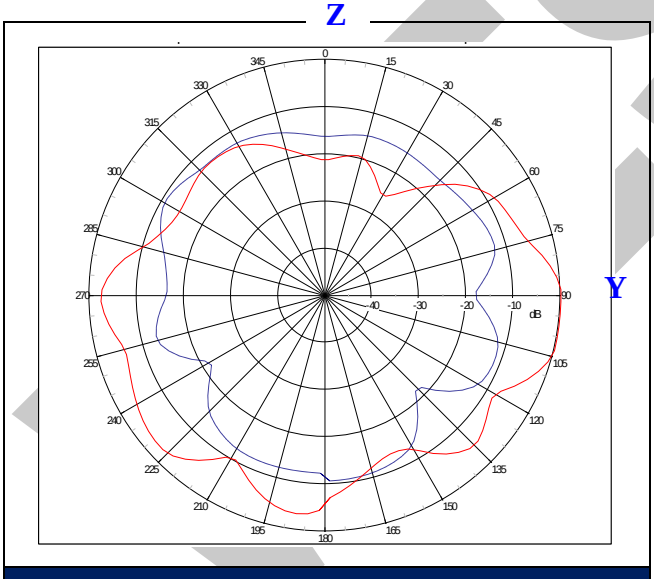
0.960GHz



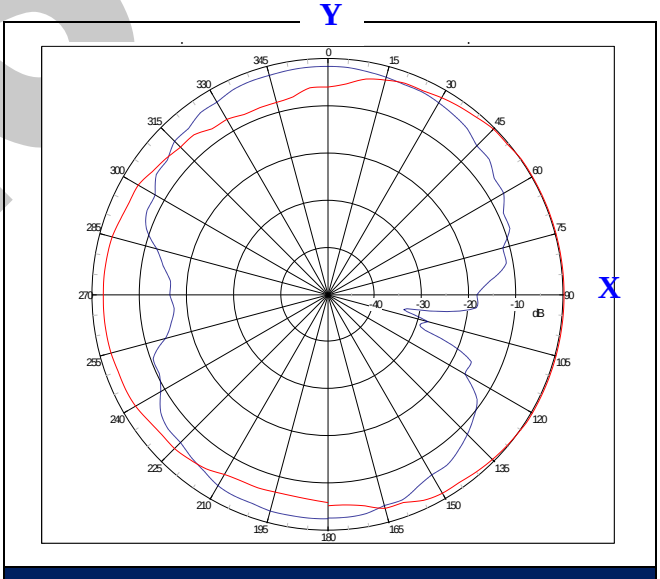
3D Pattern



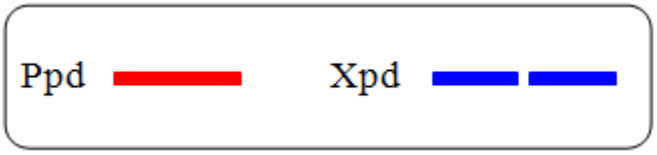
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



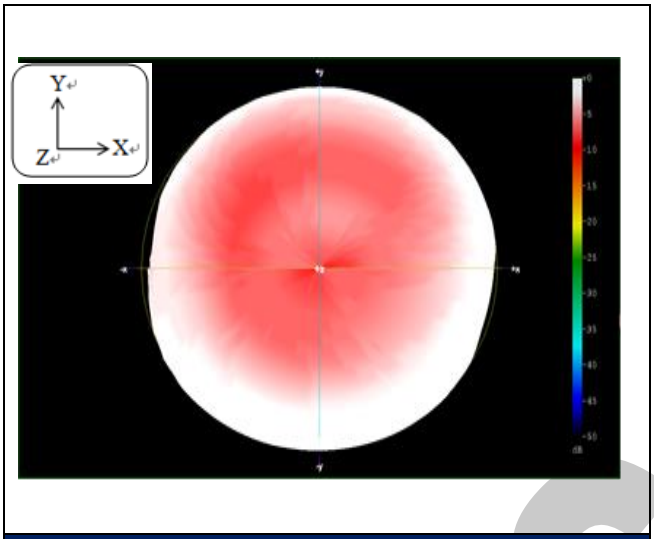
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



