

零件承認書文件CHECK LIST(系統料件)

零件廠商：鈺佳電子/英旺科技有限公司

零件名稱：HEAT SINK

技綱料號：25ST1-12311B-A7R

零件重量：144.800±15%

Sample Rev：A

1. 系統電子類元件：

項次	文件項目	YES	NO	Page
1	DATA SHEET (含機構尺寸)			
2	零件 Label 說明			
3	零件重量與照片			
4	包裝說明			
5	Safety report(UL,TUV,CE,CB...等)			
6	零件 Qualification test report			
7	零件樣品 6PCS(高單價零件，至少 1PCS)			
8	零件外觀判定標準(附上照片說明) 註 4			
9	其他			
10	以上資料電子檔(為 PDF 檔且是同 1 個 File / 附件 B)			
附件 E	Green Lab testing report(內含 BOM List)			
附件 F	Guarantee Letter(Follow HCSR)			

2. 系統機構類元件：

項次	文件項目	YES	NO	Page
1	DATA SHEET(圖面、爆炸圖、零件圖、印刷稿、規格)			4~12
2	零件 Label 說明			
3	零件重量與照片			13
4	包裝說明			14
5	Safety report(UL,TUV,CE,CB...等)			
6	塑膠件 UL 卡(Spec UL 94 Ed. 5 Oct 29 1996)			
7	零件 Marking 說明(Ex：模穴、Date Code、FAI)			15
8	塑膠及金屬材質證明			16~32
9	電鍍成分及報告			
10	零件 Qualification test report			33~130
11	零件樣品 6PCS			
12	零件外觀判定標準(附上照片說明) 註 4			131~137
13	其他			
14	以上資料電子檔(為 PDF 檔且是同 1 個 File / 附件 B)			
附件 E	Green Lab testing report(內含 BOM List)			
附件 F	GBT Guarantee Letter(Follow GBT HCSR)			

※ 註 1. Page 欄：請填入該文件於承認書中之頁碼

※ 註 2.各項說明文件內容應明訂零件交貨時之規格、方式；如捲盤、文字印刷為雷射或油墨等

※ 註 3.以上各項文件均需附上，始可送承認書

※ 註 4.一級大廠如 CPU/HDD/ODD/MEMORY 不需附上外觀判定標準只需依 Marking 進行檢驗

系統零件承認調查表

零件名稱	HEAT SINK	技鋼料號	25ST1-12311B-A7R	品名規格	HEAT SINK	填表日期	2024/03/28	填表人員 電話	T: Mobile: (02)8512-1572#368
廠商名稱	ABYTE	廠商料號	10CE0435-09			填表人員	CHUN	填表人 Email Address	chun_chuang@awo ntech.com

一、溴化物含有狀況調查表

項次	部位名稱	重量 (g)	材料名稱	材料型號	溴化物名稱	溴化物 CAS NO.	溴化物 含量(%)	溴化物 用途
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2								
3								
4								
5								

APPROVAL SHEET

Customer Name : 技宸科技股份有限公司

Part name : HEATSINK

Part No. : 10CE0435-09

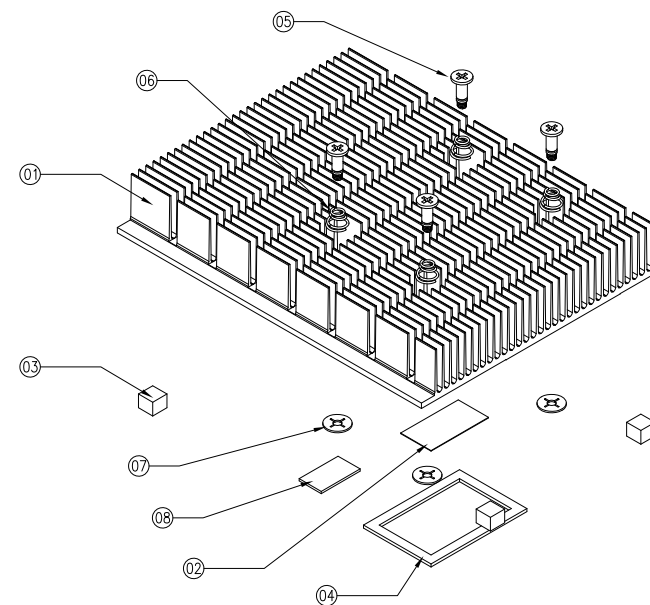
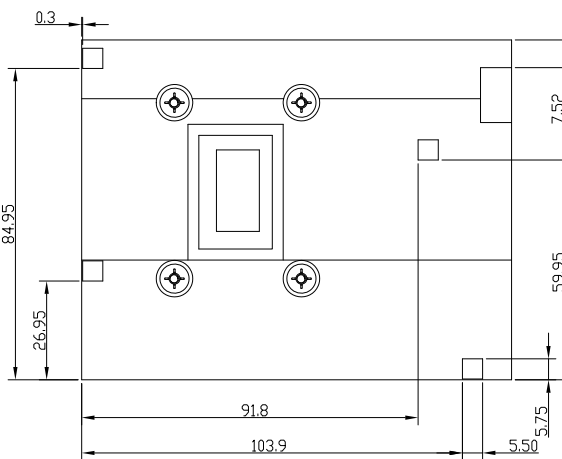
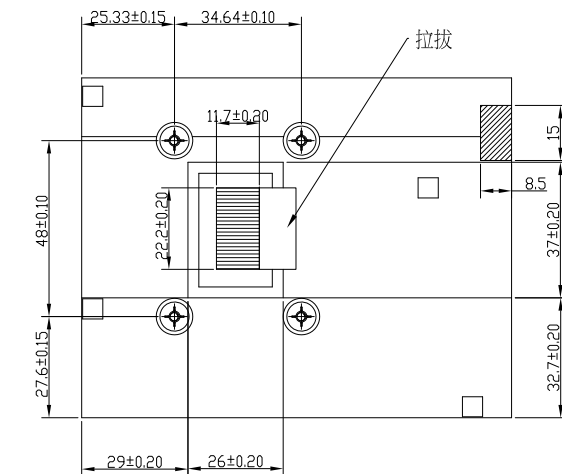
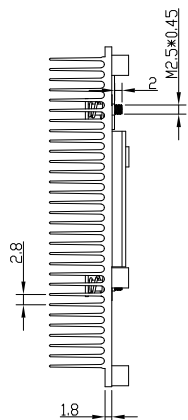
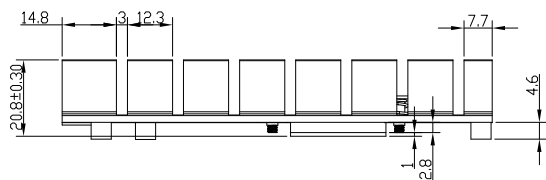
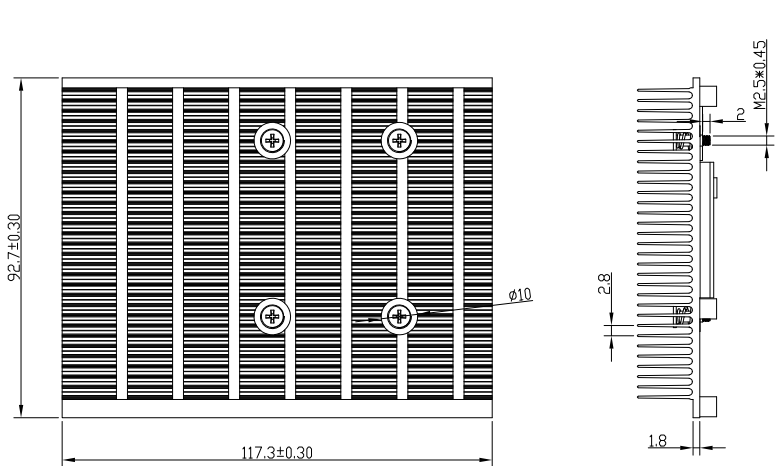
Customer Part No. : 25ST1-12311B-A7R

Issue Date : 2024.03.28

Revision : A02

Customer Approved

Vendor : Abyte (鈺佳) \Awon (英旺)		
Approval	Check	Designer
<div>2024.03.28</div> <div>ChenRay</div>		<div>2024.03.28</div> <div>WesmenLin</div>



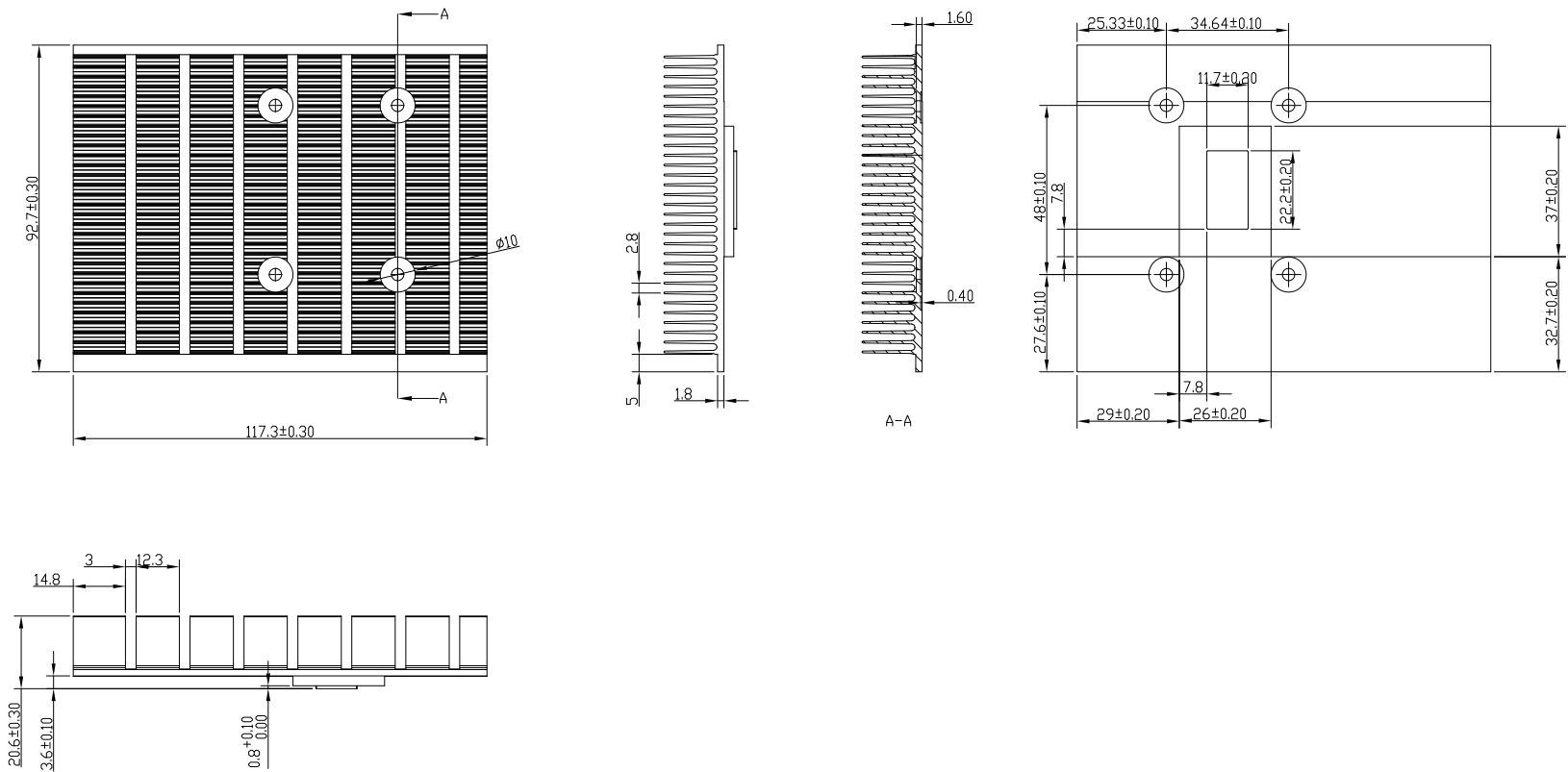
REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
A01	20220112	變更Rubber尺寸	Wesmen	
A02	20240321	新增Pad	Wesmen	
A03	20240328	取消拉拔	Wesmen	

1. All marked will be major dimensions, must follow FAI process to number and check.
2. Remove all burrs, shape edges and oil.
3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
4. RoHS and REACH compliance.

08	05F1509D-01	TIF130-05S-NS1-A1 (15*8.5*0.75mm)	1 PCS
07	06W0000-63	ORING	4 PCS
06	06SG0000-60	SPRING	4 PCS
05	06VS0000-33	SCREW	4 PCS
04	06SP0000-84	SPONGE	1 PCS
03	06RB0000-E1	SILICONE RUBBER	4 PCS
02	05A2212A-01	THERMALPAD	1 PCS
01	02A39301-01	HEATSINK	1 PCS
ITEM	PART NO.	DESCRIPTION	QTY




UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm.		THIRD ANGLE PROJECTION		AWON Technology 英旺科技有限公司 AWON TECHNOLOGY CO., LTD		DESCRIPTION. CE0435-09 ASSEMBLY		VRE. A03	
.X	±0.40	SHEET SIZE	SCALE	byte 鈺佳電子有限公司		PART NO.	COLOR.	FINISH.	MATERIAL.
.XX	±0.20	A2	1 : 1	ABYTE ELECTRONICS CO.,LTD		20HS0517-08	BLACK	Android	AL6063-T5
.XXX	±0.10	UNIT.	SHEET			WEIGHT.	APPROVED/DATE	CHECKED/DATE	DESIGNED/DATE
ANGULAR	±0.5°	mm	1 / 1			N/A	Ray_Chen	Ray_Chen	Ray_Chen
						OWNER.	2021/05/07	2021/05/07	2021/05/07

REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
△A	2022.02.11	變更外型	Wesmen Lin	

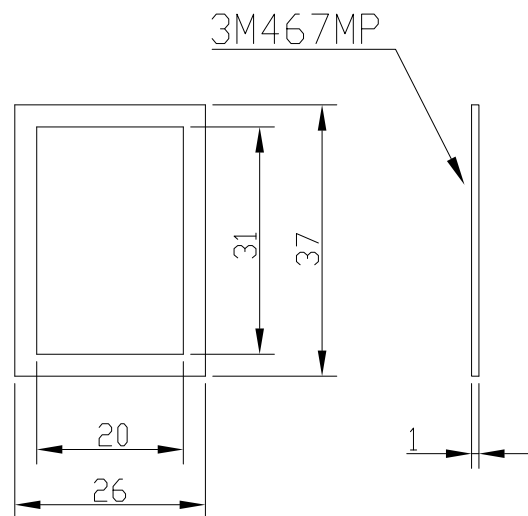


1. All marked will be major dimensions, must follow FAI process to number and check.
2. Remove all burrs, shape edges and oil.
3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
4. RoHS and REACH compliance.

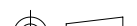


- Notes:
1.所有標註尺寸均為主要尺寸,且必須依重點尺寸量測編號進行FAI檢驗.
2.去除所有毛邊、銳角及油漬.
3.供應商需提供外觀、孔位、平行度及平整度檢驗治具.
4.此工件需符合RoHS.
5.不可使用一級環境管制物質.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm.		 THIRD ANGLE PROJECTION		 英旺科技有限公司 AWON TECHNOLOGY CO.,LTD		DESCRIPTION. HEATSINK				VRE. A1	
.X	±0.40	SHEET SIZE A2	SCALE 1 : 1	 鈺佳電子有限公司 ABYTE ELECTRONICS CO.,LTD	PART NO. 02A39301-01		COLOR. BLACK	FINISH. Android	MATERIAL. AL6063-T5		
.XX	±0.20				WEIGHT. N/A		APPROVED/DATE Ray_Chen 2021/05/07	CHECKED/DATE Ray_Chen 2021/05/07	DESIGNED/DATE Ray_Chen 2021/05/07		
.XXX	±0.10	UNIT. mm	SHEET 1 / 1		OWNER. N/A						
ANGULAR	±0.5°										

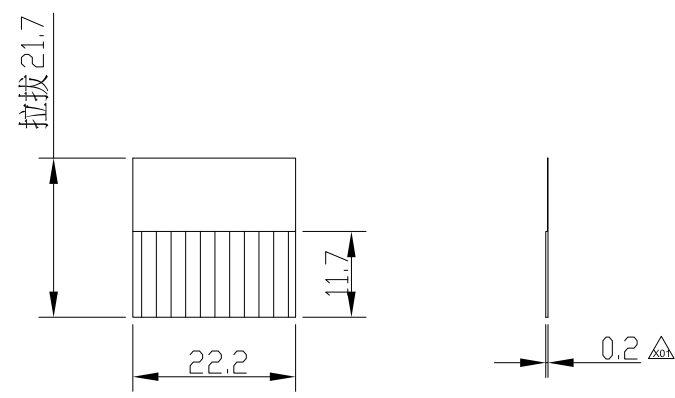
REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
X00			Ray	





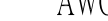
1. All marked will be major dimensions, must follow FAI process to number and check.
2. Remove all burrs, shape edges and oil.
3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
4. RoHS and REACH compliance.


UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm.		 THIRD ANGLE PROJECTION		 英旺科技有限公司 AWON TECHNOLOGY CO.,LTD		DESCRIPTION. SPONGE				VRE. X00	
.X	±0.40	SHEET SIZE A4	SCALE 2 : 1	 鈺佳電子有限公司 ABYTE ELECTRONICS CO.,LTD		PART NO. 06SP0000-84		COLOR.	FINISH.	MATERIAL. KE5612+3M467MP	
.XX	±0.20					WEIGHT. N/A		APPROVED/DATE Ray_Chen 2021/04/13	CHECKED/DATE Ray_Chen 2021/04/13	DESIGNED/DATE Ray_Chen 2021/04/13	
.XXX	±0.10	OWNER. N/A									
ANGULAR	±0.5°	UNIT. mm	SHEET 1 / 1								

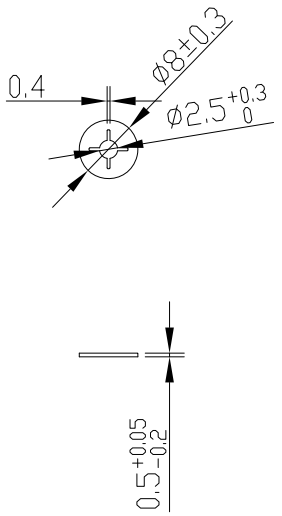
REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
△01	2022.02.11	變更厚度	Wesmen Lin	



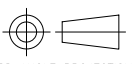


- 1. All marked will be major dimensions, must follow FAI process to number and check.
- 2. Remove all burrs, shape edges and oil.
- 3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
- 4. RoHS and REACH compliance.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm.				 <div>英旺科技有限公司 AWON TECHNOLOGY CO.,LTD</div>  <div>鈺佳電子有限公司 ABYTE ELECTRONICS CO.,LTD</div>	DESCRIPTION. THERMAL PAD				VRE. X01
		THIRD ANGLE PROJECTION			PART NO. 05A2212A-01	COLOR.	FINISH.	MATERIAL. PSX	
		SHEET SIZE A4			SCALE 2 : 1	WEIGHT. N/A	APPROVED/DATE Ray_Chen 2021/04/13	CHECKED/DATE Ray_Chen 2021/04/13	DESIGNED/DATE Ray_Chen 2021/04/13
		UNIT. mm			SHEET 1 / 1	OWNER. N/A			
.X	±0.40								
.XX	±0.20								
.XXX	±0.10								
ANGULAR	±0.5°								

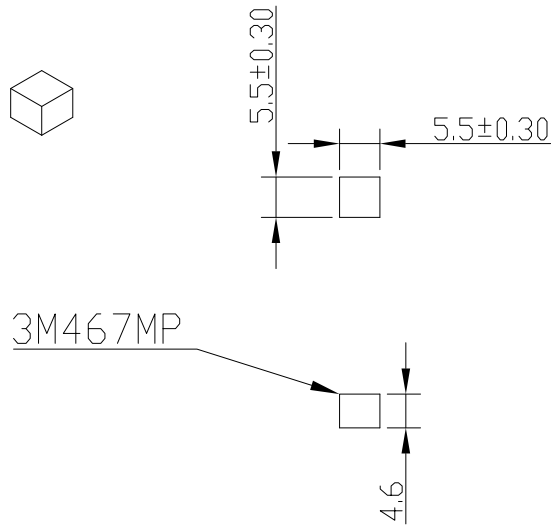
REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
				



1. All marked will be major dimensions, must follow FAI process to number and check.
2. Remove all burrs, shape edges and oil.
3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
4. RoHS and REACH compliance.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm.		 THIRD ANGLE PROJECTION		 英旺科技有限公司 AWON TECHNOLOGY CO.,LTD	DESCRIPTION. O-RING			VRE. A
		SHEET SIZE	SCALE	 钰佳电子有限公司 ABYTE ELECTRONICS CO.,LTD	PART NO.	COLOR.	FINISH.	MATERIAL.
		A4	2 : 1		060W0000-63	Colorless		PC
		UNIT.	SHEET		WEIGHT.	APPROVED/DATE	CHECKED/DATE	DESIGNED/DATE
		mm	1 / 1		N/A	Ray_Chen 2017/12/26	Ray_Chen 2017/12/26	Ray_Chen 2017/12/26
.X	±0.40				OWNER.			
.XX	±0.20							
.XXX	±0.10							
ANGULAR	±0.5°							

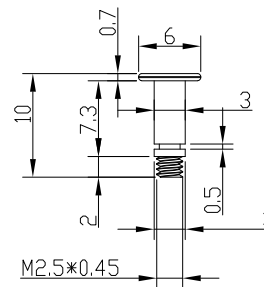
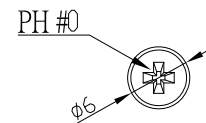
REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
△	20220112	變更尺寸	Wesmen	



- 1. All marked will be major dimensions, must follow FAI process to number and check.
- 2. Remove all burrs, shape edges and oil.
- 3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
- 4. RoHS and REACH compliance.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm.		 THIRD ANGLE PROJECTION		 英旺科技有限公司 AWON TECHNOLOGY CO., LTD 鈺佳電子有限公司 ABYTE ELECTRONICS CO.,LTD	DESCRIPTION. Rubber				VRE.	X1
					PART NO.		COLOR.	FINISH.	MATERIAL.	
					06RB0000-E1				3M467MP+KE5612	
					WEIGHT.		APPROVED/DATE	CHECKED/DATE	DESIGNED/DATE	
.X	±0.40	SHEET SIZE	SCALE	UNIT.	SHEET	OWNER.	Ray_Chen	Ray_Chen	Ray_Chen	
.XX	±0.20	A4	1 : 1				2021/05/07	2021/05/07	2021/05/07	
.XXX	±0.10	mm	1 / 1							
ANGULAR	±0.5°									

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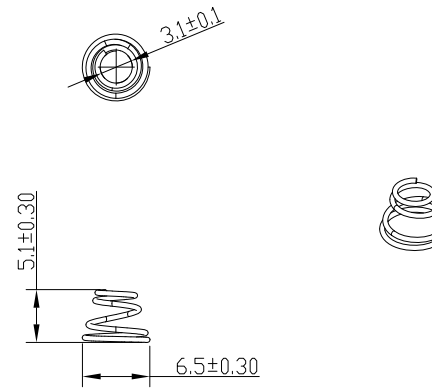


Fastener NOTE:
MATERIAL:1018
COLOR:銀色

1. All marked will be major dimensions, must follow FAI process to number and check.
2. Remove all burrs, shape edges and oil.
3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
4. RoHS and REACH compliance.



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm.		 THIRD ANGLE PROJECTION		 英旺科技有限公司 AWON TECHNOLOGY CO., LTD		DESCRIPTION. SCREW VRE. X00			
.X	±0.40	SHEET SIZE A3	SCALE 2 : 1	 鈺佳電子有限公司 ABYTE ELECTRONICS CO.,LTD	PART NO. 06VS0000-33		COLOR. Silver	FINISH.	MATERIAL. 1018
.XX	±0.20				WEIGHT. N/A				
.XXX	±0.10	UNIT. mm	SHEET 1 / 1		OWNER. N/A		APPROVED/DATE Ray_Chen 2020/02/24	CHECKED/DATE Ray_Chen 2020/02/24	DESIGNED/DATE Ray_Chen 2020/02/24
ANGULAR	±0.5°								

REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
				

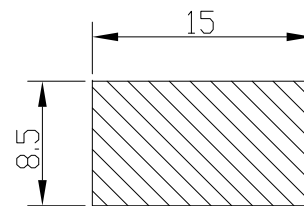


SPRING SPEC
Material : Swp-B
FREE LENGTH: 5.1±0.3 MM
SPRING COILS: 3.0 COILS
WIRE GAGE DIAMETER : 0.6 MM
OUTER DIAMETER : 6.5MM+/-0.3
FINISH: NI COVER
K=0.39kg/mm

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2. Remove all burrs, shape edges and oil.
3. Supplier needs to provide test fixtures for cosmetic, hole position, parallelism and flatness checking.
4. RoHS and REACH compliance.

UNLESS OTHERWISE SPECIFIED ,ALL DIMENSIONS ARE IN mm.		 THIRD ANGLE PROJECTION		 英旺科技有限公司 AWON TECHNOLOGY CO.,LTD		DESCRIPTION. SPRING VRE. X00				
.X	±0.40	SHEET SIZE A3	SCALE 2 : 1	 鈺佳電子有限公司 ABYTE ELECTRONICS CO.,LTD		PART NO. 06SG0000-60		COLOR. Silver	FINISH.	MATERIAL. 1018/SWP
.XX	±0.20					WEIGHT. N/A				
.XXX	±0.10					APPROVED/DATE Ray_Chen 2020/02/24		CHECKED/DATE Ray_Chen 2020/02/24		DESIGNED/DATE Ray_Chen 2020/02/24
ANGULAR	±0.5°	UNIT. mm	SHEET 1 / 1			OWNER. N/A				

REVISIONS				
LTR	DATE	UPDATE DESCRIPTION	SIGN	
	2024.03.28	取消拉拔	Wesmen	



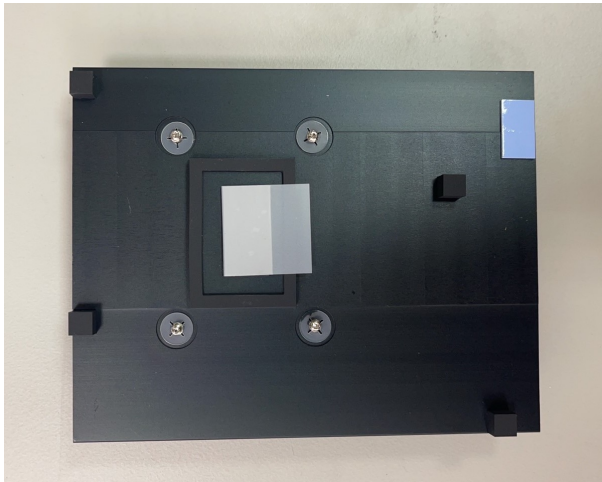
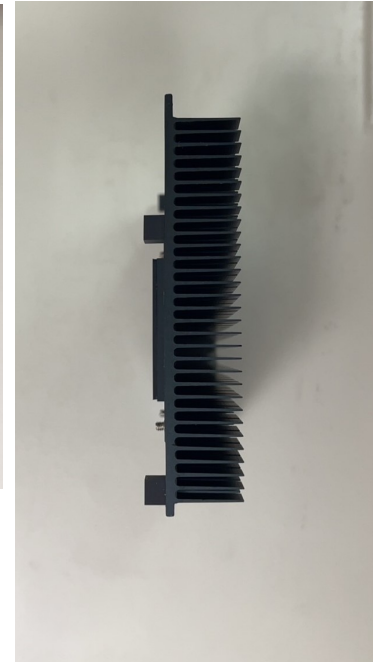
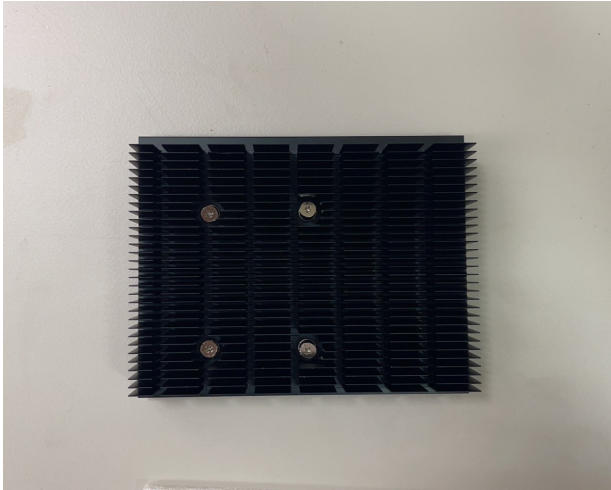
單面背膠 (PET)



Abyte Electronics Co.Ltd.

Photo

10CE0435-09



單重: 144.800g±15%



First Article Inspection

Part Name: Heat sink

Part No : 10CE0435-09

Supplier/Customer : 技宸

Submission Date : 2022.02.16

DRAWING SPECIFICATIONS				INSPECTION RESULTS										INSPECTION ANALYSIS						COMMENTS
ITEM	NOMINAL	+TOL	-TOL	Sample Number					Deviation from Nominal					Mean	% Tolerance		Accept/Reject		Inspection Method	
				1	2	3	4	5	1	2	3	4	5		UPPER	LOWER	HIGH	LOW		
1	92.70	0.30	0.30	92.66	92.71	92.70	92.70	92.72	-0.040	0.010	0.000	0.000	0.020	92.698	7%	13%	Accept	Accept	卡尺	
2	117.30	0.30	0.30	117.30	117.31	117.31	117.29	117.31	0.000	0.010	0.010	-0.010	0.010	117.304	3%	3%	Accept	Accept	卡尺	
3	10.00	0.40	0.40	9.98	10.05	9.98	10.04	10.02	-0.020	0.050	-0.020	0.040	0.020	10.014	13%	5%	Accept	Accept	三次元	
4	2.80	0.40	0.40	2.79	2.82	2.81	2.82	2.75	-0.010	0.020	0.010	0.020	-0.050	2.798	5%	13%	Accept	Accept	三次元	
5	1.80	0.40	0.40	1.82	1.81	1.77	1.82	1.81	0.020	0.010	-0.030	0.020	0.010	1.806	5%	8%	Accept	Accept	三次元	
6	2.00	0.40	0.40	2.00	2.00	1.98	2.04	1.97	0.000	0.000	-0.020	0.040	-0.030	1.998	10%	8%	Accept	Accept	三次元	
7	2.50	0.40	0.40	2.52	2.55	2.49	2.55	2.46	0.020	0.050	-0.010	0.050	-0.040	2.514	13%	10%	Accept	Accept	三次元	
8	0.45	0.20	0.20	0.45	0.47	0.40	0.48	0.45	0.000	0.020	-0.050	0.030	0.000	0.450	15%	25%	Accept	Accept	三次元	
9	27.60	0.15	0.15	27.61	27.65	27.62	27.61	27.56	0.010	0.050	0.020	0.010	-0.040	27.610	33%	27%	Accept	Accept	卡尺	
10	48.00	0.10	0.10	47.98	48.04	48.01	48.01	48.00	-0.020	0.040	0.010	0.010	0.000	48.008	40%	20%	Accept	Accept	卡尺	
11	25.33	0.15	0.15	25.35	25.33	25.30	25.37	25.29	0.020	0.000	-0.030	0.040	-0.040	25.328	27%	27%	Accept	Accept	卡尺	
12	34.64	0.10	0.10	34.63	34.67	34.66	34.69	34.63	-0.010	0.030	0.020	0.050	-0.010	34.656	50%	10%	Accept	Accept	卡尺	
13	11.70	0.20	0.20	11.71	11.74	11.68	11.71	11.66	0.010	0.040	-0.020	0.010	-0.040	11.700	20%	20%	Accept	Accept	卡尺	
14	22.20	0.20	0.20	22.21	22.19	22.21	22.23	22.18	0.010	-0.010	0.010	0.030	-0.020	22.204	15%	10%	Accept	Accept	卡尺	
15	29.00	0.20	0.20	28.97	29.02	28.95	28.98	29.00	-0.030	0.020	-0.050	-0.020	0.000	28.984	10%	25%	Accept	Accept	卡尺	
16	26.00	0.20	0.20	26.01	25.99	25.98	26.05	25.98	0.010	-0.010	-0.020	0.050	-0.020	26.002	25%	10%	Accept	Accept	卡尺	
17	32.70	0.20	0.20	32.70	32.70	32.65	32.68	32.67	0.000	0.000	-0.050	-0.020	-0.030	32.680	0%	25%	Accept	Accept	卡尺	
18	37.00	0.20	0.20	36.97	37.04	36.99	37.03	36.97	-0.030	0.040	-0.010	0.030	-0.030	37.000	20%	15%	Accept	Accept	卡尺	
19	84.95	0.20	0.20	84.90	85.00	84.97	84.96	84.91	-0.050	0.050	0.020	0.010	-0.040	84.948	25%	25%	Accept	Accept	卡尺	
20	26.95	0.20	0.20	26.94	26.99	26.90	26.97	26.96	-0.010	0.040	-0.050	0.020	0.010	26.952	20%	25%	Accept	Accept	卡尺	
21	91.75	0.20	0.20	91.72	91.77	91.70	91.78	91.75	-0.030	0.020	-0.050	0.030	0.000	91.744	15%	25%	Accept	Accept	卡尺	
22	103.90	0.40	0.40	103.90	103.88	103.91	103.95	103.86	0.000	-0.020	0.010	0.050	-0.040	103.900	12%	10%	Accept	Accept	卡尺	
23	5.50	0.40	0.40	5.47	5.53	5.49	5.49	5.51	-0.030	0.030	-0.010	-0.010	0.010	5.498	8%	8%	Accept	Accept	三次元	
24	5.75	0.20	0.20	5.75	5.80	5.77	5.77	5.75	0.000	0.050	0.020	0.020	0.000	5.768	25%	0%	Accept	Accept	三次元	
25	59.95	0.20	0.20	59.90	59.98	59.97	59.98	59.94	-0.050	0.030	0.020	0.030	-0.010	59.954	15%	25%	Accept	Accept	卡尺	
26	19.80	0.40	0.40	19.81	19.78	19.81	19.79	19.77	0.010	-0.020	0.010	-0.010	-0.030	19.792	3%	8%	Accept	Accept	卡尺	
27	14.80	0.40	0.40	14.77	14.78	14.77	14.83	14.82	-0.030	-0.020	-0.030	0.030	0.020	14.794	7%	7%	Accept	Accept	卡尺	
28	3.00	0.40	0.40	2.97	3.04	2.99	3.03	2.99	-0.030	0.040	-0.010	0.030	-0.010	3.004	10%	7%	Accept	Accept	三次元	
29	12.30	0.40	0.40	12.25	12.29	12.25	12.33	12.25	-0.050	-0.010	-0.050	0.030	-0.050	12.274	7%	13%	Accept	Accept	卡尺	
30	1.00	0.40	0.40	0.98	1.02	0.96	1.05	1.01	-0.020	0.020	-0.040	0.050	0.010	1.004	13%	10%	Accept	Accept	三次元	
31	0.30	0.40	0.40	0.29	0.31	0.29	0.33	0.32	-0.010	0.010	-0.010	0.030	0.020	0.308	7%	3%	Accept	Accept	三次元	
32	1.00	0.40	0.40	1.01	0.98	0.97	1.02	1.01	0.010	-0.020	-0.030	0.020	0.010	0.998	5%	8%	Accept	Accept	三次元	
33	2.80	0.40	0.40	2.76	2.84	2.80	2.79	2.76	-0.040	0.040	0.000	-0.010	-0.040	2.790	10%	10%	Accept	Accept	三次元	
34	7.70	0.40	0.40	7.67	7.72	7.71	7.74	7.66	-0.030	0.020	0.010	0.040	-0.040	7.700	10%	10%	Accept	Accept	三次元	
35	4.80	0.40	0.40	4.82	4.78	4.76	4.81	4.82	0.020	-0.020	-0.040	0.010	0.020	4.798	5%	10%	Accept	Accept	三次元	
36	表面處理			陽極黑色					OK	OK	OK	OK	OK		-	-			目視	

APPROVED RESULT:

APPROVE ☒

REJECT ☐

LIMITED APPROVE ☐

Approved by : JUN

Checked by : JUN

Inspected by : shaoziwu

CERTIFICATE/OF QUALITY

Commodity: Extrusion 6063-T5

Manufacturer: Guangdong Xingfa Aluminium Co., Ltd.

Standard: GB/T6892 -2006 GB/T3190-2008

Report No.: QR/XF-ZJ-08



DRAWN G NO.	CHEMICAL COMPOSITION,%									TENSILE STRENGTH (N/mm ²)	YIELD STRENGTH (N/mm ²)	ELONGATI ON (%)	HARDNE SS (Web)
	Si	Mg	Fe	Mn	Cu	Zn	Cr	Ti	AL				
	STANDARD									STANDARD			
	0.2-0.6	0.45-0.9	≤0.35	≤0.10	≤0.10	≤0.10	≤0.10	≤0.10	≤98	≥160	≥110	≥8	≥8
	RESULT									RESULT			
6063-T5	0.397	0.512	0.168	0.038	0.002	0.010	0.005	0.016	98.85	180	140	10.0	10.0

DATE: 2013.05.15

CHECK:

QUALITY CONTROL: 何万杰





中國鋼鐵

CHINA STEEL

品質證明書

TEST CERTIFICATE

CHINA STEEL CORPORATION

1 Chung Kang Road, Hsiao Kang, Kaohsiung

81233 Taiwan

Tel: 886 (7) 802 1111

Fax: 886 (7) 802 2511

E-mail: t211mae@mail.csc.com.tw

CERTIFICATE OF INSPECTION

B0017-01

COMPANY REGISTRATION NUMBER: 30414175 0085

客戶名稱 CUSTOMER	PADICO TRADING (HK) LIMITED	ROOM 1103, LIPPO SUN PLAZA, 28 CANTON ROAD, TSIMSHATSUI, KOWLOON, HONG KONG	產品名稱 PRODUCT	ROD-CARBON STEEL	
規格名稱 SPEC	JIS G3507-1 SWRCH18A (SCWQ)		發票號碼 INVOICE NO.	042589/ED6832	證明書編號 CERTIFICATE NO.
			客戶編號 CUSTOMER NO.	PO452H K	中鋼訂單編號 CSC ORDER NO.
			交運日期 SHIPPING DATE	ON/ABOUT MAY. 26, 2015	證明書日期 T/C ISSUE DATE
檢 驗 INSP.	CSC MILL INSPECTION	T/C 01 - 03	客戶訂單編號 CUST ORDER NO.		

項目 ITEM NO.	產品序號 SEQ. NO.	尺寸 DIMENSIONS			數量 QTY	質量 MASS kg	爐號 HEAT NO.	化學成分 CHEMICAL COMPOSITION %													備 註 REMARKS					
		直徑/厚 DIA/THICK mm	寬度 WIDTH mm	長度 LENGTH mm				C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	B								
001	DJ280 01	5.50		COIL	33	48,703	3VL57	19	76	17	9	5					32	1								
002	VP486 01	6.50		COIL	22	49,507	1F284	17	76	22	7	5					55	1								
			TOTAL:		55	98,210																				

深圳大友鋼鐵有限公司

文 管 室

管 制 發 行 章

發行日期:

深圳大友鋼鐵有限公司

文 管 室

外 部 文 件 確 認 章

文件編號:

確認人:

A15060108

註冊
NOTES

茲證明本表所列產品，均依材料規格製造及試驗，並符合規格之要求。

WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENT OF THE ABOVE MATERIAL SPECIFICATION.

Chung Chiao Luang

冶金技術處處長
GENERAL MANAGER, METALLURGICAL DEPARTMENT



HONGDUK INDUSTRIAL CO., LTD

FACTORY:#1855,JANGHUNG-DONG,NAM-GU,POHANG-CITY,KYOUNGBUK,(790-240),KOREA

TEL:++82-54-271-3600 FAX:++82-54-271-3699

TEST CERTIFICATE

시험 성적서

Date of Shipment : 2014 - 12 - 13

선적/출하일자

Date of Issue : 2014 - 12 - 11

발행일자

Customer DONGHAO 고객	Wire Dimension & Grade(線徑, 種別) 1 mm SWP-B	Commodity Piano Wires 제품	Specification JIS G 3522 적용규격
Customer's PO No. KSTSW141013-83 수주번호	Hongduk Industrial's Lot No / EX No. 지시번호 NS-4358/14	L/C No.(T/T No.D/A No) 8001LC141119001	Total Coils 9 수량
		Total Net weight 900.00 kgs 총중량	

Heat No : SF38928

A. Chemical Composition(%)

		Chemical Composition(%)										
		C	Si	Mn	P	S	Cu	Cr	V	Al	O2	Ti
Specification	Min	0.80	0.12	0.30								
	Max	0.85	0.32	0.60	0.025	0.025	0.20					
Actual		0.824	0.177	0.458	0.010	0.003	0.013					

B. Mechanical Properties

Item	Diameter 1 mm 선경		Tensile Strength	Torsion Value	Torsion State	Wrap	Bend	Coiling	Reduction of Area	Decarburization	Defects	Appearance	Hardness	Coil weight	Remark
	Tolerance	Ovality	인장강도	비틀림횟수	비틀림상태	감기시험	굽힘시험	코일링시험	단면감소율	탈탄	흠깊이	외관	경도	중량	비고
	허용차	편경차	(N/mm ²)	(Turns)		(4xD)	(90°)		(%)		(mm)			(kgs)	
Spec. Min	0.990		2,260	25	Good					Good	0.020	Good			
Coil No Max	1.010	0.010	2,450												
113	0.995	0.004	2,334	42	Pass					Pass	0.007	Pass		100.00	
114	0.995	0.004	2,334	42	Pass					Pass	0.007	Pass		100.00	
115	0.995	0.004	2,334	42	Pass					Pass	0.007	Pass		100.00	
116	0.996	0.002	2,299	45	Pass					Pass	0.007	Pass		100.00	
117	0.996	0.002	2,299	45	Pass					Pass	0.007	Pass		100.00	
118	0.996	0.002	2,299	45	Pass					Pass	0.007	Pass		100.00	

Y.H. NOH

Noh, Young-Hoon
Quality Control Team Manager

Continue



KLX
康隆鑫

成都康隆鑫塑业有限责任公司
Chengdu Kanglongxin Plastics Co., Ltd.

KLX PC-811A薄膜物性表

特性 Property	项目 Item	测试方法 Test Method	单位 Unit	测试值 Standard Value
物理性能 Physical Performance	密度 Density	ASTM D792	g/cm ³	1.2
	吸水率, 24hrs Absorption Rate, 24hrs	ASTM D570	%	0.35
	透光率 Light Transmission	ASTM 1003	%	89~93
	雾度 Haze	ASTM 1003	%	<1
机械性能 Mechanical Performance	拉伸强度 Tensile Strength	ASTM D882 ISO527	PSI MPa	8800 60
	断裂伸长率 Tensile Elongation at Break	ASTM D882	%	>100
	冲击强度 Impact Strength(0.75mm)	ASTM D3029 ISO 6603-1	ft-lb J	23 31
	撕裂强度 Tear Strength Propagation	ASTM D1922	g/mil	>30
热性能 Thermal Performance	维卡软化点 Vicat Softening Temperature	ASTM D1525	℃	135
	热收缩率 (135℃) Shrinkage at 135℃	ASTM D1204	%	<0.2
电气性能 Electrical Performance	介电强度 Dielectric Strength (0.25mm)	ASTM D149	V/mil	1700
	表面电阻 Surface Resistivity 25℃, 50%RH	ASTM D257	Ω	>1.0×10 ¹⁵
	体积电阻率 Volume Resistivity 25℃, 50%RH	ASTM D257	Ω·cm	>1.0×10 ¹⁶
UL 阻燃等级	薄膜厚度≥0.25 mm Film thickness ≥0.25 mm	UL BULLETIN 94	UL94	V-2
UL Flammability	薄膜厚度<0.25 mm Film thickness <0.25 mm			VTM-2

PRODUCT QUALITY REPORT

To :

Product Name : KE5612GU

Lot No. : 603331H

Date : 2006/3/22

This product was tested according to Shin-Etsu's test method and complies with the product specification of Shin-Etsu.

No	Test Item	Unit	Test Result
1	Appearance		Dark Gray
2	Specific Gravity : (23°C±2)		1.42
3	Plasticity : (3 mins)		308
4	Hardness : Durometer A : (JIS K 6253)		59
5	Tensile Strength	(Mpa)	7.2
6	Elongation at Break	(%)	400
7	Tear Strength : Crescent	(KN/m)	10
8	Linear Shrinkage	(%)	2.9
9	Compression Set : (180°C×22hr)	(%)	23
10	Rebound Resilience	(%)	67
11	Volume Resistivity : Ordinary State	(TΩ·m)	11.8
12	Dielectric Breakdown : Ordinary State	(KV/mm)	25
13	Flammability : UL-94(V-0)		PASS

Cured Condition :

Curing Agent C-3

Parts by Weight 1.3

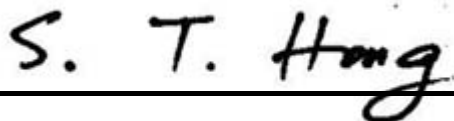
Press Cure 165°C/10min

Post Cure 200°C/4hrs

WE HEREBY CERTIFY THAT WE HAVE DULY TESTED THE GOODS SHOWN ABOVE AND THAT THE TEST DATA COMPLY WITH OUR SPECIFICATION.

SHIN-ETSU SILICONE TAIWAN CO., LTD.
HSIN-CHU PLANT

BY :



QUALITY ASSURANCE DEPARTMENT

SHIN-ETSU SILICONE TAIWAN CO., LTD

11F- D, No. 167 Tun Hua N. Rd. Taipei 10549 Taiwan, R.O.C
TEL : (02)2715-0055 FAX : (02)27150066

25, Kuang Fu S. Rd. Hsin-Chu IND. Park Hsin-Chu Taiwan, R.O.C
TEL : (03)598-3111~3 FAX : (03)598-2204



Laminating Adhesives Data Page

FOD # 0330

3M™ 467MP Roll Laminating Adhesive 468MP Roll Laminating Adhesive

Product Construction

	<u>Adhesive</u>	<u>Liner</u>
467MP	2.0 mils (50 microns) #200MP “Hi-Performance” Acrylic Adhesive	4.0 mils (100 microns) 58# Tan Polycoated Kraft Paper
468MP	5.0 mils (125 microns) #200MP “Hi-Performance” Acrylic Adhesive	4.0 mils (100 microns) 58# Tan Polycoated Kraft Paper

Features

- High performance solvent-free acrylic adhesive for exceptional environmental resistance and enhanced bond strength.
- Superior adhesive smoothness for improved clarity and reduced telegraphing through thin plastic facestocks.
- High cohesive strength for resistance to edge lifting and slippage.
- 2.0 mil 467MP is ideal for application to relatively smooth surfaces.
- 5.0 mil 468MP is ideal for application to a variety of rough or textured surfaces.
- Moisture stable liner resists curling or wrinkling in high humidity.
- 200MP Hi-Performance adhesive is initially repositionable, then builds to high ultimate bond strength.

Applications

- Long term bonding of nameplates and decorative trim to metal and high surface energy plastics in the automotive, appliance and electronic markets.
- Excellent adhesive for bonding metal and plastic nameplates in the aerospace, instrumentation and medical markets.
- Used for lamination to back printed polycarbonate or polyester graphic overlay materials in the automotive, electronics and membrane switch markets.
- Used for lamination of wood veneers and plastic laminates to cabinetry and furniture.
- Used in the assembly of membrane switches, including spacers for circuit separation graphic overlay for switch display and bonding the complete switch to the application surface.

Physical Properties

(Typical values – not for specification use)

ASTM D-3330 (modified)

90 degree peel, 12"/min.

(305 mm/min) 2 mil

aluminum

	Product	20 Min. Dwell	
		Oz./In. N/100 mm	
- Metal (Stainless Steel)	467MP	44	48
	468MP	59	64
- High Surface Energy Plastic (ABS)	467MP	40	44
	468MP	52	57

3M Test (90 degree peel,

12"/min. 305 mm/min.)

2 mil aluminum to

various surfaces

	Product	72 Hr. Dwell		Ultimate Bond	
		Oz./In. N/100 mm		Oz./In. N/100 mm	
- Metal (Stainless Steel)	467MP	82	90	113	124
	468MP	109	119	178	194
- High Surface Energy Plastic (ABS)	467MP	47	51	43	47
	468MP	61	67	58	63
- Low Surface Energy Plastic (Polypropylene)	Not Recommended				

Environmental Performance

The properties defined are based on the attachment of impervious faceplate materials (such as aluminum) to an aluminum test surface.

Bond Build-up:	The bond strength of #200MP "Hi-Performance" Acrylic Adhesive increases as a function of time and temperature.
Humidity Resistance:	High humidity has a minimal effect on adhesive performance. Bond strengths are generally higher after exposure for 7 days at 90 degrees F (32 degrees C) and 90% relative humidity.
U.V. Resistance:	When properly applied, nameplates and decorative trim parts are not adversely affected by outdoor exposure.
Water Resistance:	Immersion in water has no appreciable effect on the bond strength. After 100 hours in room temperature water the bond actually shows an increase in strength.
Temperature Cycling Resistance:	Bond strength generally increases after cycling four times through: 4 hours at 158 degrees F (70 degrees C) 4 hours at -20 degrees F (-29 degrees C) 16 hours at room temperature
Chemical Resistance:	When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including gasoline, oil, "Freon" TF, sodium chloride solution, mild acids and alkalis.
Low Service Temp:	-40 degrees F (-40 degrees C).
Heat Resistance:	The #200MP "Hi-Performance" adhesive is usable for short periods (minutes, hours) at temperatures up to 400 degrees F (204 degrees C) and for intermittent longer periods of time (days, weeks) up to 300 degrees F (149 degrees C).
Shelf Life:	Product retains its performance and properties for two years from date of manufacture if properly stored at room temperature conditions of 72 degrees F (22 degrees C) and 50% R.H. Storage in plastic bag is recommended.

Processing

Die-cutting:	Excellent die-cuttability. For easier processing lubricate dies with Laminoleum vanishing oil available from Metal Lubricants (708-333-8900).
Roll Laminating:	Excellent processability. A combination of metal and rubber rollers with moderate pressure is recommended.

Special Considerations/Application Tips

For maximum bond strength the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Consult solvent manufacturer's Material Safety Data Sheet for proper handling and storage instructions.

Bond strength can also be improved with firm application pressure and moderate heat causing the adhesive to develop intimate contact with the bonding surface.

Ideal adhesive application temperature range is 70 degrees F to 100 degrees F (21 degrees C to 38 degrees C). Application is not recommended if surface temperature is below 50 degrees F (10 degrees C) because the adhesive becomes too firm to adhere readily. Once properly applied, low temperature holding is satisfactory. For more specific information contact our Customer Service and Sales Support "hot line" at 1-800-223-7427.

2/15/96

Terms and Conditions of Sale for products sold by 3M Identification and Converter Systems Division can be found in the ICSD Price Book and in other appropriate schedules.

Technical Data: All physical properties, statements, and recommendations are either based on tests we believe to be reliable or our experience, but they are not guaranteed. 3M recommends each user determine the suitability of the products for the intended use.

Warranty and Limited Remedy: THE FOLLOWING WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING, A CUSTOM OR USAGE OF TRADE: 3M warrants its product will be free from all defects.

If a product is proved to be defective, then the exclusive remedy 3M's and seller's sole obligation shall be, at 3M's option, to replace the quantity of the product which is proved to be defective or to refund the purchase price.

Limitation of Liability: 3M and seller shall not be liable for direct, indirect, special, incidental or consequential damages based breach of warranty, breach of contract, negligence, strict liability or any other legal theory.

The foregoing Warranty and Limited Remedy and Limitation of Liability may be changed only by a written agreement signed by authorized officers of 3M and seller.