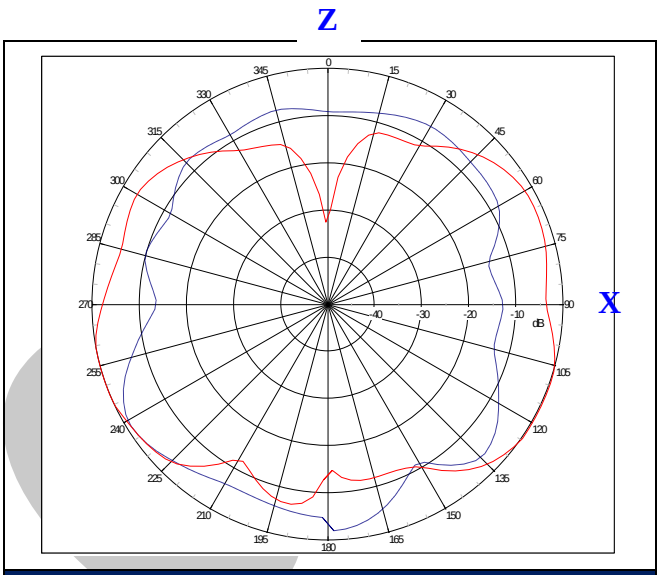
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



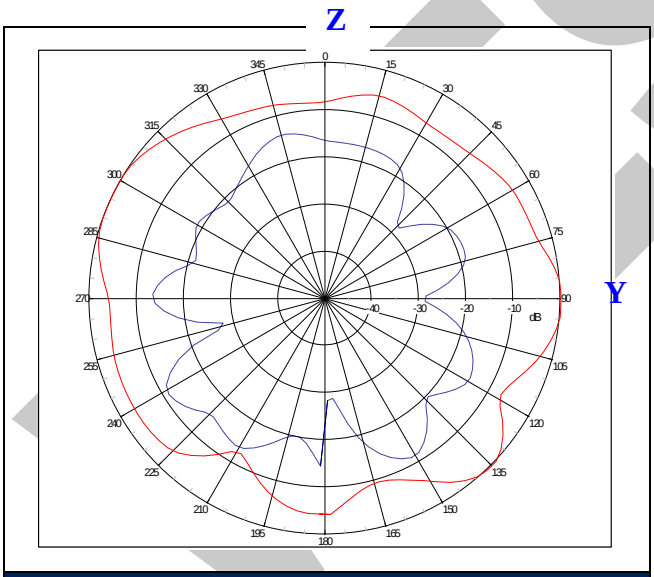
1.71GHz



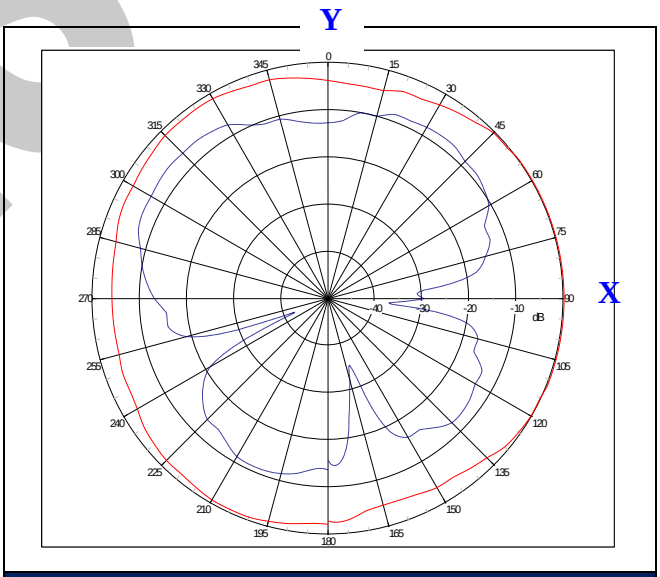
3D Pattern



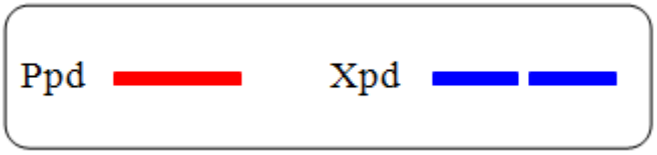
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



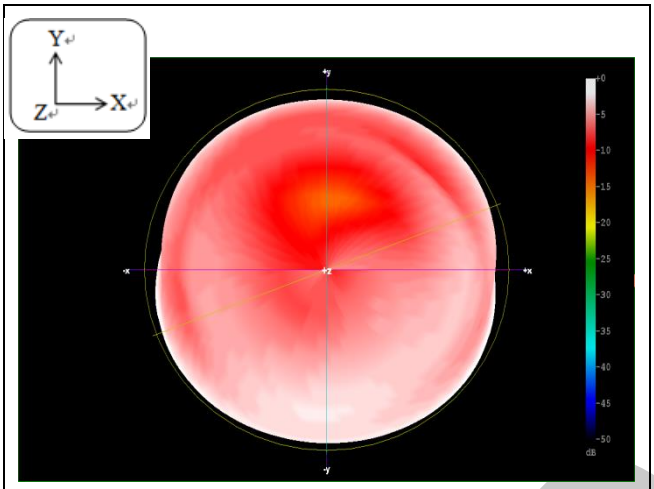
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



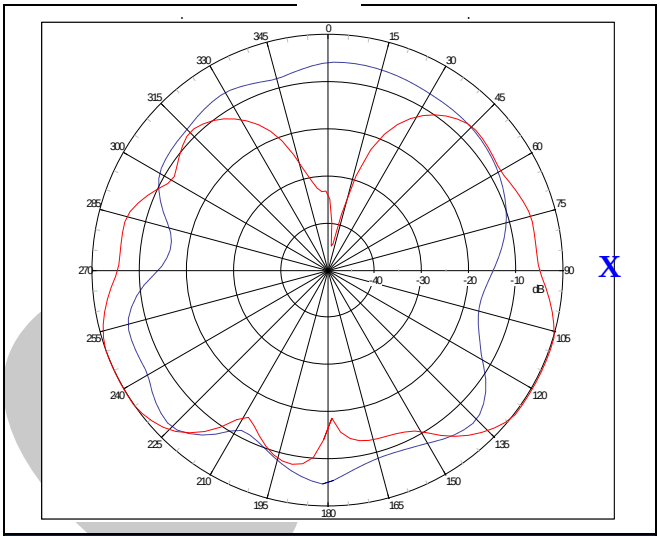
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



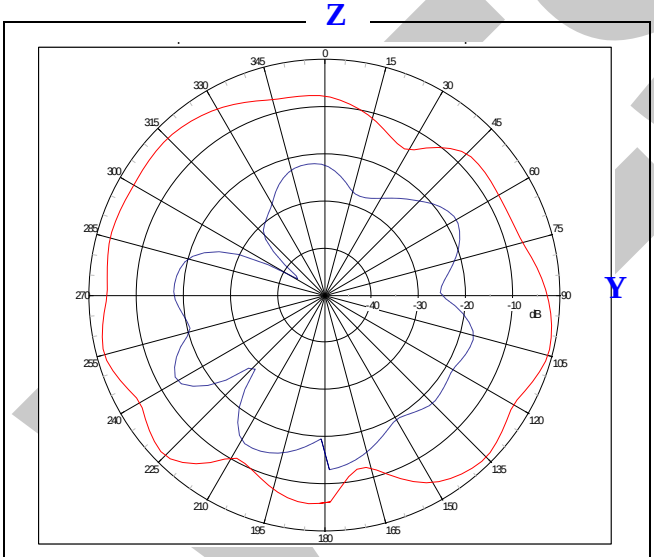
1.88GHz



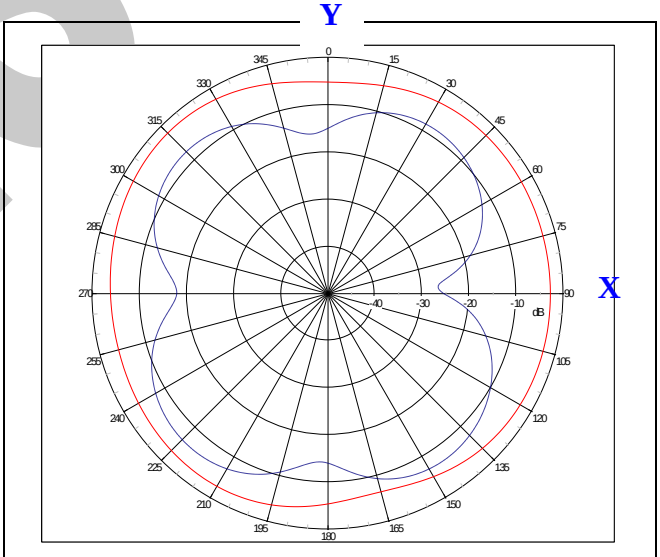
3D Pattern



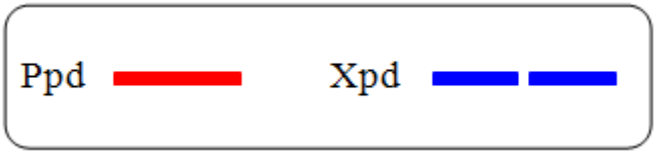
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