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Identification and Converter Systems Division

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安全技术说明书 根据 GB/T 16483-2008

第 1 页 共 5 页

LOCTITE TCF 4000PXF 4.45X0.39IN 又名 PSX 8Mi 4.45X0.39

安全技术说明书编号: 256810

V001.5

修订: 11.01.2016

发布日期: 26.09.2017

第一部分 化学品及企业标识

化学品中文名称: LOCTITE TCF 4000PXF 4.45X0.39IN 又名 PSX 8Mi 4.45X0.39

推荐用途: 相变界面导热材料(PCTIM)

企业信息:

汉高(中国)投资有限公司
张衡路928号
201203 中国上海市浦东新区

中国

电话: +86-21-2891 8000
传真: +86-21-2891 5137

生效日期: 11.01.2016

应急信息: 应急电话: +86 532 8388 9090 (24小时)。

第二部分 危险性概述

物质或混合物的分类根据 GB 13690-2009 (化学品分类和危险性公示通则):

根据 GB 13690-2009 (化学品分类和危险性公示通则) 本品不被分类为危险化学品。

标签要素根据 GB 15258-2009 (化学品安全标签编写规定):

根据 GB 13690-2009 (化学品分类和危险性公示通则) 本品不被分类为危险化学品。

第三部分 成分/组成信息

成分信息: 混合物

根据 GB 13690-2009 公布的有害物质:

有害物质成分 CAS-No.	含量	GHS 分类
铝 7429-90-5	60- 100 %	发火固体 1 H250 遇水放出易燃气体的化学物质和混合物 2 H261

只有那些根据 GB13690-2009 分类为有害的物质才被列入该表格。关于危险性说明（H 词组）代号的全文请参考第 16 部分“其他信息”。

第四部分 急救措施

- 皮肤接触:** 立即用水和肥皂彻底清洗皮肤。
如果刺激反应持续，就医。
- 眼睛接触:** 用大量水冲洗眼睛至少5分钟，如果刺激反应持续，就医。
- 吸入:** 移至新鲜空气处。如果症状持续，就医。
- 食入:** 禁止催吐。
寻求医生帮助。

第五部分 消防措施

- 有害燃烧产物:** 热分解能导致释放出刺激性的气体和蒸气。
高温可能产生重金属粉尘，烟气或蒸气。
- 灭火剂:** 水、二氧化碳、泡沫、干粉
- 灭火方法:** 万一着火，用雾状水保持容器冷却。
- 灭火注意事项:** 配备自给式呼吸器设备，穿全身防护服，如消防战斗服。

第六部分 泄漏应急处理

- 应急处理:** 避免接触皮肤和眼睛。
不得使产品排入下水道。
- 消除方法:** 刮净泄漏材料，存于密闭容器待进一步处置。
废弃物的处置参照第13部分。

第七部分 操作处置与储存

- 操作注意事项:** 仅在通风良好的场所使用。
避免与皮肤和眼睛接触。
处理完毕，休息之前须立即洗手。
小心谨慎的打开并操作处置容器。
参见第8部分的建议。
- 储存注意事项:** 贮存于原装容器中，放在阴凉的场所。
- 存储/运输时的控制温度:** 保存于阴凉、通风良好的场所，远离热源、火花和明火。容器不用时保持密闭。

第八部分 接触控制/个体防护

有害物成分	国家标准 GBZ 2.1-2007	ACGIH	NIOSH	OSHA
铝	3 mg/m ³ TWA	1 mg/m ³ TWA		无

工程控制：根据良好的工业卫生和安全操作规程进行操作处置。
确保足够的通风。

呼吸系统防护：如通风条件不良，配备合适的呼吸设备。

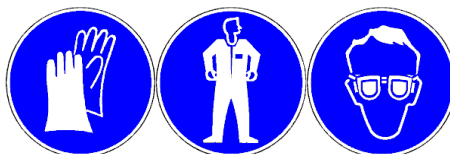
眼睛防护：戴防护眼镜。

身体防护：穿戴防渗透手套和防护服以防止皮肤接触。

手防护：推荐使用腈类化学防护手套。
请注意化学防护手套的实际使用寿命可能由于许多因素影响的结果而缩短。

其他防护：个人防护设备的选用必需至少遵守下列法律和标准，《中华人民共和国职业病防治法》（2001 年 10 月 27 日第九届全国人民代表大会常务委员会第二十四次会议通过），《个体防护设备选用规范》（GB/T 11651-2008）。

推荐使用个人防护设备的象形图：



第九部分 理化特性

性状：	固体	外观：	金属的 固体。
pH 值：	无资料。	熔点（℃）：	51 ° C (123.8 ° F)
沸点（℃）：	无资料。	相对密度（水=1）：	2.04 g/cm ³
闪点（℃）：	> 200 ° C (> 392 ° F)	引燃温度（℃）：	无资料。
水中溶解度	无资料。	粘度：	无资料。

第十部分 稳定性和反应活性

稳定性：	在正常贮存和使用条件下稳定。
避免接触的条件：	在推荐贮存条件下稳定。
禁配物：	强氧化剂。
分解产物：	热分解能导致刺激性气体及蒸气的释放。
聚合危害：	正常操作条件下不会发生。

第十一部分 毒理学资料

毒理信息：
无实验室动物测试数据。

其它信息：
无资料。

毒理数据：
无资料。

第十二部分 生态学资料

生态信息：
禁止排入下水道、地表水、地下水。

生态毒性：
无资料。

其他危害效应：
无资料。

毒性：

有害物成分 CAS-No.	数值类型	值	急性毒性研究	接触时间	生物种类	测试方法
铝 7429-90-5	NOEC	> 100 mg/l	鱼类	96 h	赤眼鳟	世界经济合作与发展组织 准则 203 （鱼类, 急性毒性试验）

第十三部分 废弃处置

产品处置：根据当地及国家法规进行废弃处置。

污染包装处置：作为废物处置。

第十四部分 运输信息

基本信息：
非危险品 参照 RID, ADR, ADN, IMDG, IATA-DGR.

运输注意事项：交通运输需组照当地或者国家法规。确保容器不泄漏，坍塌，或在运输时被损坏。

第十五部分 法规信息

下列法律法规对化学品的安全使用、储存、运输、装卸、分类和标志等方面均作了相应的规定：
《中华人民共和国安全生产法》（2002 年 6 月 29 日第九届全国人大常委会第二十八次会议通过，2014 年 8 月 31 日第十二届全国人民代表大会常务委员会第十次会议修订通过）；
《中华人民共和国职业病防治法》（2001 年 10 月 27 日第九届全国人大常委会第二十四次会议通过，2011 年 12 月 31 日第十一届全国人民代表大会常务委员会第二十四次会议修订通过）；
《中华人民共和国环境保护法》（1989 年 12 月 26 日第七届全国人大常委会第十一次会议通过，2014 年 4 月 24 日中华人民共和国第十二届全国人民代表大会常务委员会第八次会议修订通过）；
《危险化学品安全管理条例》（2011 年 2 月 16 日国务院第 144 次常务会议通过）；
《安全生产许可证条例》（2014 年 7 月 29 日国务院第 54 次常务会议通过）。

中国现有化学物质名录：所有成分已经列入《中国现有化学物质名录》，或者从《中国现有化学物质名录》中豁免。

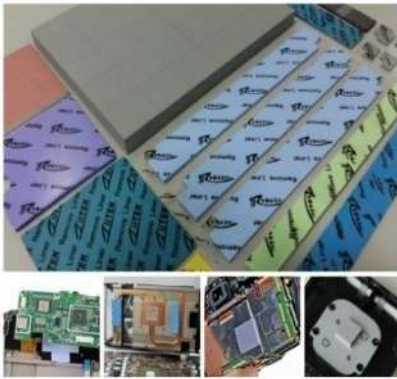
第十六部分 其他信息

填表时间：26.09.2017
填表部门：Lisa Zhang，
产品安全与法规事务高级专员。如需安全与法规信息，请联系：产品安全与法规事务部，中国上海，+86-21-2891 5060。

免责声明：本信息的公开是基于我们目前的知识水平及产品发布时的有关资料。仅从安全要求的角度描述产品，不担保任何其他特性。
本文中所含的各种数据仅供参考，并不被认为是可靠的。对于任何人采取汉高公司无法控制的方法得到的结果，汉高公司恕不负责。自行决定把本品用在本文中提及的生产方法上，及采取本文中提及的措施来防止产品在贮存和使用过程中可能发生的损失和人身伤害都是用户自己的责任。鉴于此，汉高公司明确声明对所有因销售汉高品或者特定场合下使用汉高产品而出现的所有问题，包括针对某一特殊用途的可商品化和适用性的问题，均不承担责任。汉高公司明确声明对任何必然的或者意外的损失包括利润方面的损失都不承担责任。

其 他：第三部分词组代号解释如下：

H250 暴露在空气中会自燃。
H261 遇水放出易燃气体。



TIF™100-05S Series thermally conductive interface materials are applied to fill the air gaps between the heating elements and the heat dissipation fins or the metal base. Their flexibility and elasticity make them suited to coat very uneven surfaces. Heat can transmit to the metal housing or dissipation plate from the heating elements or even the entire PCB, which effectly enhances the efficiency and life-time of the heat-generating electronic components.

Features

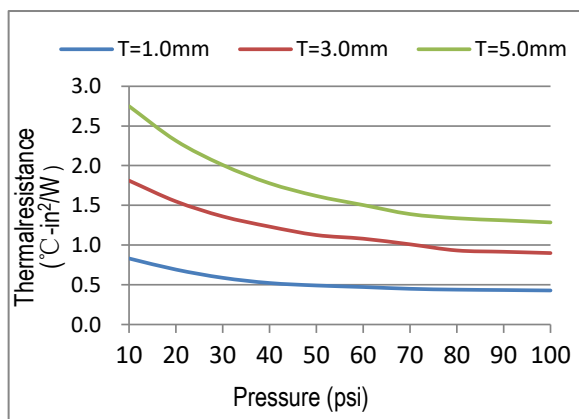
- » Good thermal conductivity: **1.5 W/mK**
- » Naturally tacky needing no further adhesive coating
- » Soft and Compressible for low stress applications
- » Available in varies thickness

Application

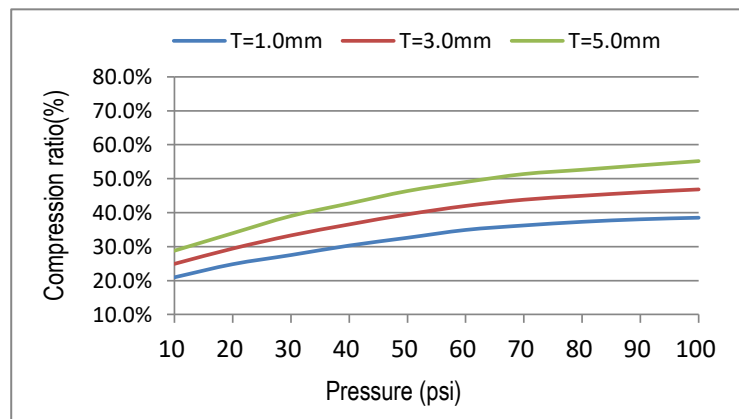
- » Cooling components to the chassis of frame
- » Set Top Box
- » Car Battery & Power Supply
- » Charging Pile
- » LED TV/ Lighting
- » Graphics Card Thermal Module

Typical Properties of TIF™100-05S Series		
Color	Blue	Visual
Construction	Ceramic filled silicone elastomer	*****
Thickness range	0.020"(0.5mm)~0.200" (5.0mm)	ASTM D374
Hardness	45 Shore 00	ASTM 2240
Specific Gravity	2.3 g/cc	ASTM D297
Operating Temp	-40 ~160 °C	*****
Dielectric Breakdown Voltage	>5500 VAC	ASTM D149
Dielectric Constant@1MHz	4.5 MHz	ASTM D150
Volume Resistivity	1.0×10^{12} Ohm-cm	ASTM D257
Thermal Conductivity	1.5 W/mK	ASTM D5470
	1.5 W/mK	GB-T32064
Outgassing (TML)	0.35%	ASTM E595
Flame Rating	94 -V0	UL E331100

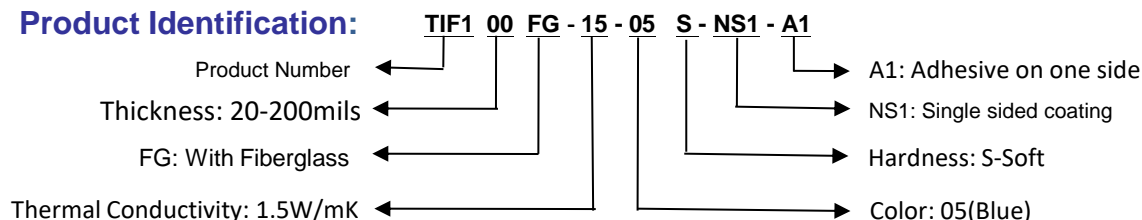
psi. vs. Thermal Resistance



psi. vs. Compression Ratio



Product Identification:



Application Technology Download
Thermal Conductive Interface Materials



<http://www.ziitek.com>

Product Specification

Product Thicknesses: 0.020-inch to 0.200-inch (0.5mm to 5.0mm) **Product Sizes:** 8" x 16" (203mm x 406mm)

Individual die cut shapes and custom thickness can be supplied. Please contact us for confirming

Thermally Conductive Materials

Heat Generating Materials

Thermally Conductive Plastics

Foaming Silica Gel

Die-Cutting Products

Canada:

Tel: +001-604-2998559

E-mail: sales@thermazig.com

China:

Tel: +86-769-38801208

E-mail: frances@ziitek.com.tw

Taiwan:

Tel: +886-2-22771007

E-mail: frances@ziitek.com.tw

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein.

**1. Identification Of The Substance / Preparation And Company.**

Product Information: TIF100-05S Series Thermally Conductive Silicone Pads

Product Number: TIF100-05S Product Series

Manufacturer/Supplier: Ziitek Electronic Materials & Technology Ltd.

Address: Building B8, Industry District II, Xicheng, Hengli Township, Dongguan City, Guangdong Province

TEL: +86-0769-38801208

Fax: +86-0769-83791290

Emergency Phone: Tel: +86-0769-38801208

2. Composition/Information On Ingredients:

Components Name	Synonyms	Gravity (%)	Percentage for Chemical Ingredient (%)	Chemical Abstracts Number(CAS No)
Silicone	Silicone	5%~25%	---	63148-62-9
Alumina	Alumina	60%~75%	---	1344-28-1
Platinum catalyst	Platinum catalyst	0.1%~0.5%	---	68478-92-2
Other		0.5%~2%	---	Trade secret

Mixture**Chemical Characteristics:**

Hazardous Components Name	Concentration/Percentage	Hazard Symbols
Down is blank		

3. Hazard Identification:

Major Hazard Effect	Hazard warnings for Health: NO
	Hazard warnings for Environment: NO
	Physical and Chemical Dangerous: NO
	Special Harm: NO
Major State	NO
Hazard classification	NO

4. First Aid Measures:

Skin Contact	NO
Eye Contact	NO
Ingestion	Call a physician immediately

5. Fire Fighting Measure:

Suitable extinguishing media: dry chemical

Special exposure hazards: NO

Special Extinguishing Procedure:

Remove away from the heat, extinguish by water or other media

Special protection equipment: NO

6. Accidental Release Measures:

Personal protection: The product exists solid state, no leakage will happen.

Environment protection: NO

Methods for Cleaning up: Wipe by alcohol

7. Handling and Storage:

Handling: No need

Storage: The product should be kept away from direct sunlight and stored at room temperature (recommended temperature: 10℃ -40℃, humidity: 30%-90%) with a shelf life of 12 months.

**8. Exposure Control/Personal Protection:**

Engineering Control: Don't expose under sunshine directly

Hygienic procedures: N/A

Personal Protective Equipment: No need

9. Physical and Chemical Properties / Characteristics:

Appearance: Solid	Form: In piece
Color: Blue	Odor: Odorless
PH Value: 5~7	Boiling Point/Boiling Range: >700℃
Decomposition temperature: N/A	Flash Point: N/A
Natural Temperature: N/A	Test Method: N/A
Spontaneous Temperature: N/A	Explosion Limits: N/A
Vapor Pressure: N/A	Vapor Density: N/A
Specific Gravity: 2.3 g/cc	Solubility in water: N/A

10. Stability and Reactivity:

Stability: Stable

Special Conditions of Hazardous Reaction: N/A

Some rusty metal: N/A

Conditions to Avoid: N/A

Incompatibility: Strong alkalis and strong acids

11. Toxicological information:

Acute toxicity: No

Local Effects: No

Sensitive: No

Chronic toxicity: No

Especial effect: No

12. Ecological Information:

Possibility of Environmental Impact/move: No harmful effect to environment

13. Disposal Information:

Disposal Information: Can be recycled

14. Transport Information:

International Transport Regulation: Container

The United Nations Number(UN-No): No

Internal Transport regulation: Can be packed in box: $\leq 8\text{kg}$ 、 $\leq 22\text{kg}$ 、 $\leq 13\text{kg}$ 、 $\leq 20\text{kg}$

Special Transport Way and Note: Can be delivered as non-dangerous product

15. Regulation Information:

Rules on Workers Health and Safety Facilities.

Regulation of Labeling and Hazard Communication of Dangerous and Harmful Materials.

Traffic Safety Rules.

Standards for the Storage, Cleanup, Handling and disposal of Industrial Waste.

16. Other information:

Legend: This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

Test Report

No.: CANEC23003383101

Date: May 25, 2023

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Client Name: GUANGDONG XINGFA PRECISION MANUFACTURING CO., LTD

Client Address: PLANT 1, NO. 12, ZONE D, SANSHUI INDUSTRIAL PARK, FOSHAN, GUANGDONG
(APPLICANT FOR RESIDENCE)

Sample Name: Aluminum alloy profile

Model No.: 6063-T5

The above sample(s) and information were provided by the client.

SGS Job No.: GZP23-002543

Sample Receiving Date: May 22, 2023

Testing Period: May 22, 2023 ~ May 25, 2023

Test Requested: Select test(s) as requested by the client.

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

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

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass

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

Jessie Li

Jessie-JX Li
Approved Signatory

scan to see the report



94C3009A



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中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	CAN23-0033831-0001.C001	Silvery metal

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A1
Cadmium(Cd)	100	mg/kg	2	ND
Lead(Pb)	1000	mg/kg	2	12
Mercury(Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI)) ▼	-	µg/cm ²	0.10	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND



SGS-CSI Standards Technical Service Co., Ltd.
Guangzhou Branch/SGS-CSI Technical Laboratory

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Test Item(s)	Limit	Unit(s)	MDL	A1
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) ▼ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm².
The sample coating is considered to contain Cr(VI)
b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm²).
The coating is considered a non-Cr(VI) 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.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.



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Guangzhou Branch Technical Laboratory

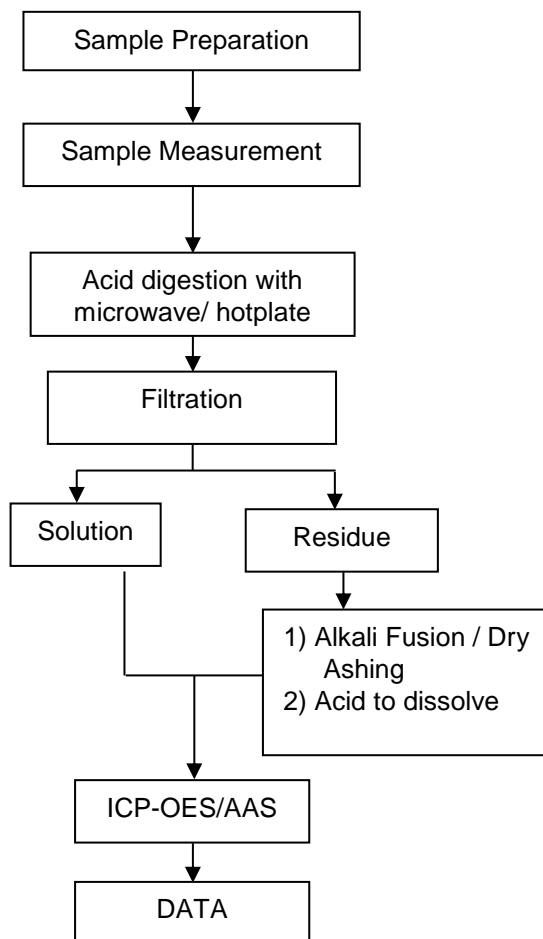
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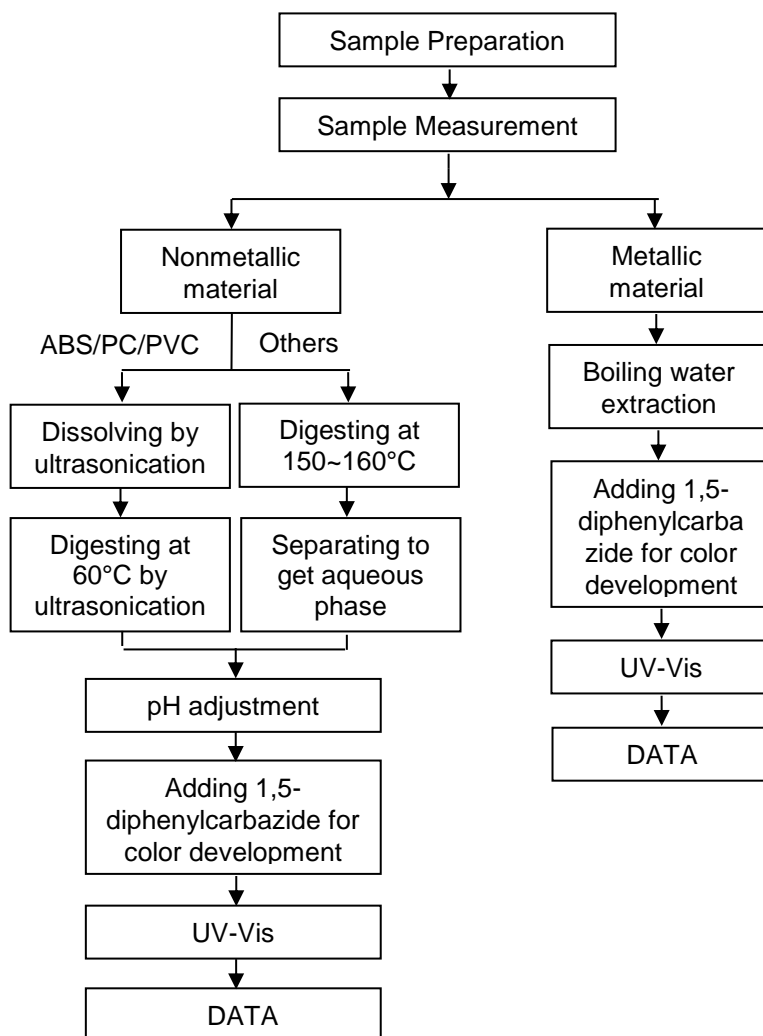
Elements Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.

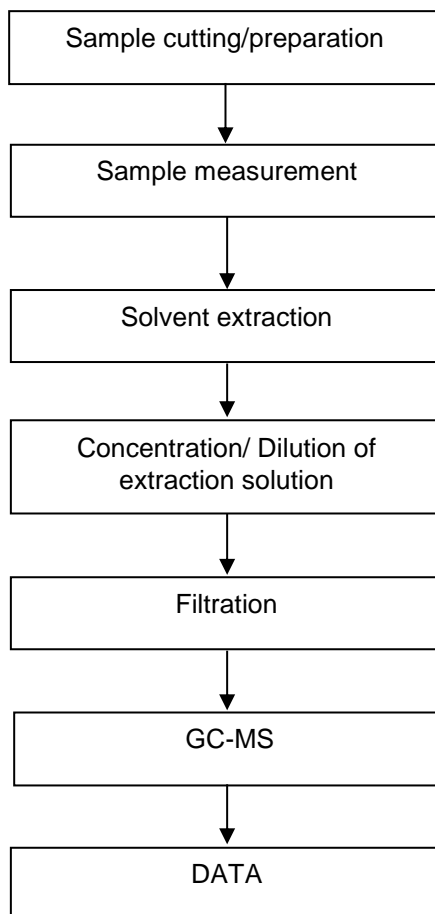


ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



PBBs/PBDEs Testing Flow Chart



Test Report

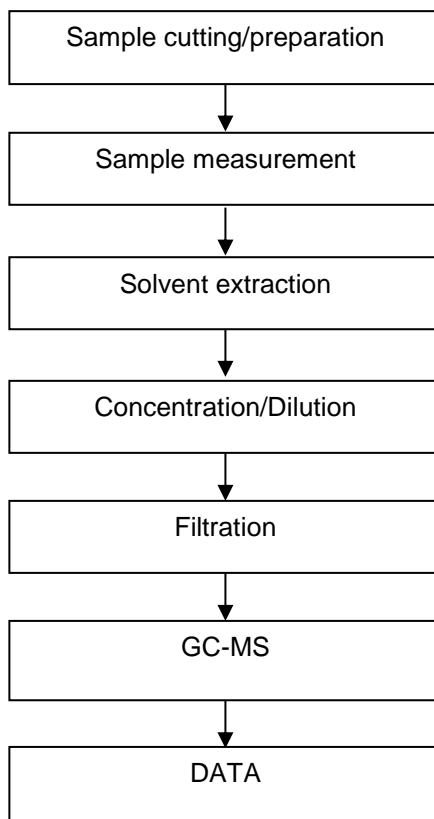
ATTACHMENTS

No.: CANEC23003383101

Date: May 25, 2023

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Phthalates Testing Flow Chart



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Guangzhou Branch Technical Services Laboratory

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Test Report

No.: CANEC23003383101

Date: May 25, 2023

Page 8 of 8

Sample Photo:



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Test Report

No.: SZXEC23000461003

Date: Apr 07, 2023

Page 1 of 8

Client Name: DONGGUAN TUOXIN HARDWARE PRODUCTS CO.LTD.

Client Address: 广东省东莞市谢岗镇谢岗振兴大道 251 号 105 室

Sample Name: Aluminum radiator

Model No.: Anode black

The above sample(s) and information were provided by the client.

SGS Job No.: RP23-007676

Sample Receiving Date: Apr 03, 2023

Testing Period: Apr 03, 2023 ~ Apr 07, 2023

Test Requested: Select test(s) as requested by the client.