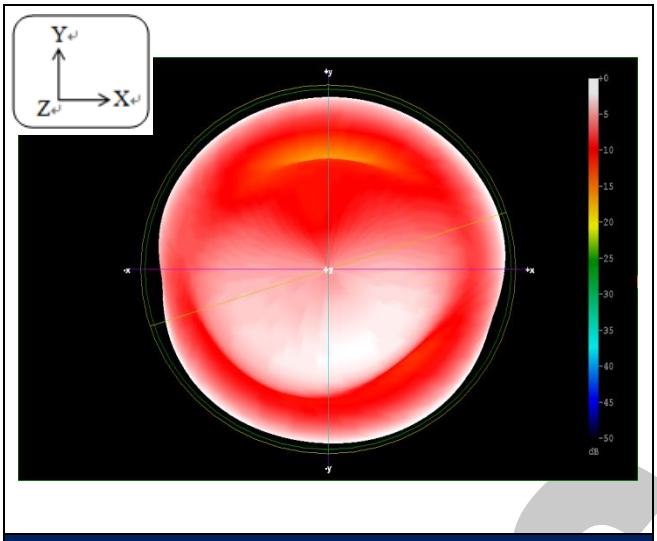
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



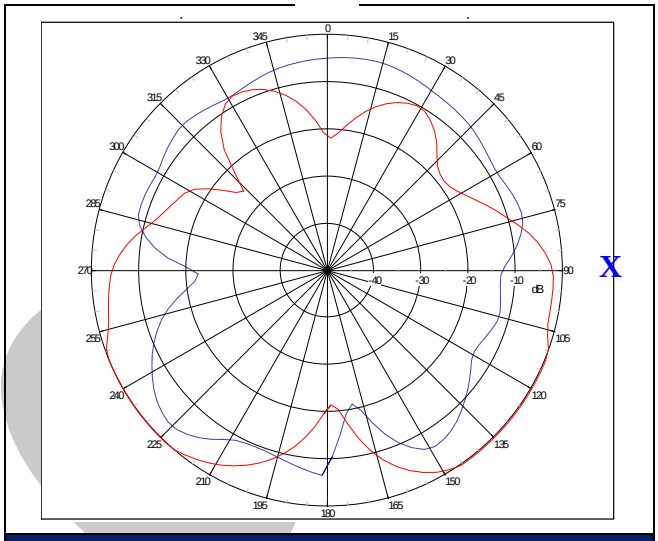
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



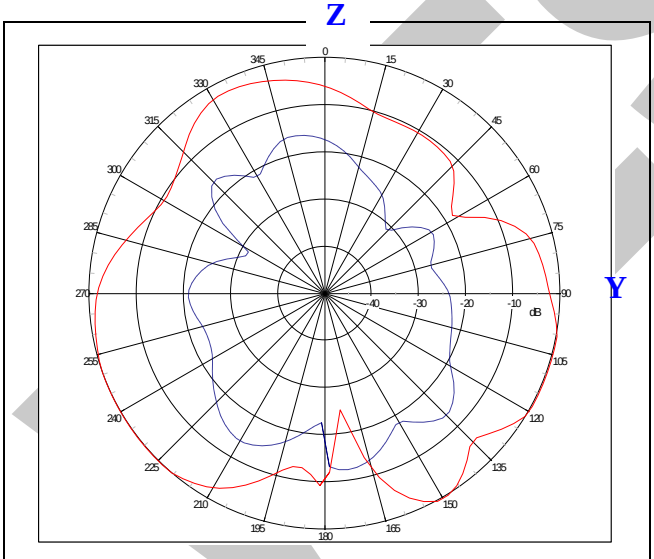
2.17GHz



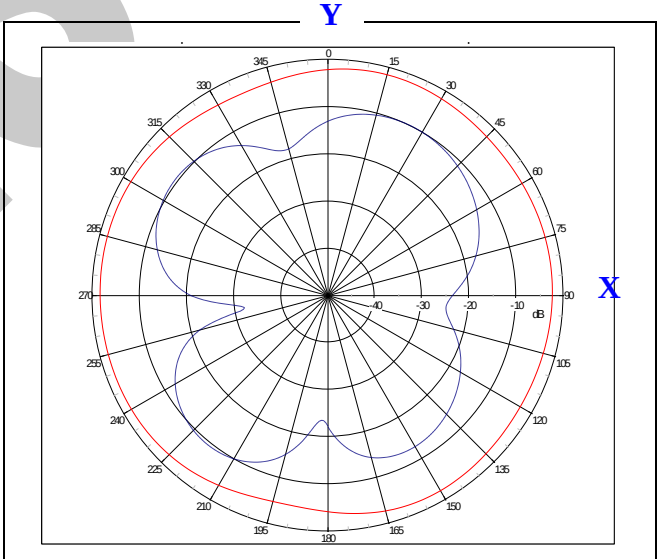
3D Pattern



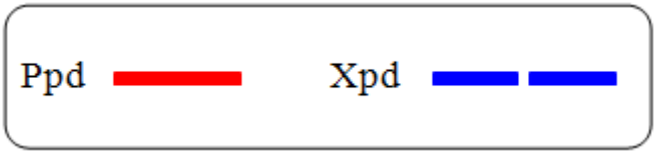
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



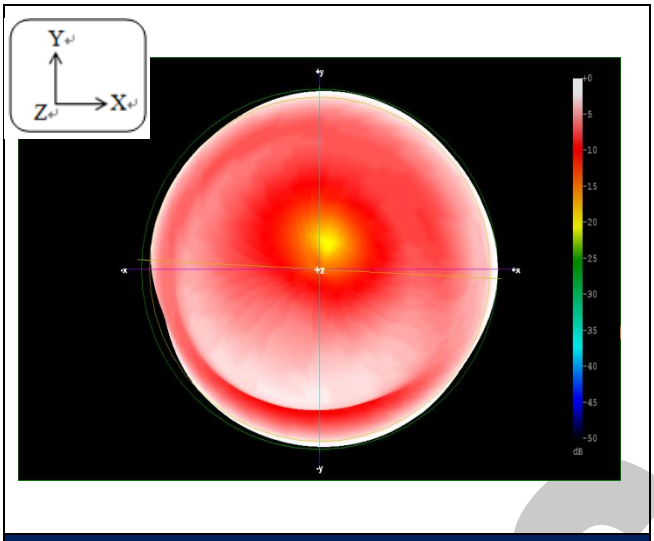
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



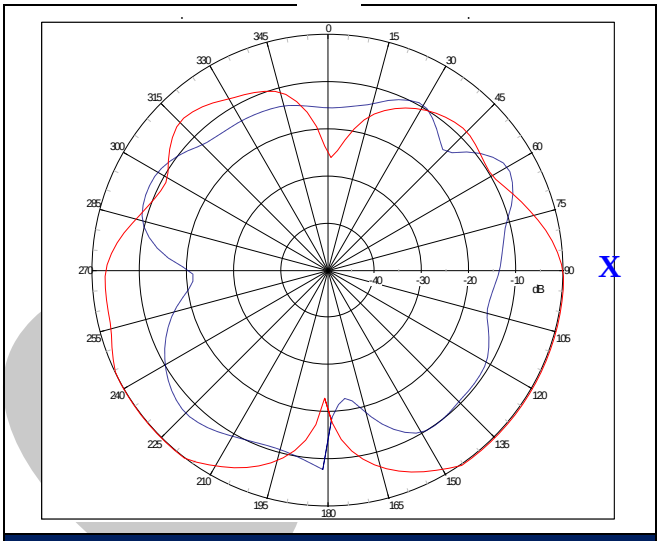
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