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

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

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass

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

Ford

Ford Shi
Approved Signatory

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Test Report

No.: SZXEC23000461003

Date: Apr 07, 2023

Page 2 of 8

Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A2	SZX23-0004610-0001.C002	Black plated metal

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A2
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)) ▼	-	µg/cm²	0.10	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND



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Test Report

No.: SZXEC23000461003

Date: Apr 07, 2023

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Test Item(s)	Limit	Unit(s)	MDL	A2
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) ▼ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm².
The sample coating is considered to contain Cr(VI)
b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm²).
The coating is considered a non-Cr(VI) 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.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



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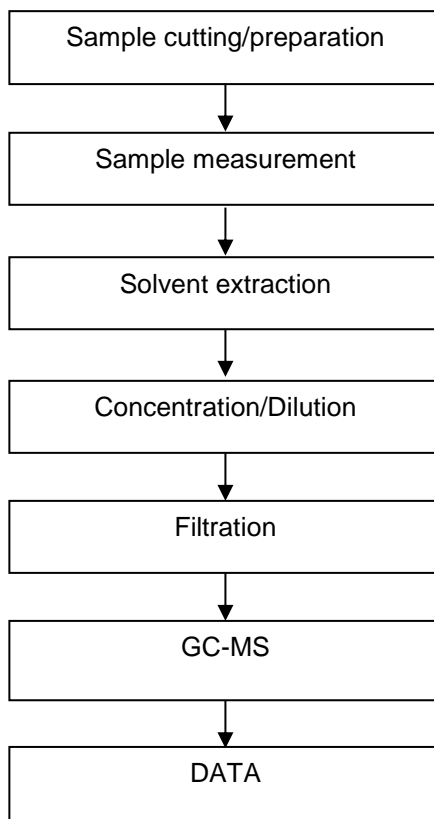
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Date: Apr 07, 2023

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Phthalates Testing Flow Chart



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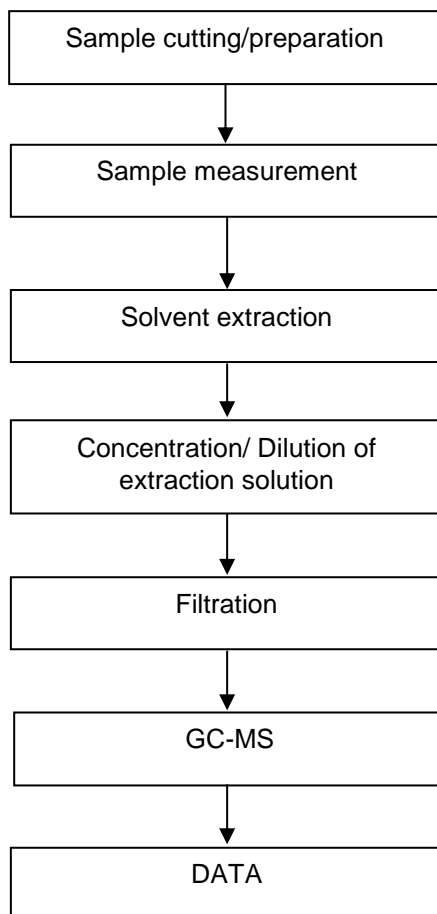
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PBBs/PBDEs Testing Flow Chart



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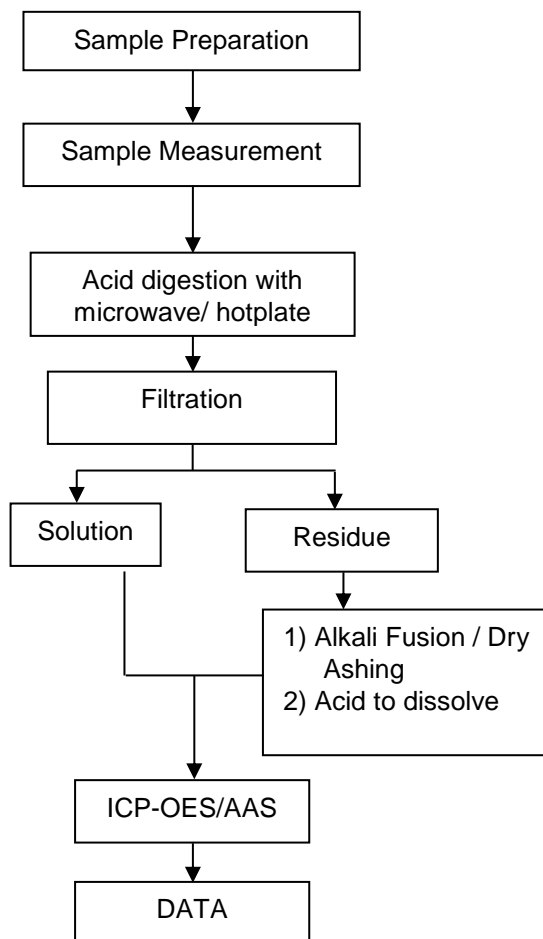
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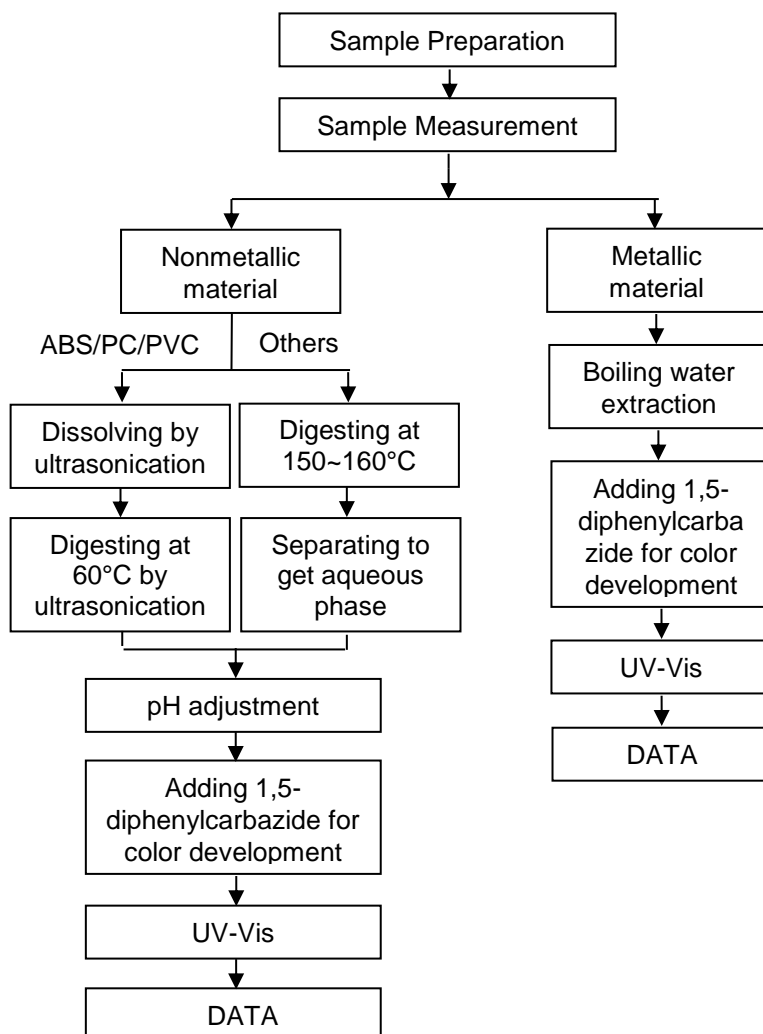
Elements Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



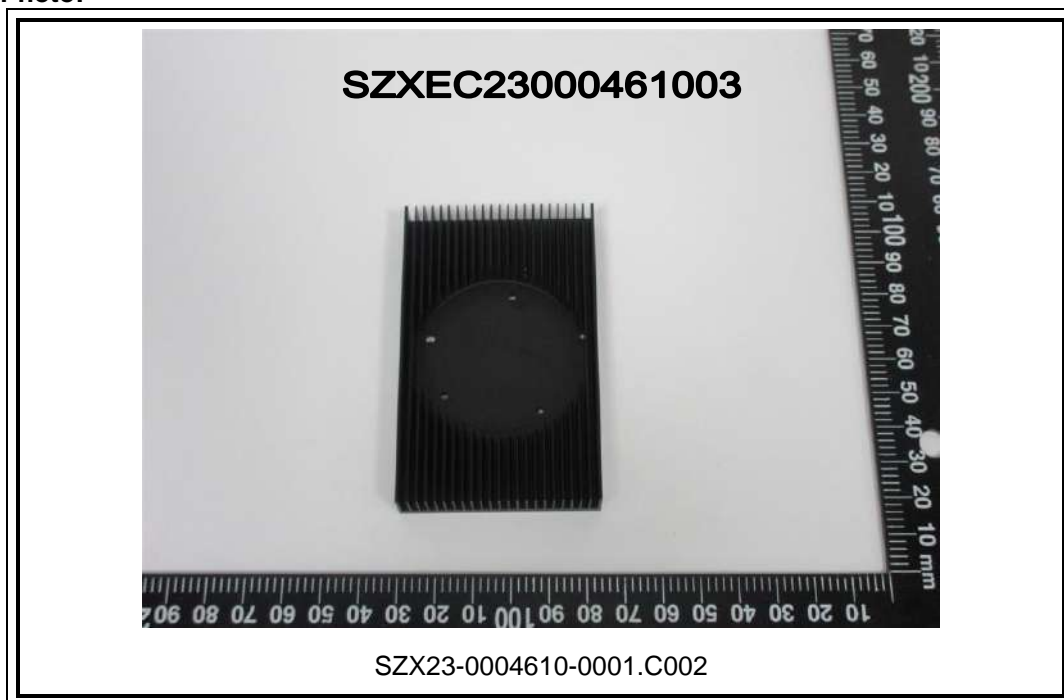
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Date: Apr 07, 2023

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Sample Photo:



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Test Report

No.: CANPC23000173213

Date: Feb 15, 2023

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Client Name: DONGGUAN XINYI JIN SHU ZHI PIN CO.,LTD

Client Address: ROOM 101,BUILDING 2,NO.5,JINXING SECOND STREET,QINGXITOWN,DONGGUAN CITY,GUANGDONG PROVINCE

Sample Name: 1018

The above sample(s) and information were provided by the client.

SGS Job No.: GZPC2302000418

Sample Receiving Date: Feb 10, 2023

Testing Period: Feb 10, 2023 - Feb 15, 2023

Test Requested: Select test(s) as requested by the client.

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

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

	Test Requirement	Conclusion
1	EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU-Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass

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

Jany Zhong

Jany Zhong
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CANPC23000173213



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Test Report

No.: CANPC23000173213

Date: Feb 15, 2023

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	007	CAN23-0001732-0001.C007	Silver grey metal

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 and IEC62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	007
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))▼	-	µg/cm ²	0.10	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND



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Test Report

No.: CANPC23000173213

Date: Feb 15, 2023

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Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) ▼ =
 - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm².
The sample coating is considered to contain Cr(VI)
 - b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm²).
The coating is considered a non-Cr(VI) 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.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



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Guangzhou Branch Technical Services Co., Ltd. Chemical Laboratory

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Test Report

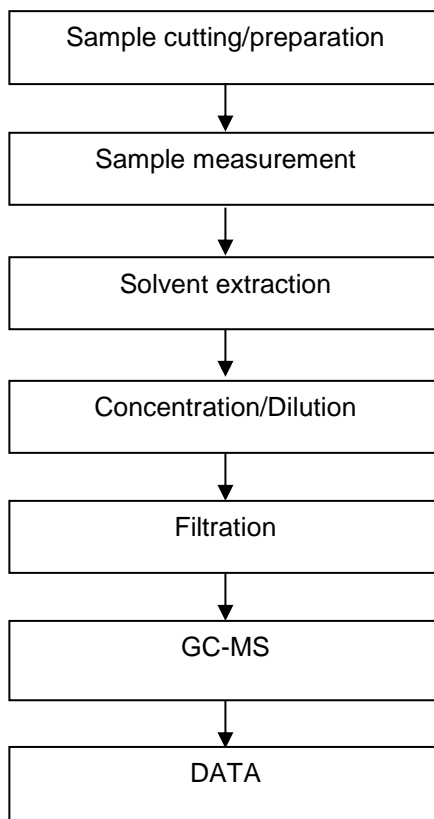
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Phthalates Testing Flow Chart



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Test Report

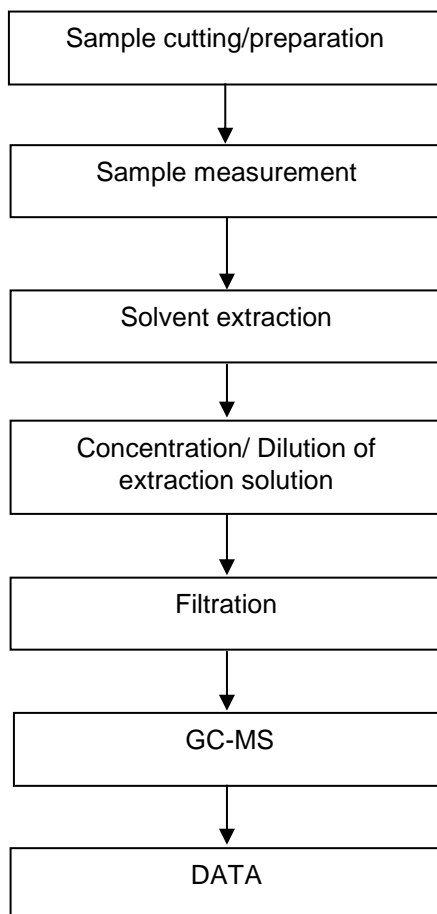
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PBBs/PBDEs Testing Flow Chart



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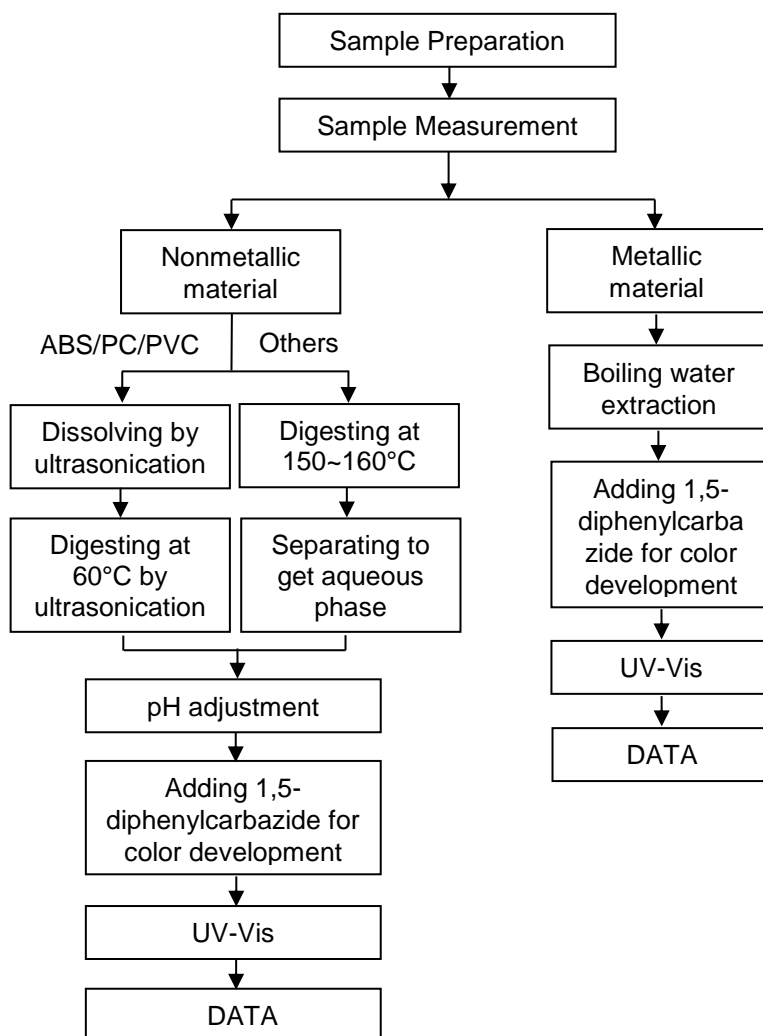
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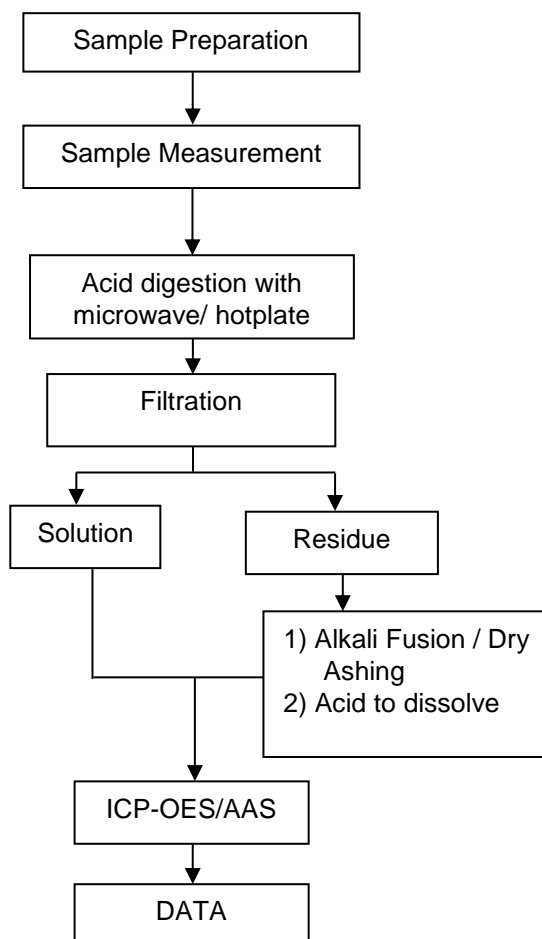
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



Elements (IEC62321) Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



Test Report

No.: CANPC23000173213

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Page 8 of 8

Sample Photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Test Report No. F690101/LF-CTSAYGU23-01316R1

Issued Date : 2023. 01. 12

Page 1 of 8

HONGDUK INDUSTRIAL CO., LTD.
51 Jangheung-ro 39beon-gil, Nam-gu
Pohang-si, Gyeongbuk
Korea



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

SGS File No. : AYGU23-01316R1

Product Name : Piano Wire

Item No./Part No. : N/A

Client Reference Data : SWP-A,B/PW-1,2/EN10270-1 DM,DH/SWRS82A

Received Date : 2023. 01. 04

Test Period : 2023. 01. 04 to 2023. 01. 12

Report Comments : By the applicant's request, item No.s/part No.s & client reference information are stated/added on report.

Supersede/Referral : The test report supersedes previous report number, "F690101/LF-CTSAYGU23-01316" issued by SGS Korea Co., Ltd.

Test Results : For further details, please refer to following page(s)

SGS Korea Co., Ltd.
/ Busan Laboratory



Taehee Kang / Technical Manager

The test results of this test report are only limited to samples and sample names provided by the client and do not guarantee the quality of all products of the client. This test report shall not be used for public relation, advertisement, lawsuit and shall not be used by excerpts from it. This test report can be checked through the <http://rohs.kr.sgs.com/checkreport/main>. This test report is not related to KS Q ISO/IEC 17025 and Korea Laboratory Accreditation Scheme.

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MQP-708-001-F12 (01)

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Test Report No. F690101/LF-CTSAYGU23-01316R1

Issued Date : 2023. 01. 12

Page 2 of 8

Sample No. : AYGU23-01316R1.001
Sample Description : Piano Wire
Item No./Part No. : N/A
Materials : Steel

Heavy Metals

Test Items	Unit	Test Method	MDL	Results
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5 : 2013, by ICP-OES	0.5	N.D.
Lead (Pb)	mg/kg	With reference to IEC 62321-5 : 2013, by ICP-OES	5	N.D.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4 : 2013+A1 : 2017, by ICP-OES	2	N.D.
Hexavalent Chromium (Cr VI) *	µg/cm ²	With reference to IEC 62321-7-1 : 2015, by UV-Vis	0.1	N.D.

Total Metals

Test Items	Unit	Test Method	MDL	Results
Antimony (Sb)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	10	N.D.
Arsenic (As)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	10	N.D.
Barium (Ba)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	5	N.D.
Selenium (Se)	mg/kg	With reference to EPA 3052 : 1996, EPA 6010D : 2018, by ICP-OES	10	N.D.

Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Monobromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Dibromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tribromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tetrabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Pentabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Hexabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Heptabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Octabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Nonabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.

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Test Report No. F690101/LF-CTSAYGU23-01316R1

Issued Date : 2023. 01. 12

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Sample No. : AYGU23-01316R1.001

Sample Description : Piano Wire

Item No./Part No. : N/A

Materials : Steel

Flame Retardants-PBBs/PBDEs

Test Items	Unit	Test Method	MDL	Results
Decabromobiphenyl	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Monobromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Dibromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tribromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Tetrabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Pentabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Hexabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Heptabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Octabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Nonabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.
Decabromodiphenyl ether	mg/kg	With reference to IEC 62321-6 : 2015, by GC-MS	5	N.D.

Phthalates

Test Items	Unit	Test Method	MDL	Results
Di-(2-ethylhexyl) phthalate (DEHP)	mg/kg	With reference to IEC 62321-8 : 2017, by GC-MS	50	N.D.
Di-butyl phthalate (DBP)	mg/kg	With reference to IEC 62321-8 : 2017, by GC-MS	50	N.D.
Benzyl butyl phthalate (BBP)	mg/kg	With reference to IEC 62321-8 : 2017, by GC-MS	50	N.D.
Di-isobutyl phthalate (DIBP)	mg/kg	With reference to IEC 62321-8 : 2017, by GC-MS	50	N.D.

Halogen Contents

Test Items	Unit	Test Method	MDL	Results
Bromine(Br)	mg/kg	With reference to EN 14582 : 2016, by IC	30	N.D.
Chlorine(Cl)	mg/kg	With reference to EN 14582 : 2016, by IC	30	N.D.
Fluorine(F)	mg/kg	With reference to EN 14582 : 2016, by IC	30	N.D.
Iodine(I)	mg/kg	With reference to EN 14582 : 2016, by IC	50	N.D.

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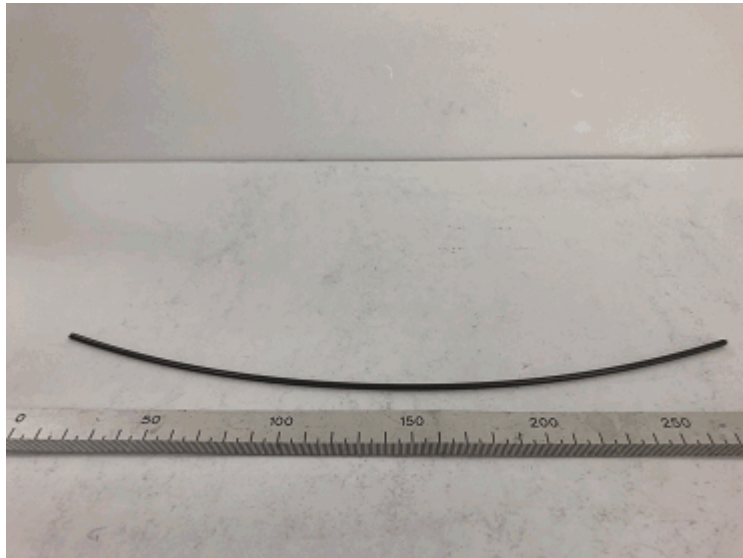
Test Report No. F690101/LF-CTSAYGU23-01316R1

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- NOTE:
- (1) N.D. = Not detected.($<MDL$)
 - (2) mg/kg = ppm
 - (3) $\mu\text{g/kg}$ = ppb
 - (4) MDL = Method Detection Limit
 - (5) - = No regulation
 - (6) Negative = Undetectable / Positive = Detectable
 - (7) ** = Qualitative analysis (No Unit)
 - (8) * = a. The sample is positive for CrVI if the CrVI concentration is greater than $0.13 \mu\text{g/cm}^2$. The sample coating is considered to contain CrVI.
 b. The sample is negative for CrVI if CrVI is n.d. (concentration less than $0.10 \mu\text{g/cm}^2$). The coating is considered a non-CrVI based coating.
 c. The result between $0.10 \mu\text{g/cm}^2$ and $0.13 \mu\text{g/cm}^2$ is considered to be inconclusive - unavoidable coating variations may influence the determination.