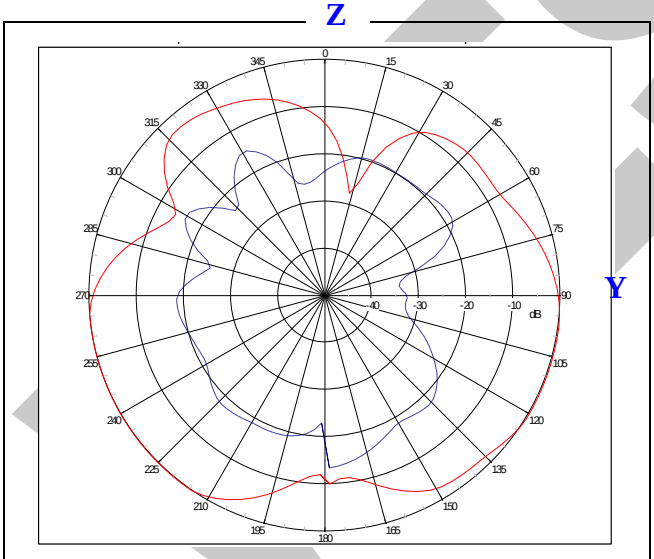
2.3GHz



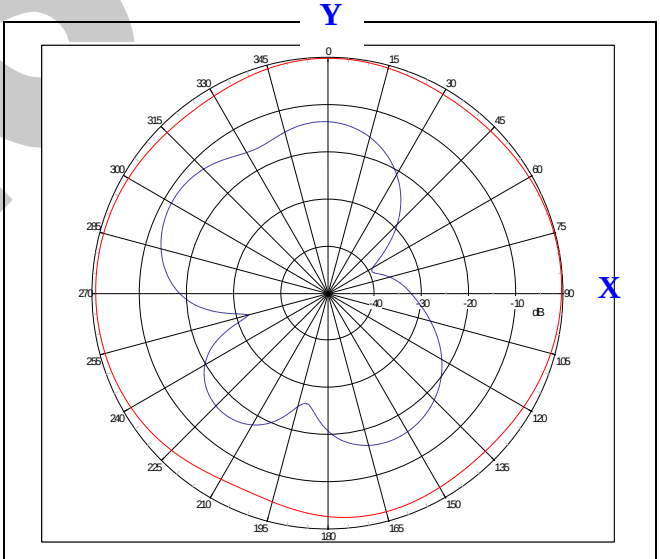
3D Pattern



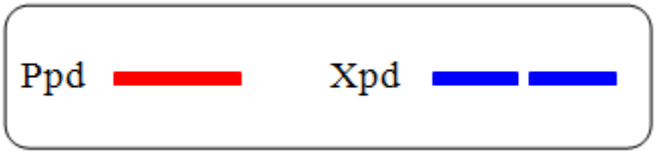
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



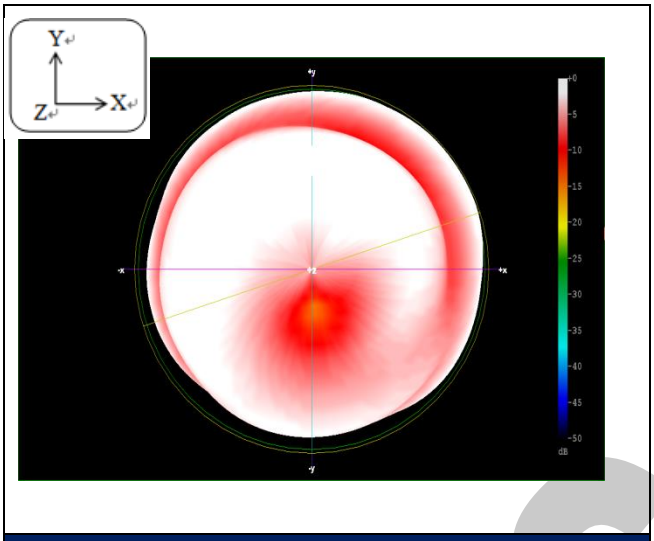
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



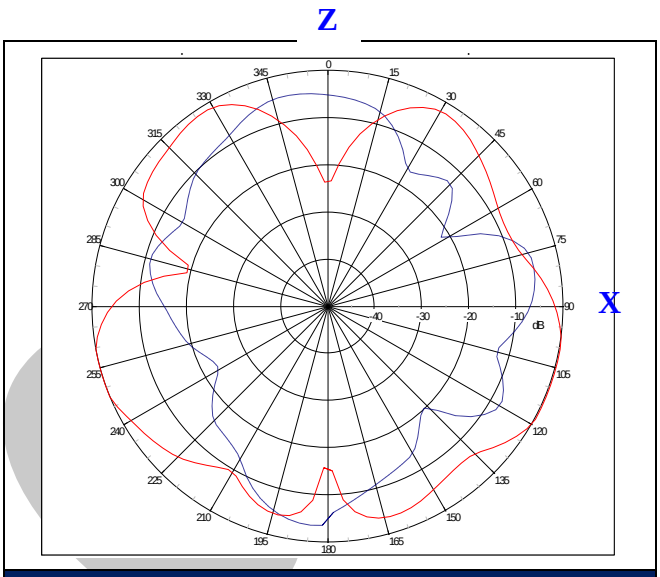
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



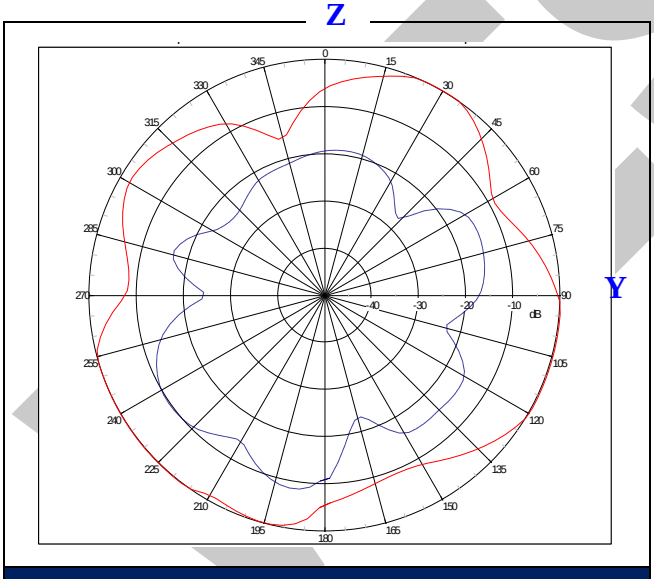
2.57GHz



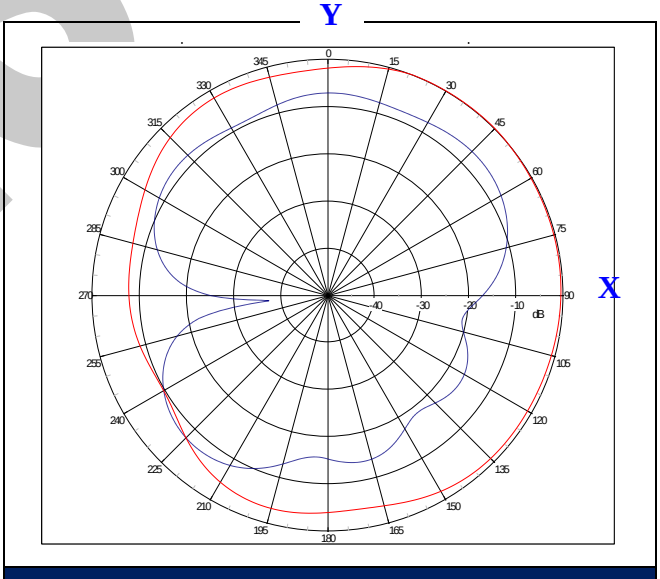
3D Pattern



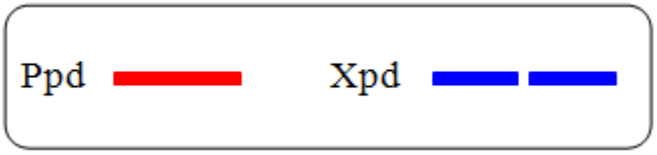
Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



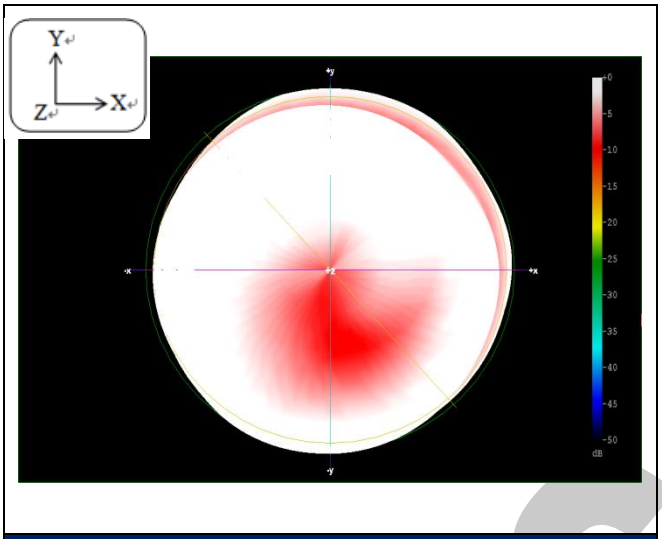
Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



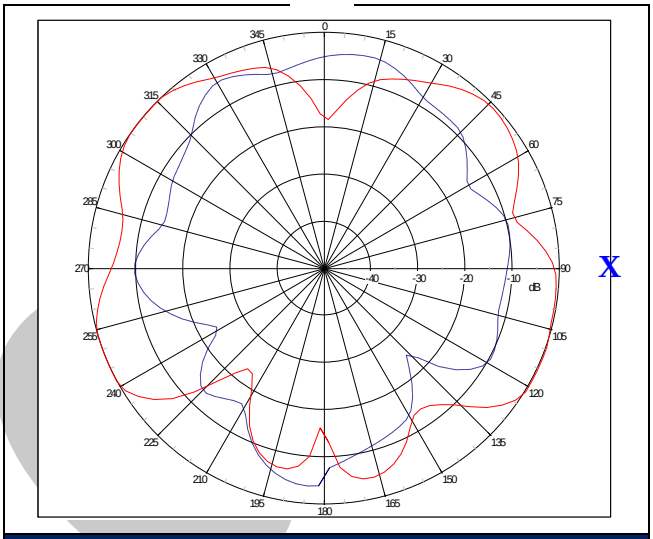
Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)