Picture of Sample as Received:



AYGU23-01316R1.001

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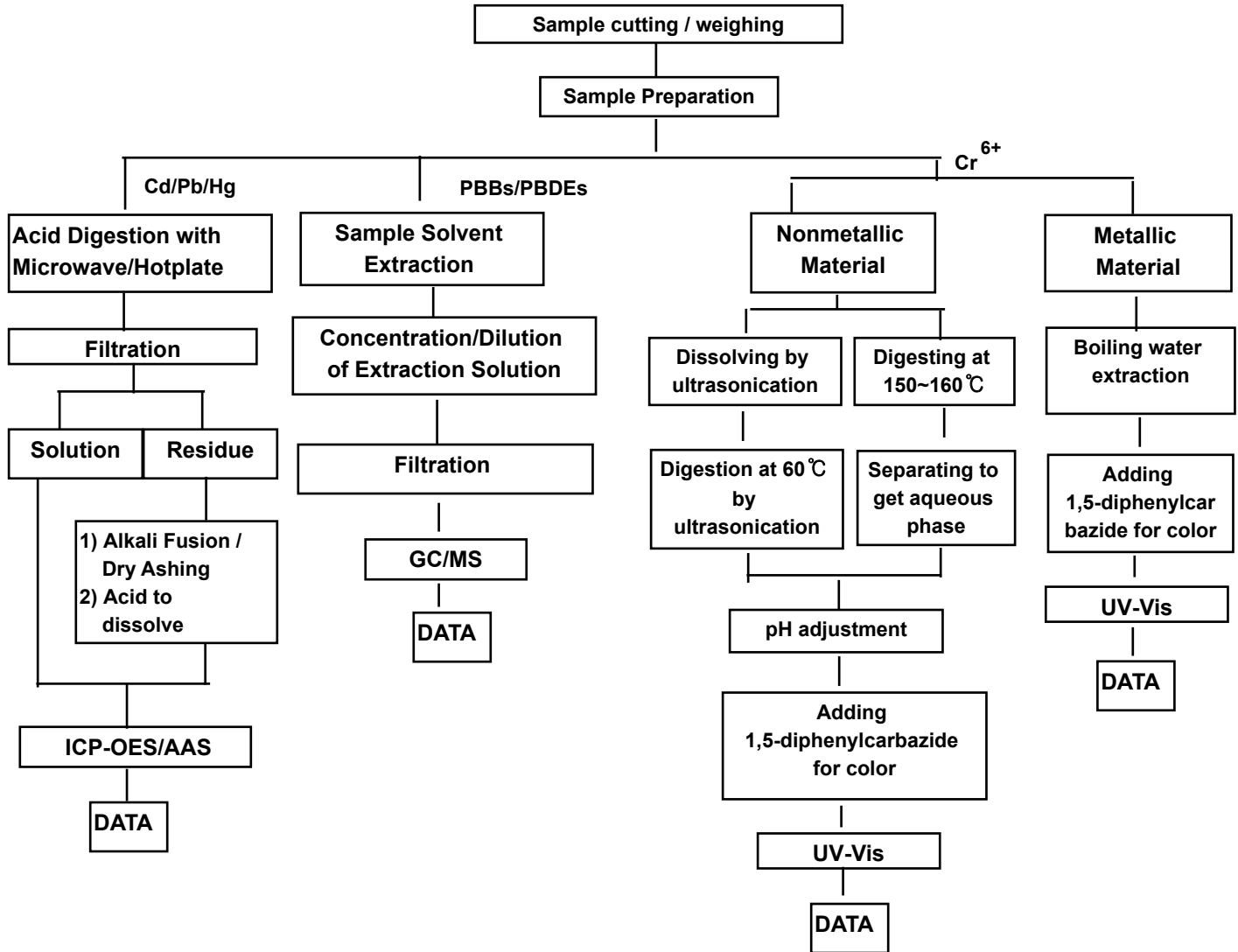
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Testing Flow Chart for RoHS: Cd/Pb/Hg/Cr⁶⁺ /PBBs&PBDEs Testing

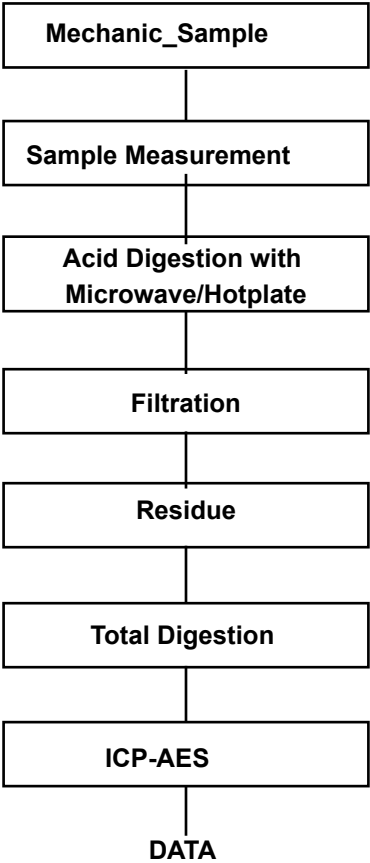


The samples were dissolved totally at the acid digestion step of the above flow chart for Cd,Pb,Hg
Section Chief : Taehee Kang



Flow Chart for Inorganic Elements Testing

Inorganic Elements

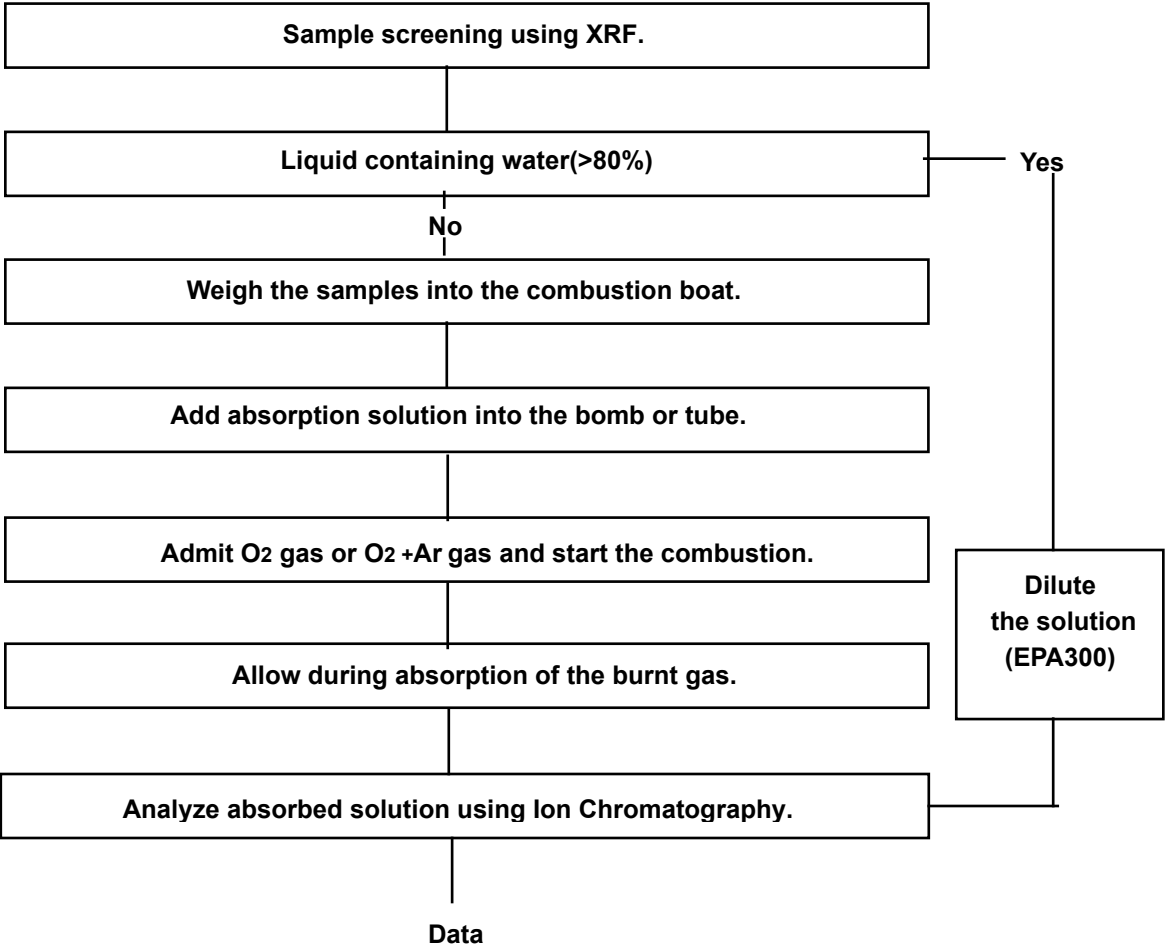


Major Inorganic Heavy Metals	Antimony(Sb) , Beryllium(Be) , Phosphorus(P) , Arsenic(As) etc.
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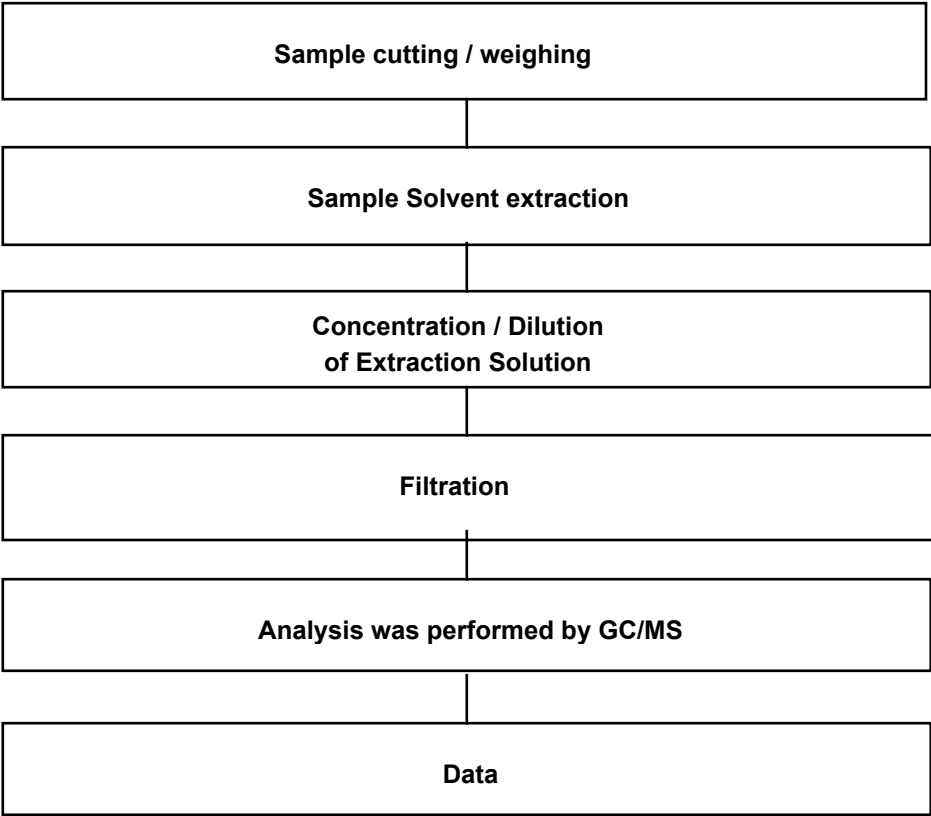
Flow Chart for Halogen Test



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Flow Chart for PhthalateTest



*** End of Report ***

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Test Report

No.: CANEC23000241607

Date: Feb 20, 2023

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Client Name: SHENZHEN SHUNTAI HARDWARE PLATING CO., LTD

Client Address: NO.8 HENGCHANG ROAD, XINSHENG VILLAGE, LONGGANG DISTRICT, SHENZHEN

Sample Name: Environmental Nickel

The above sample(s) and information were provided by the client.

SGS Job No.: CP23-005061

Sample Receiving Date: Feb 15, 2023

Testing Period: Feb 15, 2023 - Feb 20, 2023

Test Requested: Select test(s) as requested by the client.

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

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

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium and Hexavalent chromium	Pass

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

Arsene Ye

Arsene Ye
Approved Signatory

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A4	CAN23-0002416-0001.C004	Silvery plated metal

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium and Hexavalent chromium

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013 and IEC 62321-7-1:2015, analysis was performed by ICP-OES and UV-Vis .

Test Item(s)	Limit	Unit(s)	MDL	A4
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))▼	-	µg/cm ²	0.10	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) ▼ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 µg/cm². The sample coating is considered to contain Cr(VI)
 - b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 µg/cm²). The coating is considered a non-Cr(VI) 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.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.



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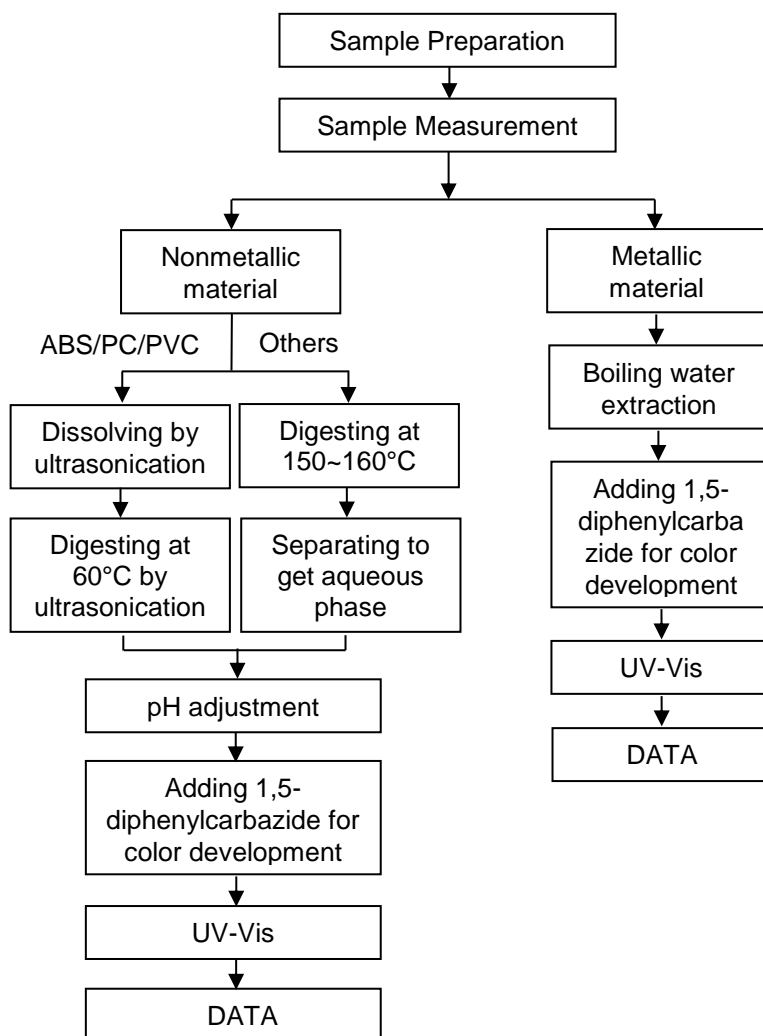
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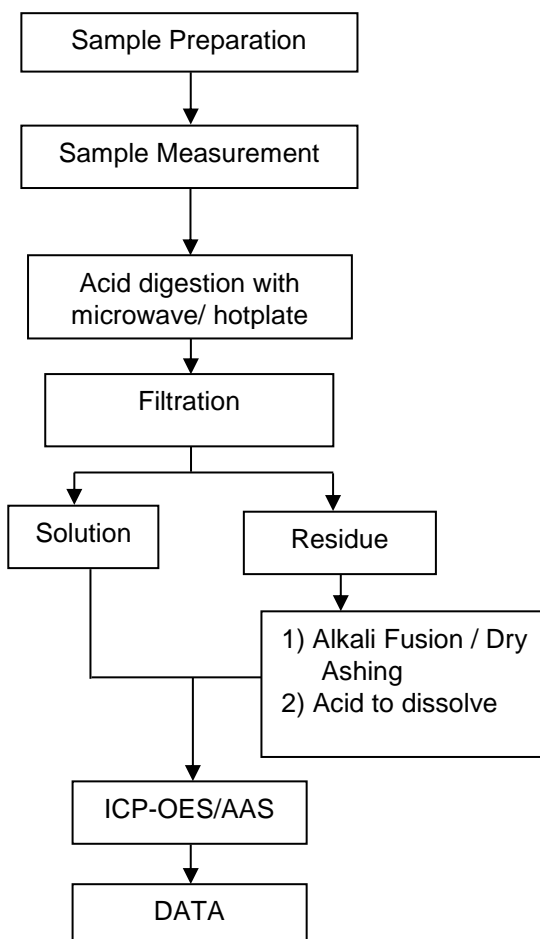
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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



Elements (IEC62321) Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



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Sample Photo:



SGS authenticate the photo on original report only

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Client Name: SICHUAN LONGHUA FILM CO.,LTD.

Client Address: FEIYUN ROAD 363 MIANYANG SICHUAN PROVINCE, P. R. CHINA

Sample Name: See remark

The above sample(s) and information were provided by the client.

SGS Job No.: 10026740

Sample Receiving Date: Mar 10, 2023

Testing Period: Mar 10, 2023 ~ Mar 21, 2023

Test Requested: Select test(s) as requested by the client.

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

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

Test Requirement	Conclusion
Dimethyl fumarate (DMFu)	See Results
Flame Retardants	See Results
Halogen	See Results
Monomers-Bisphenol-A & Phenol	See Results
Phthalates	See Results
Polyvinyl chloride (PVC)	See Results
Tetrabromobisphenol A (TBBP-A)	See Results
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Dibutyl phthalate (DBP), Butyl benzyl phthalate (BBP), Bis(2-ethylhexyl) phthalate (DEHP), and Diisobutyl phthalate (DIBP)	Pass
Element(s)	See Results

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

Jessie Li

Jessie-JX Li
Approved Signatory

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Test Requirement	Conclusion
European Regulation POPs (EU) 2019/1021- Perfluorooctane Sulfonates (PFOS) and its derivatives	See Results
Polycyclic Aromatic Hydrocarbons (PAHs)	See Results

Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	CAN23-0007959-0001.C001	Colorless transparent plastic sheet

Remarks:

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

Dimethyl fumarate (DMFu)

Test Method: Solvent extraction, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Dimethyl Fumarate (DMFu)	624-49-7	mg/kg	0.1	ND

Flame Retardants

Test Method: With reference to US EPA 3550C:2007 and US EPA 8270D:2014, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Hexabromocyclododecane (HBCDD)	134237-50-6 /134237-51-7 /134237-52-8 /25637-99-4 /3194-55-6	mg/kg	5	ND

Halogen

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit(s)	MDL	A1
Fluorine(F)	mg/kg	50	ND
Chlorine(Cl)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

Monomers-Bisphenol-A & Phenol

Test Method: With reference to EN 71-10:2005 followed by analysis with reference to EN 71-11:2005.



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Test Item(s)	CAS No.	Unit(s)	MDL	A1
Bisphenol A	80-05-7	mg/L	0.04	ND

Phthalates

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

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Dibutyl Phthalate(DBP)	84-74-2	%	0.003	ND
Bis-(2-ethylhexyl) Phthalate(DEHP)	117-81-7	%	0.003	ND
Benzyl Butyl Phthalate(BBP)	85-68-7	%	0.003	ND
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.010	ND
Di-n-Octyl Phthalate(DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.010	ND
Dimethyl Phthalate(DMP)	131-11-3	%	0.003	ND
Diethyl Phthalate(DEP)	84-66-2	%	0.003	ND
Dipropyl Phthalate(DPrP)	131-16-8	%	0.003	ND
Diisobutyl Phthalate(DIBP)	84-69-5	%	0.003	ND
Dipentyl Phthalates (DnPP)	131-18-0	%	0.003	ND
Dicyclohexyl Phthalate(DCHP)	84-61-7	%	0.003	ND
Diphenyl Phthalate(DPhP)	84-62-8	%	0.003	ND
Dibenzyl Phthalate(DBzP)	523-31-9	%	0.003	ND
Dinonyl Phthalate(DNP)	84-76-4	%	0.003	ND
Diisooctyl Phthalate(DIOP)	27554-26-3	%	0.003	ND

Polyvinyl chloride (PVC)

Test Method: SGS In-house method (SGS-CCL-TOP-066-01), analysis was performed by FTIR/HATR.

Test Item(s)	CAS No.	A1
Polyvinyl chloride (PVC)	9002-86-2	Negative

Notes:

(1) Negative=The sample does not contain Polyvinylchloride (PVC),Positive=The sample contains Polyvinylchloride (PVC)

Tetrabromobisphenol A (TBBP-A)

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

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Tetrabromobisphenol A(TBBP-A)	79-94-7	mg/kg	5	ND

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Dibutyl phthalate (DBP), Butyl benzyl phthalate (BBP), Bis(2-ethylhexyl) phthalate (DEHP), and Diisobutyl phthalate (DIBP)



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Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A1
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	8	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (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.

Element(s)

Test Method: SGS In-house method (GZTC CHEM-TOP-004-01, with reference to EPA 3052:1996), analysis was performed by ICP-OES.



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Test Item(s)	Unit(s)	MDL	A1
Beryllium(Be)	mg/kg	5	ND
Antimony(Sb)	mg/kg	10	ND
Antimony Trioxide(Sb ₂ O ₃) ◆	mg/kg	12	ND

Notes:

Calculated concentration of Sb₂O₃ is based on the identified Sb.

European Regulation POPs (EU) 2019/1021- Perfluorooctane Sulfonates (PFOS) and its derivatives

Test Method: With reference to CEN/TS 15968:2010, analysis was performed by HPLC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Perfluorooctane sulfonates (PFOS) and its derivatives	-	µg/m ²	-	ND
Perfluorooctane sulfonates (PFOS) and its salts*	-	µg/m ²	1.0	ND
N-ethylperfluoro-1-octanesulfonamide (N-EtFOA)	4151-50-2	µg/m ²	1.0	ND
N-methylperfluoro-1-octanesulfonamide (N-MeFOA)	31506-32-8	µg/m ²	1.0	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol N-(EtFOSE)	1691-99-2	µg/m ²	1.0	ND
2-(N-methylperfluoro-1-octanesulfonamido)- ethanol (N-MeFOSE)	24448-09-7	µg/m ²	1.0	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	µg/m ²	1.0	ND

Notes:

(1) Perfluorooctane sulfonates (PFOS) and its salts * including PFOS (CAS No. 1763-23-1), POSF(CAS No. 307-35-7), PFOS-K (CAS No. 2795-39-3), PFOS-NH₄ (CAS No. 29081-56-9), PFOS-N(C₁₀H₂₁)₂(CH₃)₂ (CAS No. 251099-16-8), PFOS-NH₂(C₂H₄OH)₂ (CAS No. 70225-14-8), PFOS-Li (CAS No. 29457-72-5), PFOS-N(C₂H₅)₄ (CAS No. 56773-42-3) and PFOS-Na (CAS No. 4021-47-0). The result of PFOS is used to represent PFOS and its salts.

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method: With reference to AfPS GS 2019:01 PAK, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Benzo(a)pyrene(BaP)	50-32-8	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	192-97-2	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	56-55-3	mg/kg	0.1	ND
Benzo(b)Fluoranthene(BbF)	205-99-2	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	205-82-3	mg/kg	0.1	ND
Benzo(k)Fluoranthene(BkF)	207-08-9	mg/kg	0.1	ND
Chrysene(CHR)	218-01-9	mg/kg	0.1	ND
Dibenzo(a,h)Anthracene(DBA)	53-70-3	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	191-24-2	mg/kg	0.1	ND



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Test Report

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Test Item(s)	CAS No.	Unit(s)	MDL	A1
Indeno(1,2,3-c,d)pyrene(IPY)	193-39-5	mg/kg	0.1	ND
Phenanthrene(PHE)	85-01-8	mg/kg	0.1	ND
Pyrene(PYR)	129-00-0	mg/kg	0.1	ND
Anthracene(ANT)	120-12-7	mg/kg	0.1	ND
Fluoranthene(FLT)	206-44-0	mg/kg	0.1	ND
Sum of Phenanthrene(PHE), Pyrene(PYR), Anthracene(ANT), Fluoranthene(FLT)	-	mg/kg	-	ND
Naphthalene(NAP)	91-20-3	mg/kg	0.1	ND
Sum of 15 PAHs	-	mg/kg	-	ND
Material Category	-	-	-	-

Notes:

AfPS (German commission for Product Safety) : PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Materials intended to be placed in the mouth, or materials coming into long-term contact with skin (more than 30s) during the intended use -in toys according to Directive 2009/48/EC or -for the use by children ^{a,b} up to 3 years of age.	Materials not covered by category 1, coming into long-term contact (more than 30s) or short-term repetitive contact ^c with skin during the intended or foreseeable use ^d .		Materials covered neither by category 1 nor by category 2, coming into short-term contact (up to 30s) with skin during the intended or foreseeable use.	
		a. use by children	b. other consumer products	a. use by children	b. other consumer products
Benzo(a)pyrene (BaP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene (BeP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene (BaA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene (BbF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene (BjF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene (BkF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1



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Chrysene (CHR) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene (DBA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene (BPE) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene (IPY) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT), mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene (NAP) mg/kg	< 1	< 2		< 10	
Sum of 15 PAHs	<1	< 5	< 10	< 20	< 50

Notes:

^a A "Child" is legally defined as a person before reaching the age of 14 years.

^b Use by children includes both active and passive contact by children.

^c Definition "short-term repetitive contact" taken from REACH Annex XVII entry 50 amendment (Regulation (EC) No.1272/2013)

^d According to the definition of the German Product Safety Act (ProdSG) (chapter 1 Article 2 No. 28) "foreseeable use" shall mean the use of a product in a manner that the person placing it on the market, has not intended, but which could be reasonably foreseeable.

Remark:

The German committee on Product Safety (AfPS) published a new PAHs document (AfPS GS 2019:01 PAK) on April 10, 2020, which will be binding for the issue of GS mark certificate from July 1, 2020.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



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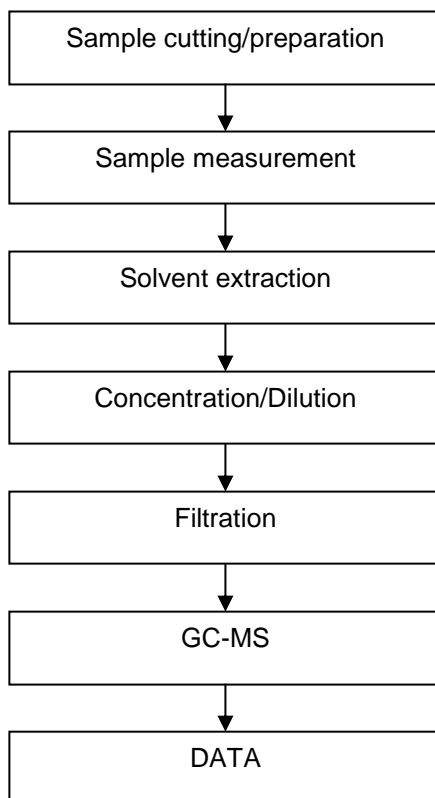
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DMF (Dimethyl fumarate) Testing Flow Chart



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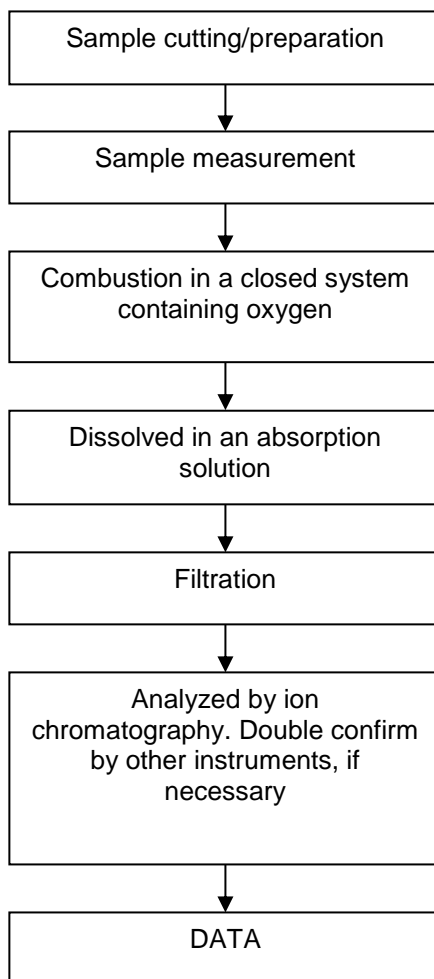
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Halogen Testing Flow Chart



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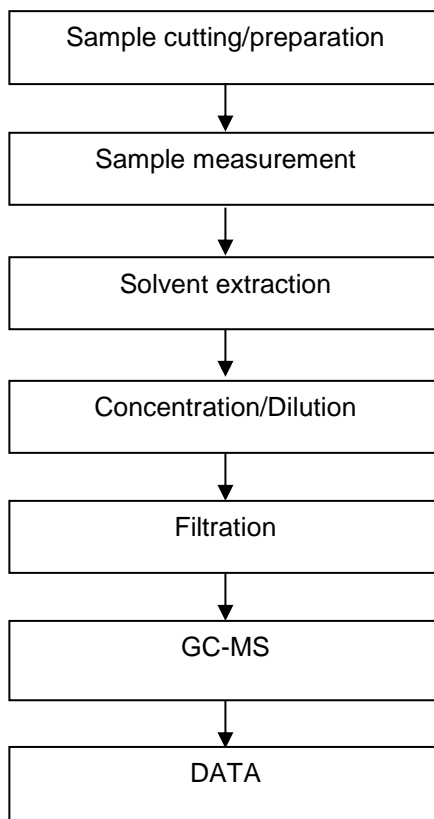
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Phthalates Testing Flow Chart



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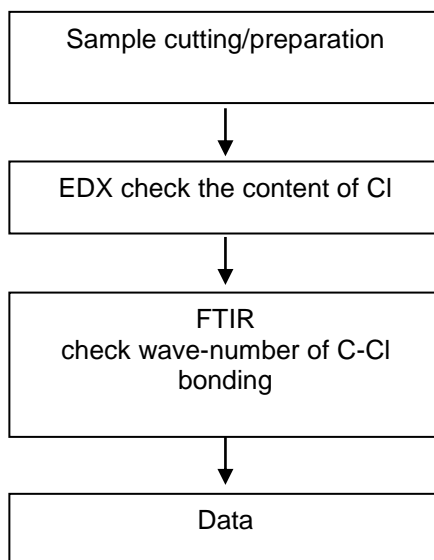
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PVC Testing Flow Chart



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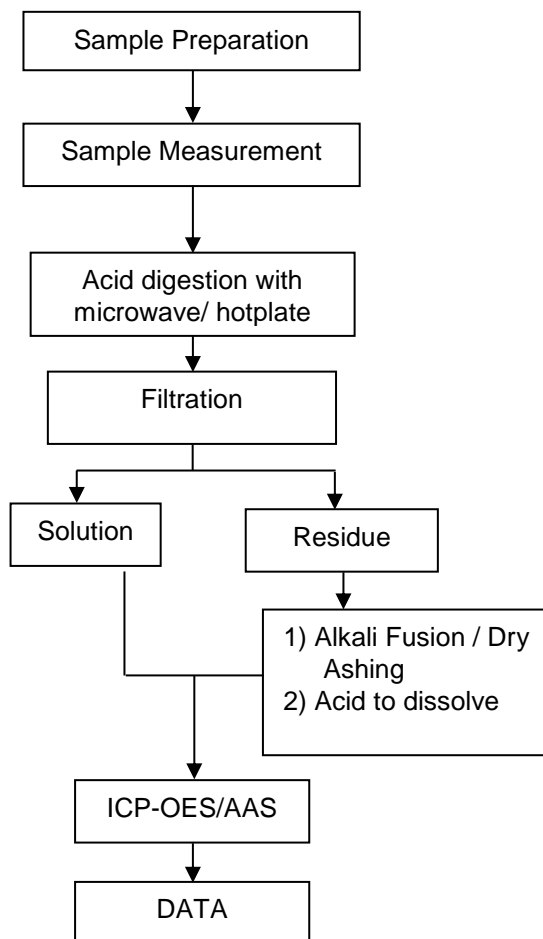
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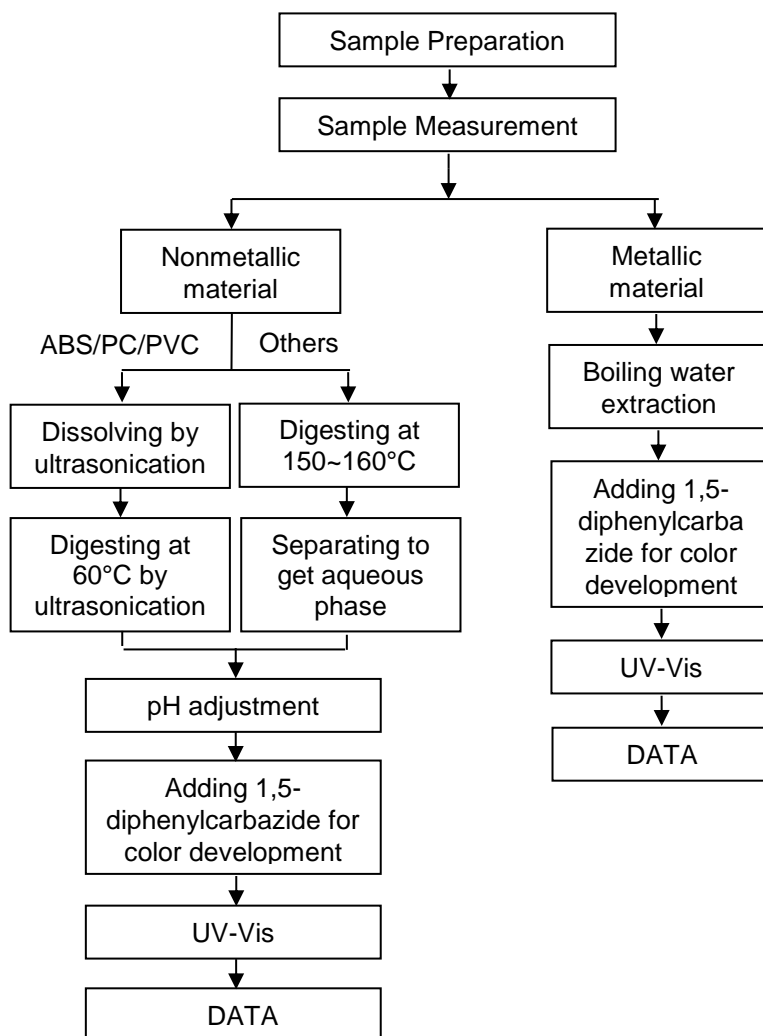
Elements (IEC62321) Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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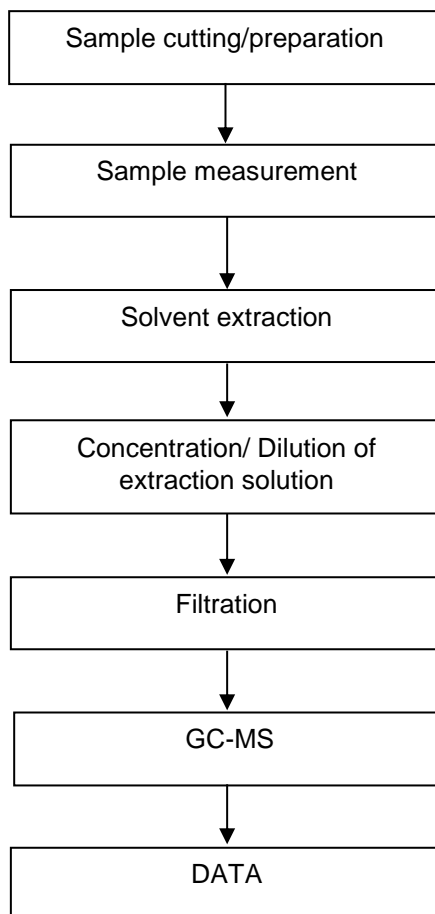
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PBBs/PBDEs Testing Flow Chart



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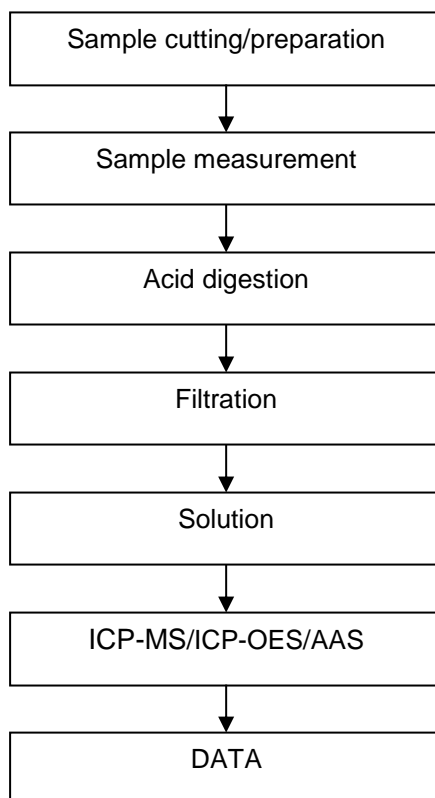
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Elements Testing Flow Chart



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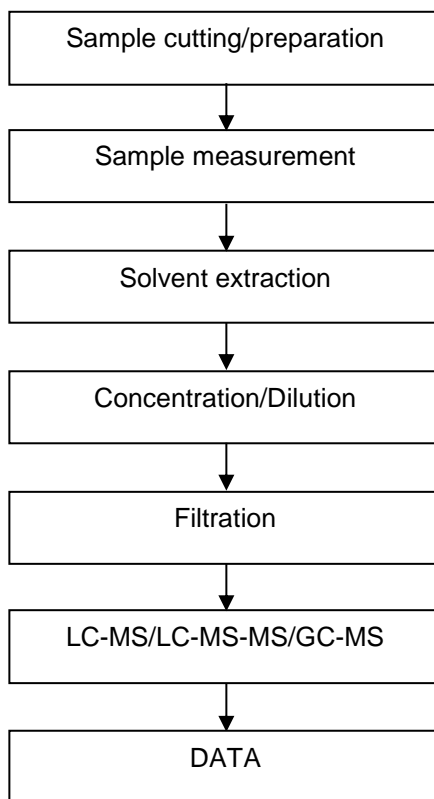
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PFASs/ PFOS/PFOA Testing Flow Chart



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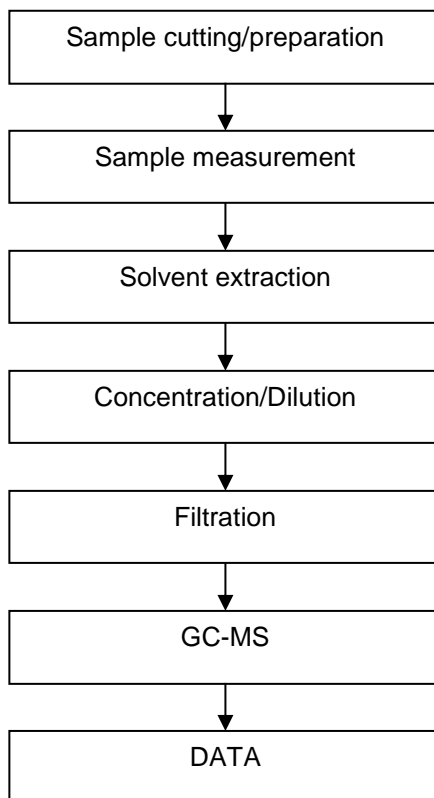
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PAHs Testing Flow Chart



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Attachment:

Remark:

LonghuaPC-811(S/Y/ST/HC), 811UV-30, 835 (G/X/S/Y), 1811 (T/A/M), 832(F/M/Y/PF), 813(F), 815, 1801-OMF, 801-OMF, 801E, 836(S), 815-01, 835-B, 801-4, 818-B, 828, 1811HC, 635(M), 1811B, 811B, 811BS, AM832, IMD13, 11xxA, EPC-35, L-(d), L-(d)(f), L-(d)(f)(g), BLC-11(a), MBLC-11, NLC-11(A)-FH, ML-xx, L-1TXX, BLC-1TXX, BLC-1LVXX, L-00S93XX



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Sample Photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Test Report

No.: CANEC23014154901

Date: Nov 21, 2023

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Client Name: SHINETSU SILICONE INTERNATIONAL TRADING (SHANGHAI) CO.,LTD
GUANGZHOU BRANCH

Client Address: RM B2410 CHINA SHINE PLAZA NO.9 LINHEXI RD, GUANGZHOU

Sample Name: KE-5612GU

The above sample(s) and information were provided by the client.

SGS Job No.: GZP23-019390

Sample Receiving Date: Nov 15, 2023

Testing Period: Nov 15, 2023 ~ Nov 21, 2023

Test Requested: Select test(s) as requested by the client.

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

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

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under US EPA Toxic Substances Control Act (TSCA) Section 6(h)	Pass
Halogen	See Results

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

Jessie Li

Jessie-JX Li
Approved Signatory

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	CAN23-0141549-0001.C001	Black soft material

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A1
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	8	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether (PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND



SGS-TESTING
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Test Report

No.: CANEC23014154901

Date: Nov 21, 2023

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Test Item(s)	Limit	Unit(s)	MDL	A1
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (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.

Persistent, Bioaccumulative, and Toxic (PBT) Chemicals under US EPA Toxic Substances Control Act (TSCA) Section 6(h)

Test Method: SGS In-house method (SGS-CCL-TOP-149-07, With reference to US EPA Method 3550C:2007), analysis was performed by GC-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
Decabromodiphenyl ether (DecaBDE) ^{Δ1}	1163-19-5	Prohibited	mg/kg	5	ND
Phenol, isopropylated phosphate (3:1) (PIP 3:1) ^{Δ2}	68937-41-7	Prohibited	mg/kg	5	ND
2,4,6-Tris(tert-butyl)phenol (2,4,6-TTBP) ^{Δ3}	732-26-3	3000	mg/kg	5	ND
Hexachlorobutadiene (HCBd)	87-68-3	Prohibited	mg/kg	5	ND
Pentachlorothiophenol (PCTP)	133-49-3	10000	mg/kg	5	ND
Conclusion					Pass

Notes:

- (1) The regulation is available at the following link.
<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/persistent-bioaccumulative-and-toxic-pbt-chemicals-under>
- (2) ^{Δ1}: The submitted sample is exempted if it is plastic for recycling from products or articles containing Deca-BDE.
- (3) ^{Δ2}: The submitted sample is exempted from the regulated scope if it is anyone of the following:
 - Hydraulic fluids for aviation or military industry;
 - Lubricants and grease;
 - New and replacement parts for motor and aerospace vehicles;
 - Intermediate in a closed system to produce cyanoacrylate adhesive;
 - Specialized engine air filters for locomotive and marine applications;
 - Plastic for recycling from products or articles containing PIP (3:1);
 - Finished products or articles made of plastic recycled from products or articles containing PIP (3:1).
- (4) ^{Δ3}: The submitted sample is out of the regulated scope if it is not oil or lubricant.

Halogen

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit(s)	MDL	A1
Fluorine(F)	mg/kg	20	ND



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Test Item(s)	Unit(s)	MDL	A1
Chlorine(Cl)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
Iodine(I)	mg/kg	50	ND

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



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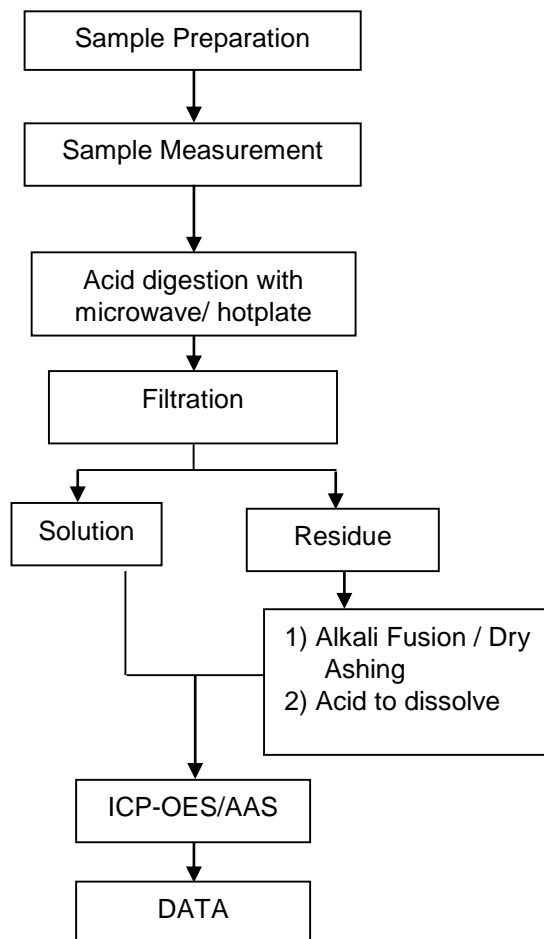
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Elements Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



Test Report

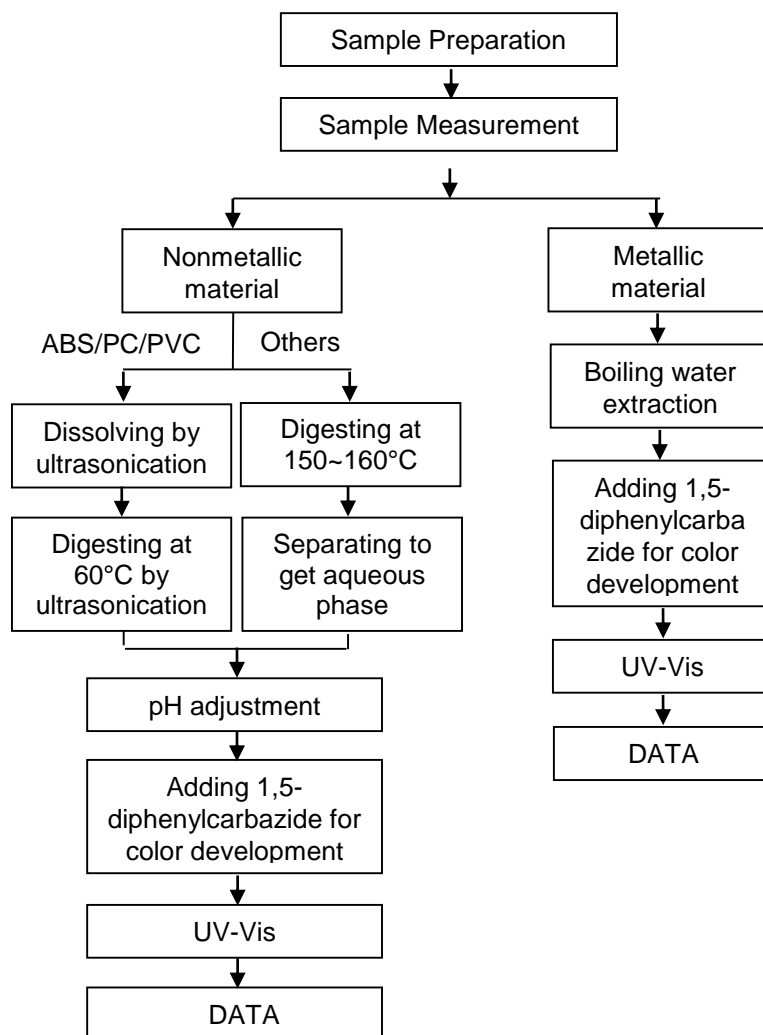
ATTACHMENTS

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Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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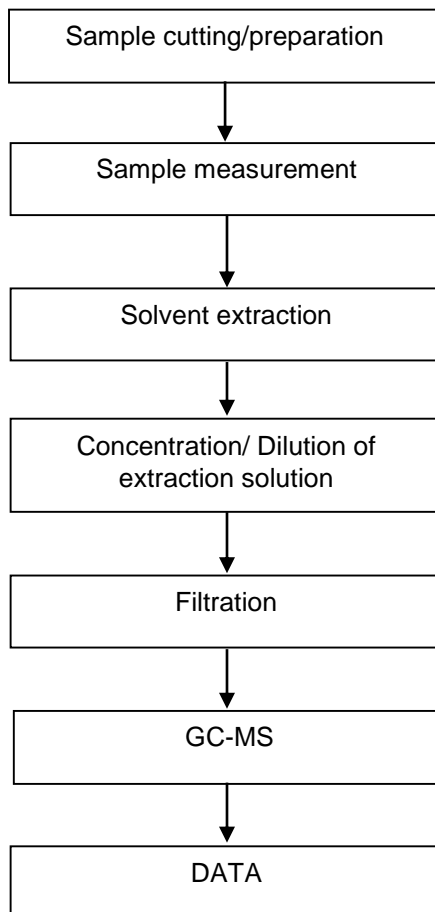
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No.: CANEC23014154901

Date: Nov 21, 2023

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PBBs/PBDEs Testing Flow Chart



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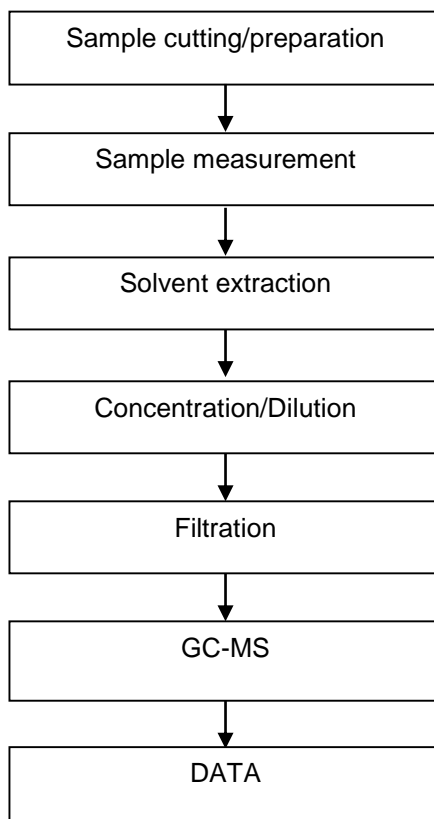
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Phthalates Testing Flow Chart



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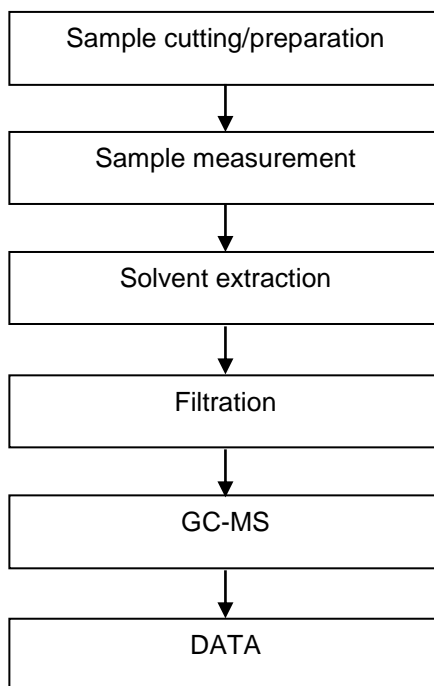
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Persistent, Bioaccumulative, and Toxic (PBT) Chemicals Testing Flow Chart



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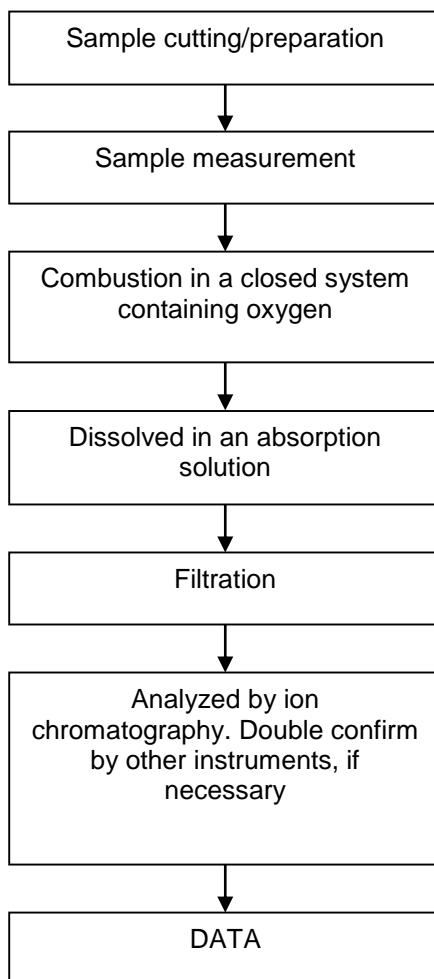
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Halogen Testing Flow Chart



Test Report

No.: CANEC23014154901

Date: Nov 21, 2023

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Sample Photo:



SGS authenticate the photo on original report only

*** End of Report ***



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Test Report

No.: SHAEC23009060001

Date: Jul 04, 2023

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Client Name: 3M CHINA LIMITED

Client Address: 222 TIANLIN ROAD, SHANGHAI

Sample Name: 3M 468MP

Model No.: 3M 468MP

Client Ref. Information: 3M 467MP, 3M 467MC, 3M 468MC, 3M 467MPF, 3M 468MPF

The above sample(s) and information were provided by the client.

SGS Job No.: SHP23-006029

Sample Receiving Date: Jun 28, 2023

Testing Period: Jun 28, 2023 ~ Jul 04, 2023

Test Requested: Select test(s) as requested by the client.

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

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

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass

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

Annie Liu

Annie Liu
Approved Signatory

scan to see the report



ADB55010



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Test Report

No.: SHAEC23009060001

Date: Jul 04, 2023

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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA23-0090600-0001.C001	Colorless transparent adhesive tape

Remarks:

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

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A1
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	8	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether (PBDEs)	1000	mg/kg	-	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylether (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylether (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND



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Test Item(s)	Limit	Unit(s)	MDL	A1
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (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.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019.



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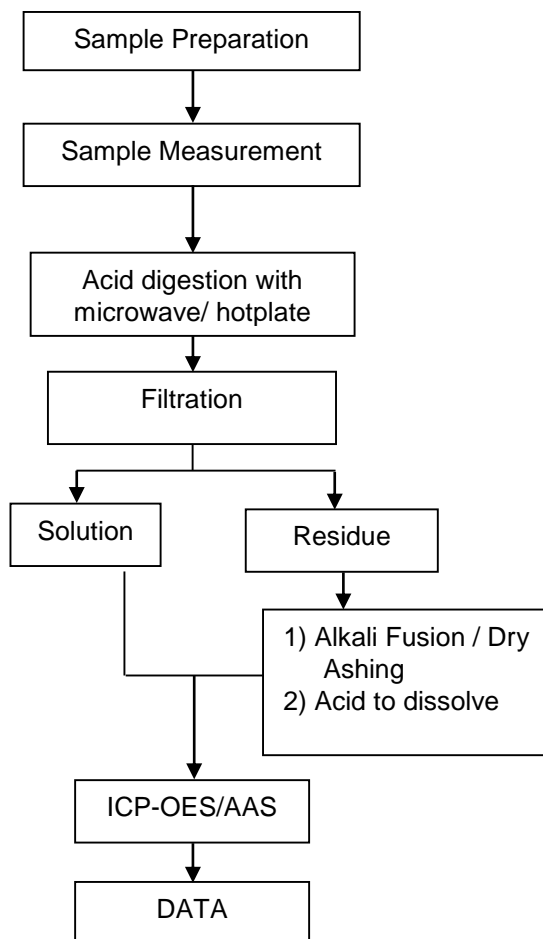
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Elements Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart.