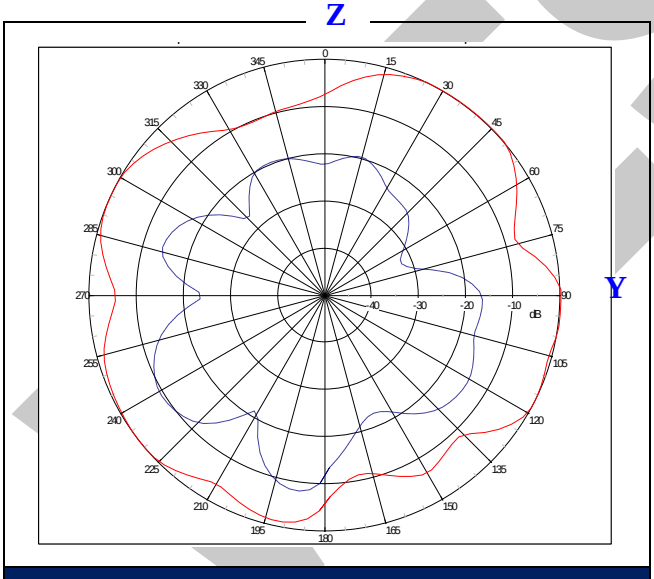
2.69GHz



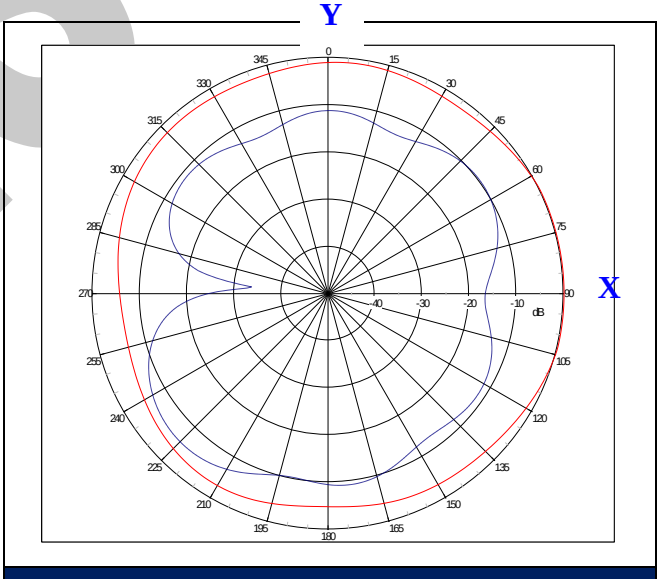
3D Pattern



Far-field Pattern @Phi=0 deg. (E-Theta Plane-Cut)



Far-field Pattern @Phi=90 deg. (E-Theta Plane-Cut)



Far-field Pattern @Theta=90 deg. (E-Phi Plane-Cut)

BUREAU VERITAS
Certification

WIESON TECHNOLOGIES (DONG GUAN) CO., LTD.

XINBAOWEI INDUSTRIAL BUILDING, HUANGANG INDUSTRIAL ZONE, HOUJIE TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, CHINA

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

Standards

ISO9001:2008

Scope of certification

DESIGN,MANUFACTURE AND SALES OF ELECTRONIC AND AUTOMOTIVE CONNECTORS,CABLES,WIRE HARNESS,RF AND ANTENNA PRODUCTS,CAR AUDIO AND VIDEO,PLASTIC INJECTION,STAMPING PARTS,TOOLING MOLD,LED LIGHTING.

Certification cycle start date: **25 February 2013**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on: **24 February 2016**

Original certification date: **25 February 2013**

Certificate No. 300430-US

Version A, Revision date: 25 February 2013

Certification Authority

ANAB ACCREDITED

Local office: Rm.403A-406, Tower C, The Fifth Square, No. 7, Chaoyangmen North Avenue,Beijing 100010, China

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call (+86 10 59683663)