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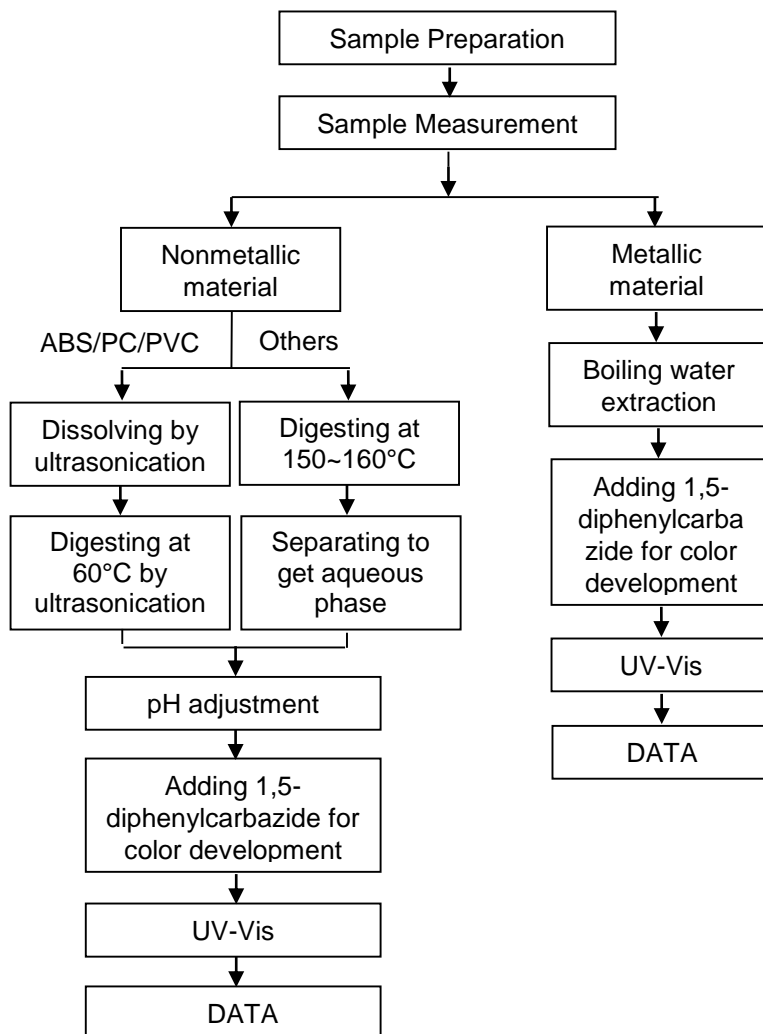
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ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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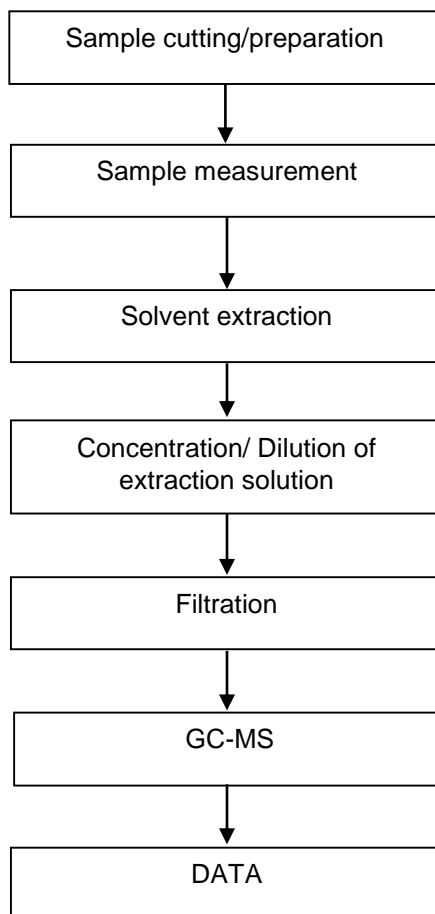
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PBBs/PBDEs Testing Flow Chart



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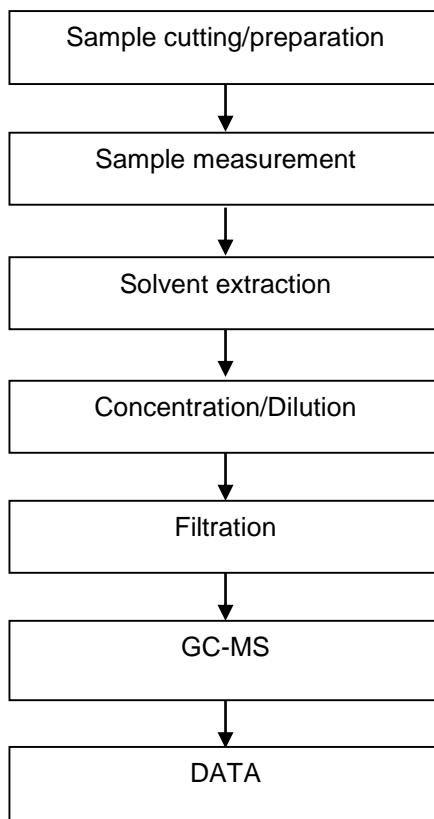
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Phthalates Testing Flow Chart



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Sample Photo:



SGS authenticate the photo on original report only
*** End of Report ***



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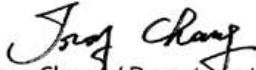
The following sample(s) was/were submitted and identified by the applicant as:

Sample Submitted By : HENKEL CORPORATION
Sample Name : THERMAL MATERIAL
Style/Item No. : TCF 4000 (PSX)

Sample Receiving Date : 24-Feb-2023
Testing Period : 24-Feb-2023 to 03-Mar-2023

Test Results : Please refer to following pages.

Test Requested	Conclusion
RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU	PASS
Other items : - Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ - HBCDD) - Beryllium (Be) - Phthalates (DIDP, DINP, DNOP)	See Results


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



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Test Part Description

No.1 : GRAY SHEET

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Cadmium (Cd)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	100
Lead (Pb)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	2.68	1000
Mercury (Hg)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Hexavalent Chromium Cr(VI)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.	1000
Monobromobiphenyl	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	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 PBBs		mg/kg	-	n.d.	1000
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.	-
Sum of PBDEs		mg/kg	-	n.d.	1000

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Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Butyl benzyl phthalate (BBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Dibutyl phthalate (DBP)		mg/kg	50	n.d.	1000
Di-(2-ethylhexyl) phthalate (DEHP)		mg/kg	50	n.d.	1000
Diisobutyl phthalate (DIBP)		mg/kg	50	n.d.	1000

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)		mg/kg	50	n.d.	-
Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)		mg/kg	50	n.d.	-
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ - HBCDD) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	With reference to IEC 62321-9: 2021, analysis was performed by GC/MS.	mg/kg	20	n.d.	-
Beryllium (Be) (CAS No.: 7440-41-7)	With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-

Note :

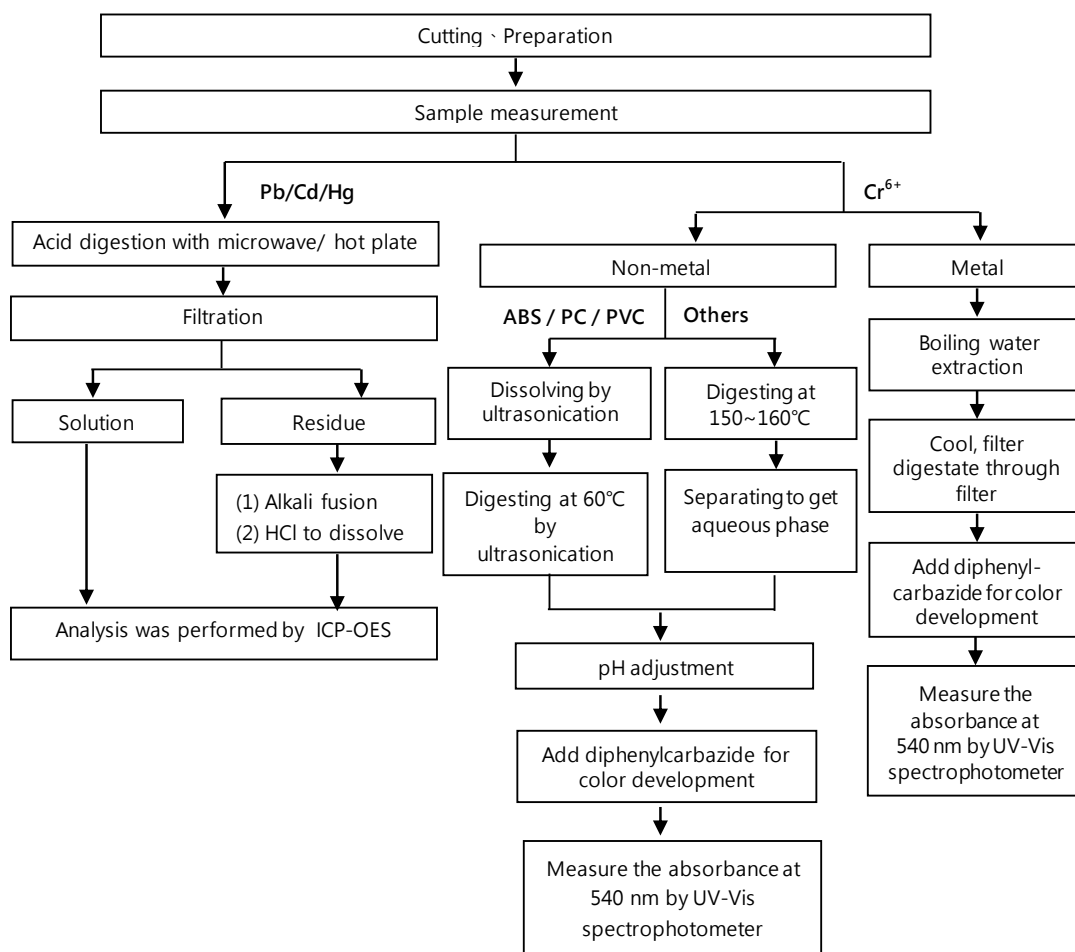
1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. "-" = Not Regulated
5. Unless otherwise stated , the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.

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Analytical flow chart of heavy metal

These samples were dissolved totally by pre-conditioning method according to below flow chart.

(Cr^{6+} test method excluded)



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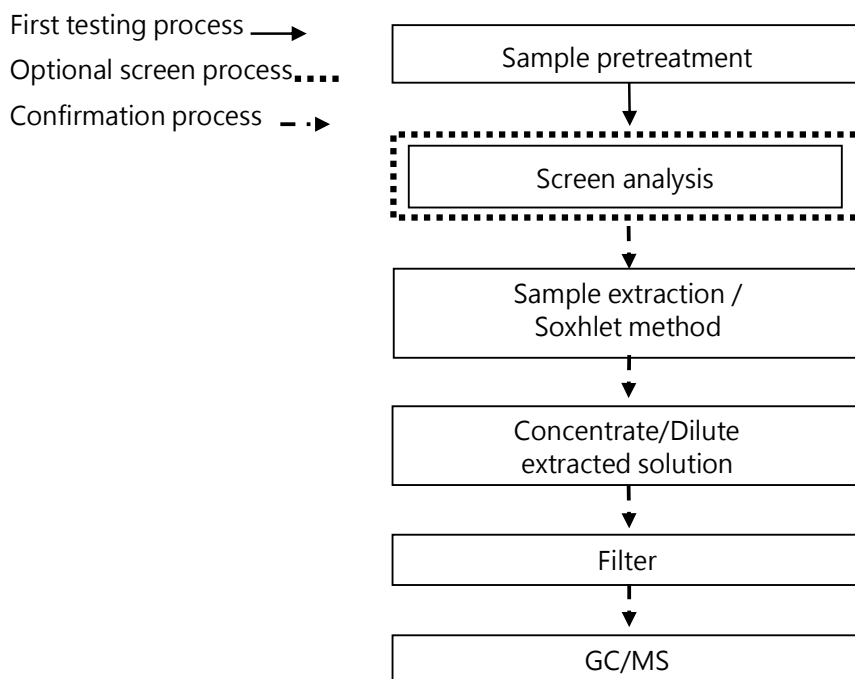
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Analytical flow chart – PBBs / PBDEs



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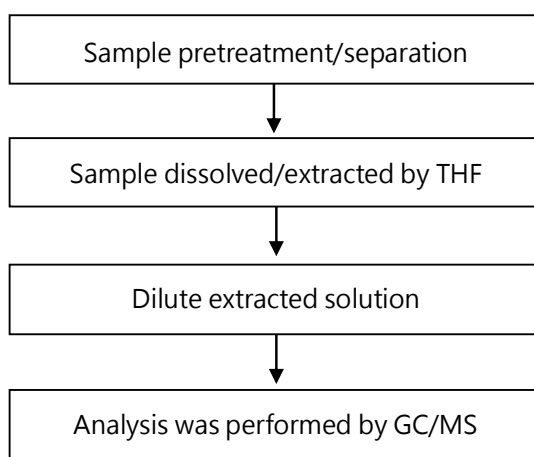
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Analytical flow chart - Phthalate

【Test method: IEC 62321-8】



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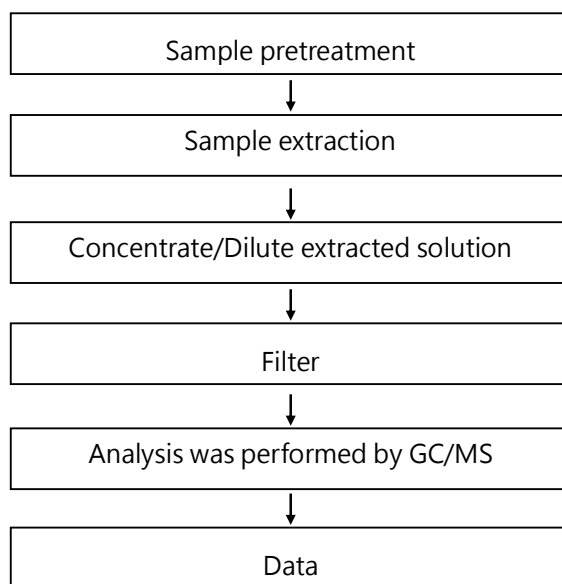
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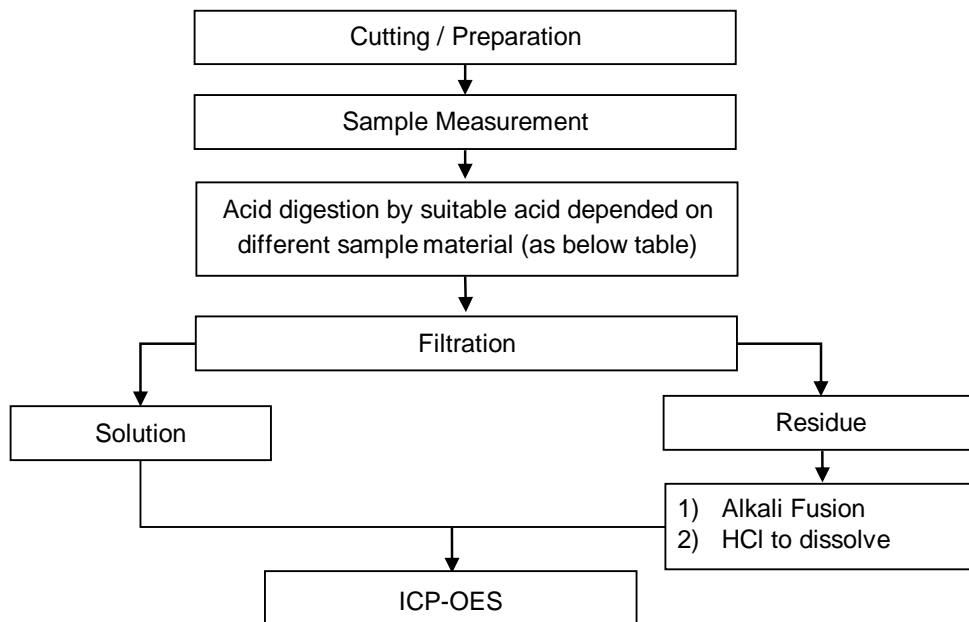
Analytical flow chart - HBCDD



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Flow Chart of digestion for the elements analysis performed by ICP-OES

These samples were dissolved totally by pre-conditioning method according to below flow chart.



Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Added appropriate reagent to total digestion

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Test Report

No.: ETR23206962

Date: 03-Mar-2023

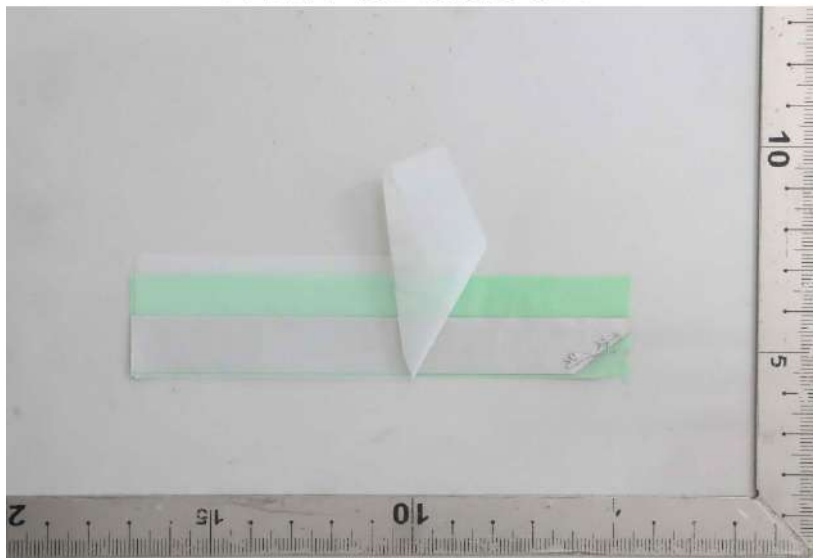
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* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR23206962



** End of Report **

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检测报告 Test Report

报告编号 A2230240846101002E
Report No. A2230240846101002E

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报告抬头公司名称 东莞市兆科电子材料科技有限公司
杭州兆科电子材料有限公司
昆山兆科电子材料有限公司
Company Name DONGGUAN ZIITEK ELECTRONICAL MATERIAL AND TECHNOLOGY,LTD.
shown on Report HANGZHOU ZIITEK ELECTRONICAL MATERIAL CO.,LTD.
KUNSHAN ZIITEK ELECTRONIC MATERIAL,LTD.
地 址 东莞市横沥镇西城工业二区 B8 栋
浙江省杭州市临安区杨岱路 33 号
江苏省苏州市昆山开发区大泽路 65 号
Address BUILDING B8, XICHENG INDUSTRIAL SECOND ZONE, HENGLI TOWN,
DONGGUAN CITY
NO.33 YANGDAI ROAD, LINAN DISTRICT, HANGZHOU CITY, ZHEJIANG
PROVINCE, CHINA
NO. 65, DAZE ROAD, KUNSHAN DEVELOPMENT ZONE, SUZHOU CITY,
JIANGSU PROVINCE

以下测试之样品及样品信息由申请者提供并确认

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

样品名称 Sample Name	导热材料 Heat Conduction Material
样品型号 Part No.	TIF100 SERIES
样品颜色 Color	蓝色 blue
样品接收日期	2023.05.24
Sample Received Date	May 24, 2023
样品检测日期	2023.05.24-2023.05.30
Testing Period	May 24, 2023 to May 30, 2023

检测要求/检测依据/检测结果 请参见下页。

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

批准人
Approved by 郑晴涛
技术经理 Technical Manager
华测检测认证集团股份有限公司
Centre Testing International Group Co.,Ltd.
CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

日期
Date 2023.05.30

No. R158921287
广东省深圳市宝安区新安街道兴东社区华测检测大楼

检测报告

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检测要求

根据客户要求, 对所提交样品中的铅(Pb), 镉(Cd), 汞(Hg), 六价铬(Cr(VI)), 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP), 锑(Sb), 氟(F), 氯(Cl), 溴(Br), 碘(I), 全氟辛烷磺酸(PFOS), 全氟辛酸(PFOA), 邻苯二甲酸酯, 聚氯乙烯(PVC), 中链氯化石蜡(MCCPs), 红磷进行测试。

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), Phthalates (DBP, BBP, DEHP, DIBP), Antimony(Sb), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA), Phthalates, Polyvinyl Chloride (PVC), Middle Chain Chlorinated Paraffins (MCCPs), Red phosphorus in the submitted sample(s).

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检测依据 Test Method

测试项目 Tested Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017 和/或 IEC 62321-5:2013 测试总铬含量 IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
锑 Antimony(Sb)	参考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
氟 Fluorine (F)	参考 EN 14582:2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	参考 EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	参考 EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	参考 EN 14582:2016 Refer to EN 14582:2016	IC
全氟辛酸磺酸盐 Perfluorooctane Sulfonates(PFOS)	参考 US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
全氟辛酸 Perfluorooctanoic Acid(PFOA)	参考 US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
邻苯二甲酸酯 Phthalates	参考 EN 14372:2004(E) Refer to EN 14372:2004(E)	GC-MS
聚氯乙烯 Polyvinyl Chloride (PVC)	参考 JY/T 001-1996 Refer to JY/T 001-1996	FT-IR
中链氯化石蜡 Middle Chain Chlorinated Paraffins (MCCPs)	参考 US EPA 3540C:1996 & US EPA 8270E:2018 Refer to US EPA 3540C:1996 & US EPA 8270E:2018	GC-MS(NCI)
红磷 Red phosphorus	参考 GB/T 9722-2006 Refer to GB/T 9722-2006	PY-GC-MS

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检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
铅 Lead (Pb)	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
多溴联苯 Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

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测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
锑 Antimony (Sb)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
氟 Fluorine (F)	N.D.	10 mg/kg
氯 Chlorine (Cl)	N.D.	10 mg/kg
溴 Bromine (Br)	N.D.	10 mg/kg
碘 Iodine (I)	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS)	N.D.	0.010 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
全氟辛酸 Perfluorooctanoic Acid (PFOA)	N.D.	0.010 mg/kg

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测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二正辛酯 Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	30 mg/kg
邻苯二甲酸二异壬酯 Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
邻苯二甲酸二异癸酯 Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
邻苯二甲酸二甲酯 Dimethyl phthalate (DMP) CAS#:131-11-3	N.D.	30 mg/kg
邻苯二甲酸二乙酯 Diethyl phthalate (DEP) CAS#:84-66-2	N.D.	30 mg/kg
邻苯二甲酸二丙酯 Dipropyl phthalate (DPrP) CAS#:131-16-8	N.D.	30 mg/kg
邻苯二甲酸二戊酯 Dipentyl phthalate (DPP/DPENP) CAS#:131-18-0	N.D.	30 mg/kg
邻苯二甲酸二庚酯 Diheptyl phthalate (DHP) CAS#:3648-21-3	N.D.	30 mg/kg
邻苯二甲酸二环己酯 Dicyclohexyl phthalate (DCHP) CAS#:84-61-7	N.D.	30 mg/kg
邻苯二甲酸二异辛酯 Diisooctyl phthalate (DIOP) CAS#:27554-26-3	N.D.	50 mg/kg
邻苯二甲酸二壬酯 Dinonyl phthalate (DNP) CAS#:84-76-4	N.D.	30 mg/kg
己二酸二异壬酯 Diisononyl adipate (DINA) CAS#:33703-08-1	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
聚氯乙烯 Polyvinyl Chloride (PVC)	阴性 Negative*2	/

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测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
中链氯化石蜡 Middle Chain Chlorinated Paraffins (MCCPs)	N.D.	100 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
	002	
红磷 Red phosphorus	阴性 Negative**1	500 mg/kg

样品/部位描述 Sample/Part Description

序号	CTI 样品 ID	描述
No.	CTI Sample ID	Description
1	002	蓝色固体 Blue solid

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备注: 对于检测铅, 镉, 汞, 锑之样品已消解完全。

-N.D. = 未检出 (小于方法检出限)

-mg/kg = ppm = 百万分之一

-*¹ 阴性 = 不含有

-采用 PY-GC-MS 方法以测定样品裂解过程中裂解产物 P₄ 的定性红磷, 在磷酸盐和磷酸酯与部分强氧化或还原剂共存时, 可能会因裂解过程发生反应产生 P₄, 出现假阳性风险。

-*结果仅供参考。

-*² 阴性表示不含有聚氯乙烯(PVC)

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-*¹Negative = Not Contained

-The red phosphorus is qualified by PY-GC-MS method which detect pyrolysis products P₄ of red phosphorus. But there is a false positive risk by performing this method, since P₄ could also generate while the phosphate and organic phosphate coexist with some strong oxidizing or reductant agent in pyrolysis process.

-*Result for reference only.

-*²Negative = Not Contained Polyvinyl Chloride(PVC)

注释: 本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。

Note: The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.

检测报告

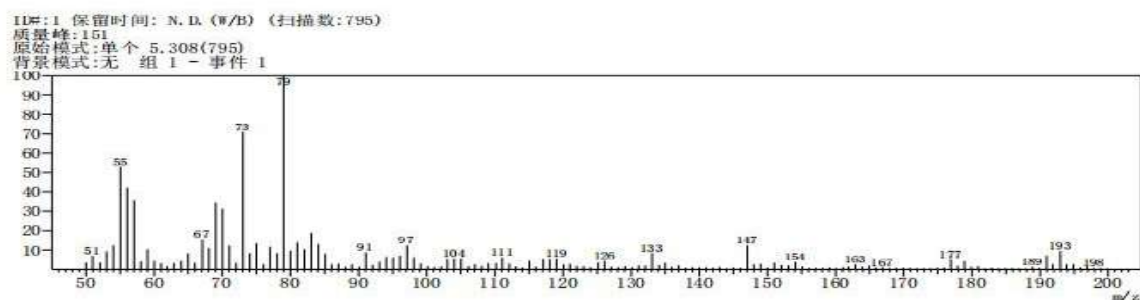
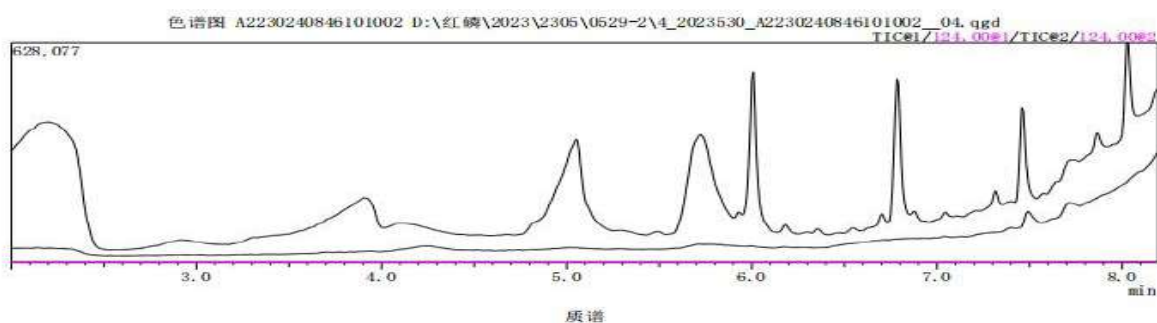
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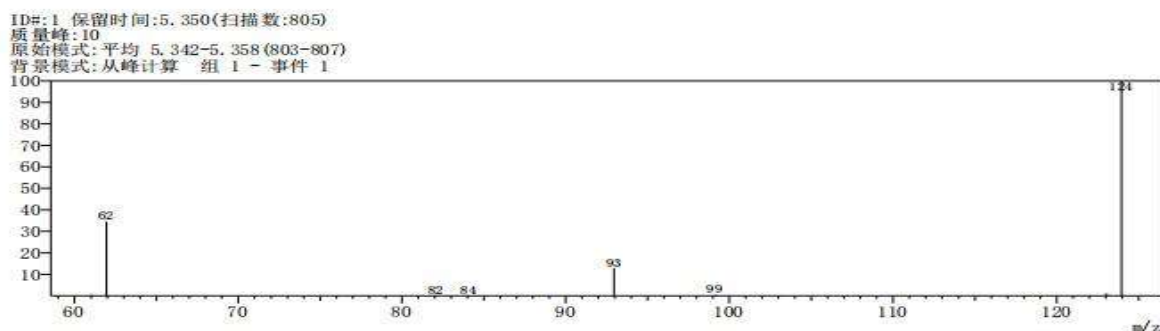
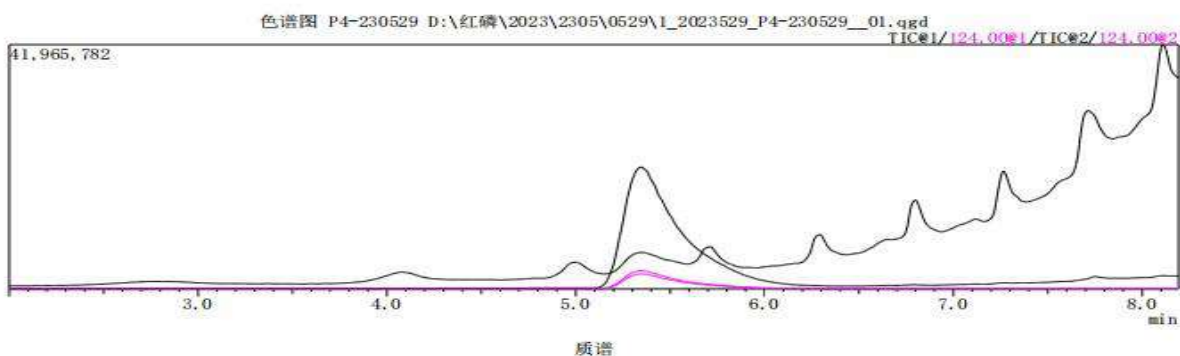
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红磷样品测试谱图 Red phosphorus Sample Test Spectra

样品测试谱图 Sample Test Spectra



标准物质谱图 Standard Material Test Spectra



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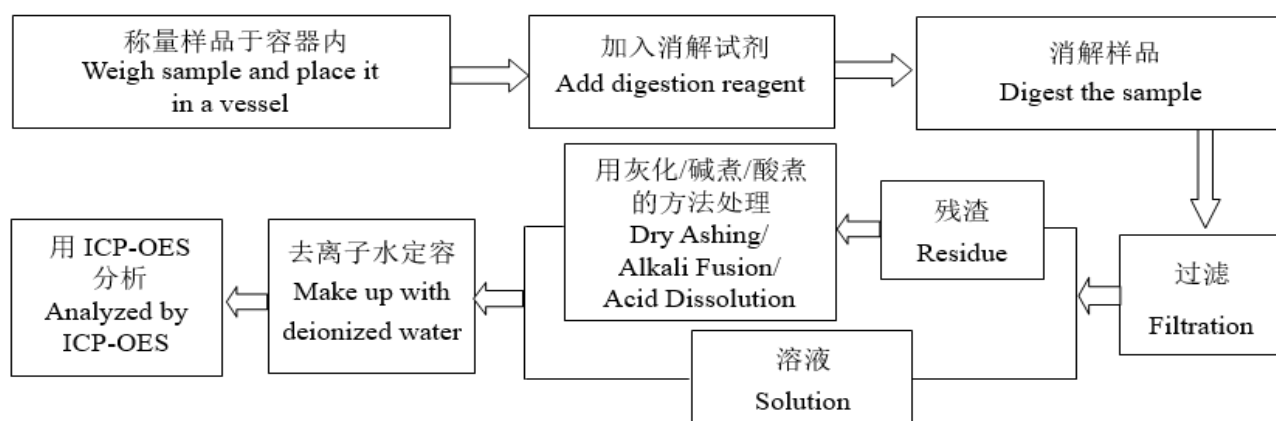
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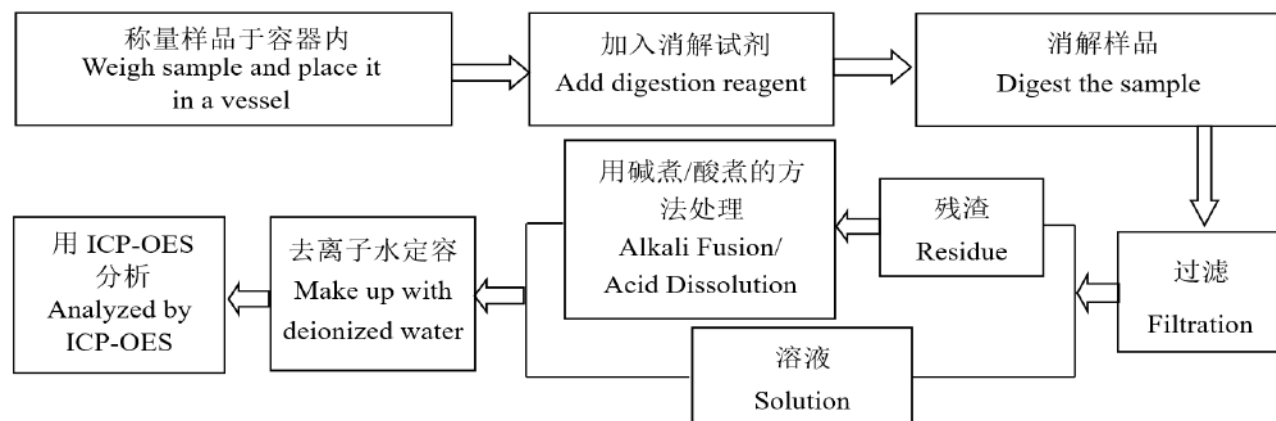
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检测流程 Test Process

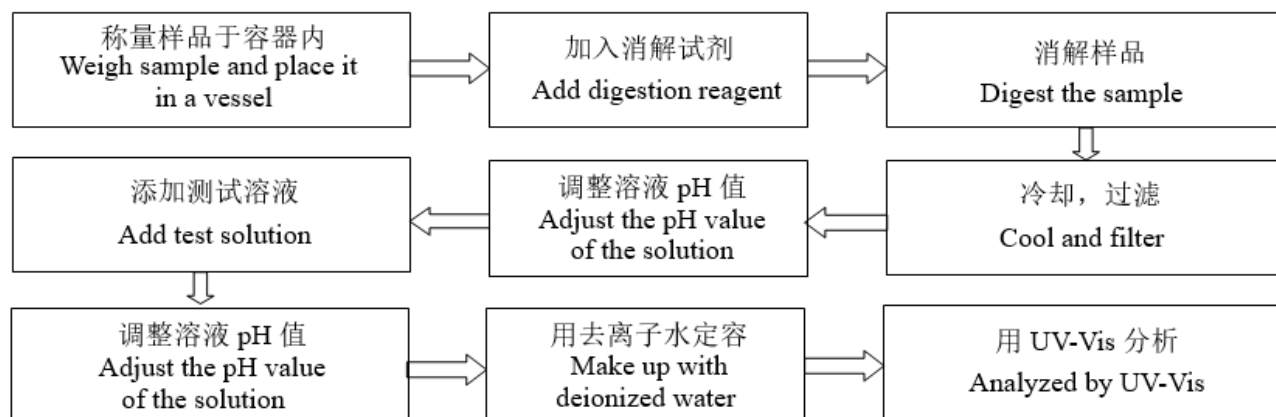
1. 铅 Lead (Pb), 镉 Cadmium (Cd), 铬 Chromium(Cr)



2. 汞 Mercury (Hg)



3. 六价铬 Hexavalent Chromium (Cr(VI))

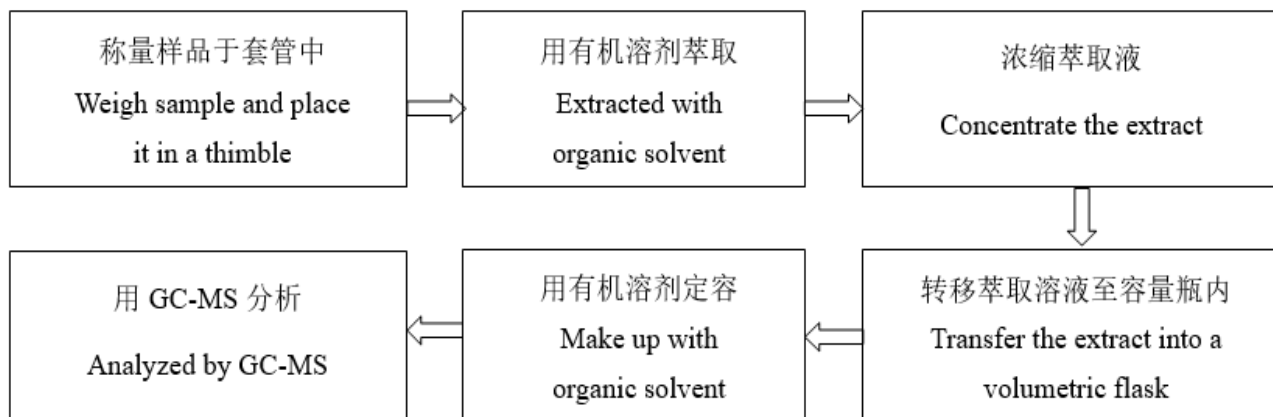


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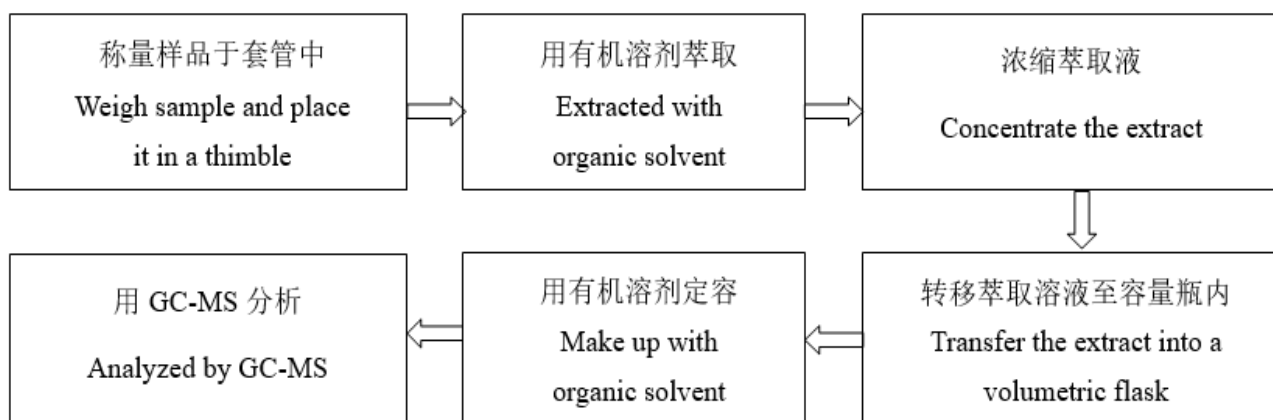
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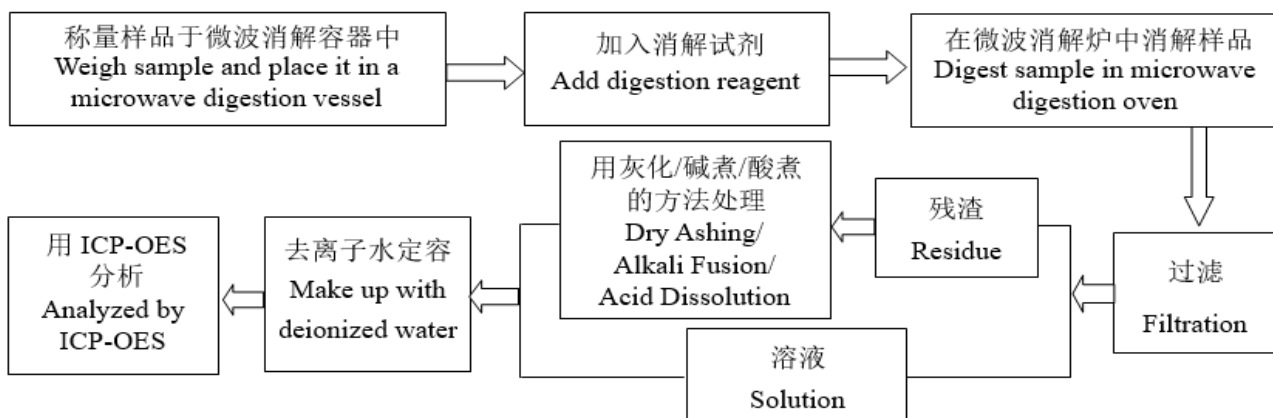
4. 多溴联苯 Polybrominated Biphenyls (PBBs), 多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)



5. 邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)



6. 锑 Antimony(Sb)



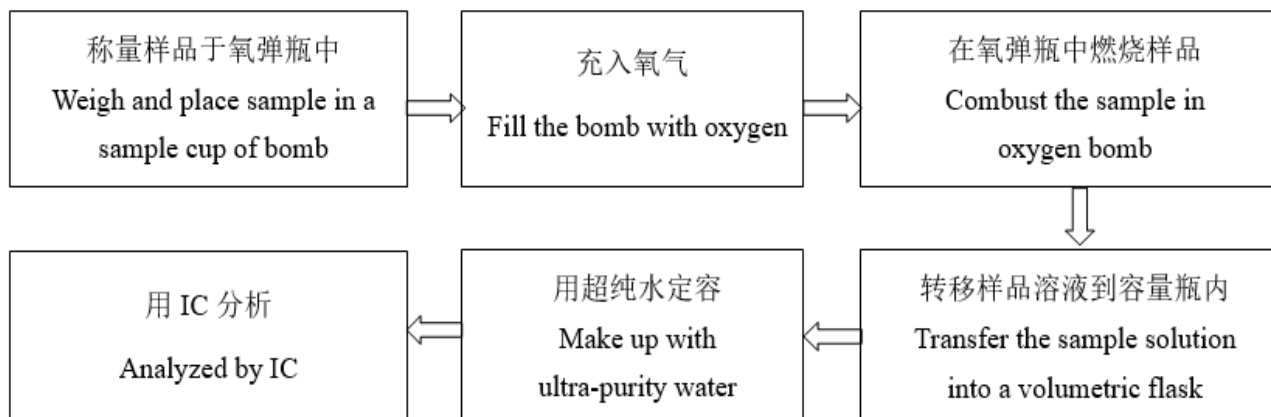
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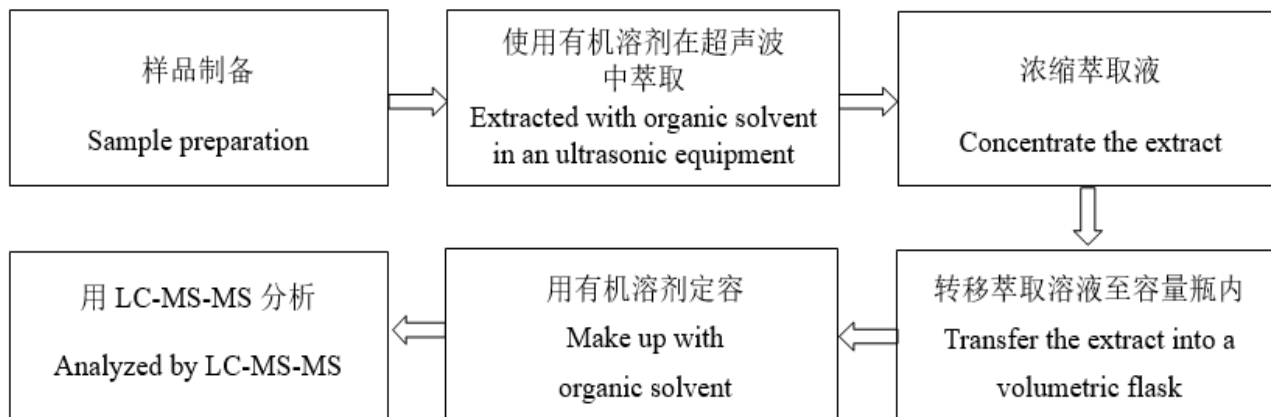
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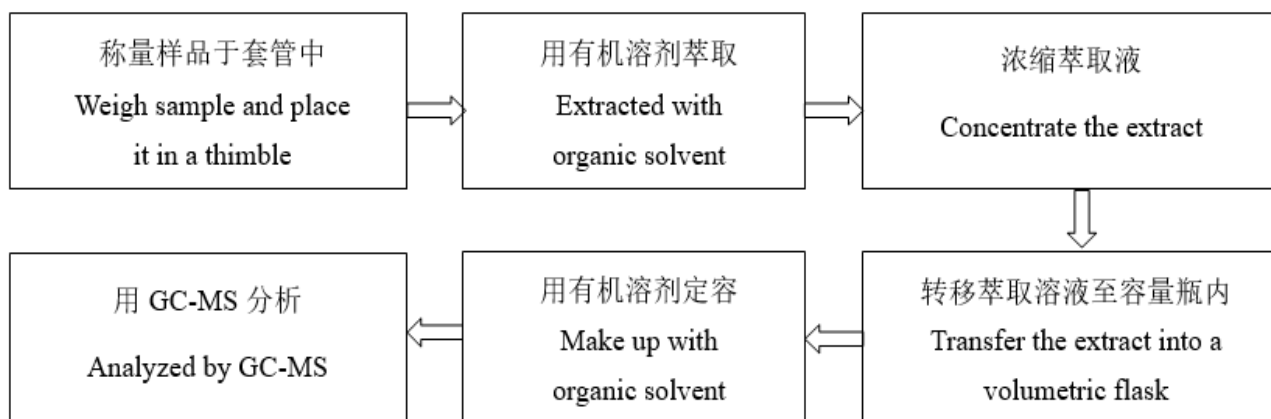
7. 氟 Fluorine (F), 氯 Chlorine (Cl), 溴 Bromine (Br), 碘 Iodine (I)



8. 全氟辛烷磺酸 (PFOS)Perfluorooctane Sulfonates(PFOS), 全氟辛酸 (PFOA)Perfluorooctanoic Acid(PFOA)



9. 邻苯二甲酸酯 Phthalates

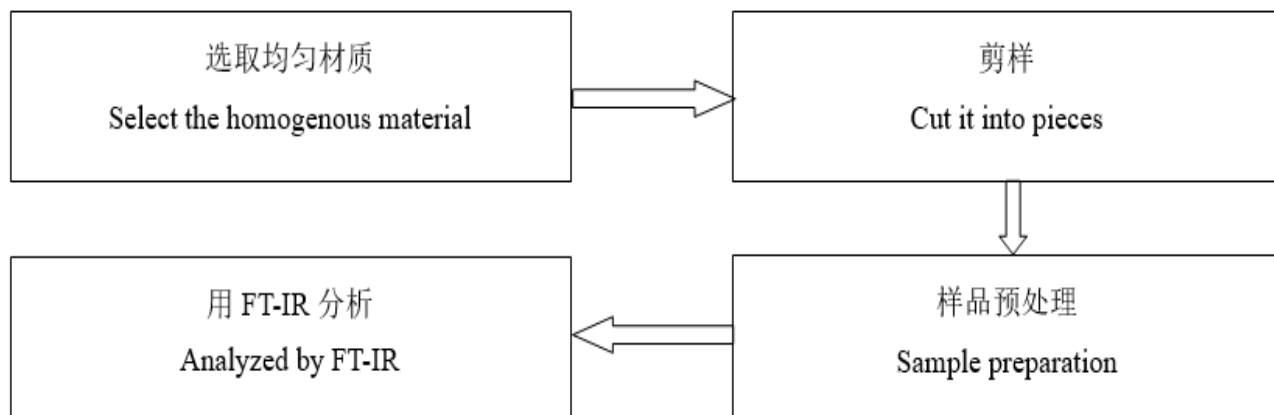


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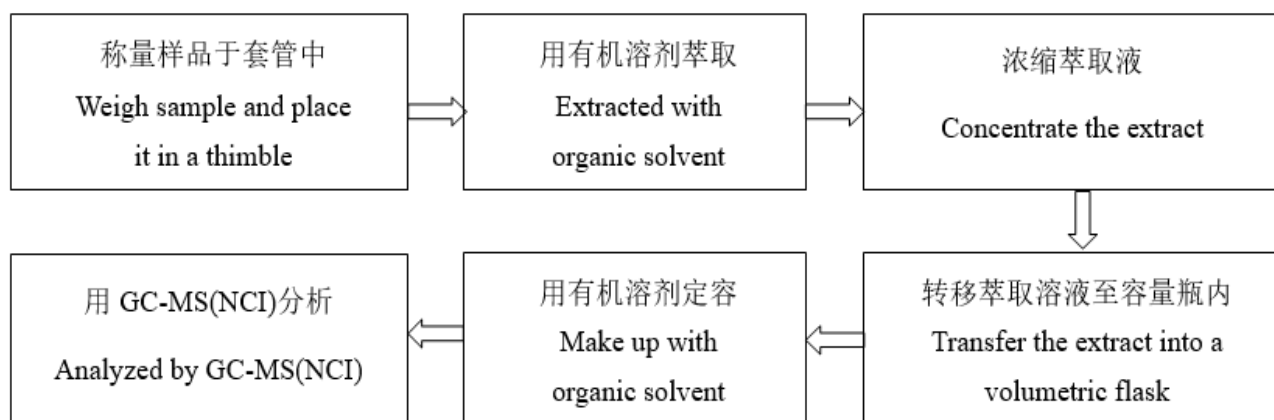
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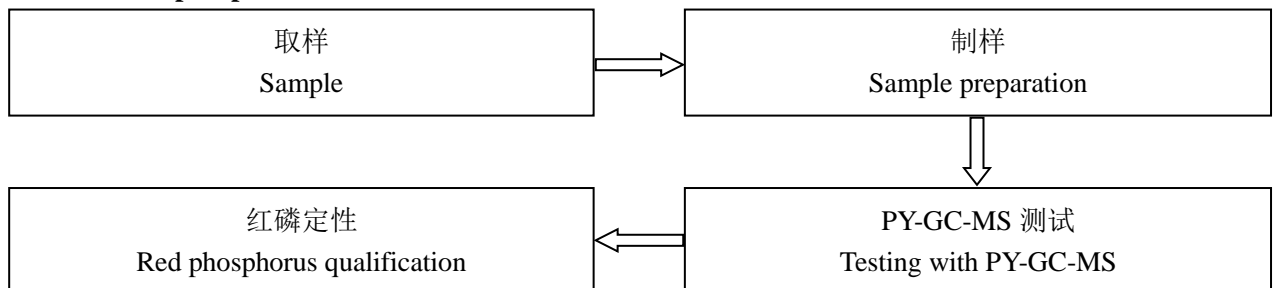
10. 聚氯乙烯 Polyvinyl Chloride (PVC)



11. 中链氯化石蜡 Middle Chain Chlorinated Paraffins (MCCPs)



12. 红磷 Red phosphorus



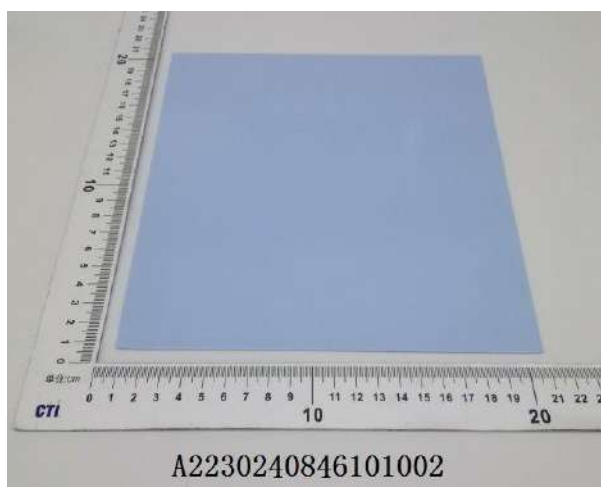
检测报告 Test Report

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样品图片

Photo(s) of the sample(s)



声明 Statement:

1. 检测报告无批准人签字、“专用章”及报告骑缝章无效;

This report is considered invalid without approved signature, special seal and the seal on the perforation;

2. 报告抬头公司名称及地址、样品及样品信息由申请者提供, 申请者应对其真实性负责, CTI 未核实其真实性;

The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;

3. 本报告检测结果仅对受测样品负责;

The result(s) shown in this report refer(s) only to the sample(s) tested;

4. 未经 CTI 书面同意, 不得部分复制本报告;

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5. 如检测报告中的英文内容与中文内容有差异, 以中文为准。

In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

*** 报告结束 ***

*** End of Report ***

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GOLDLY SKY INTERNATIONAL.,LTD

成品檢驗規範	總頁次	7	分頁次	1
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制定,變更履歷					
版次	年 月 日	制 定 (變 更) 內 容.理 由	核 准	審 核	擬 案
1	2010/8/23	新規格作成		&	劉軍
2	2010/11/18	修訂4.1抽樣計劃採用MIL—STD—105E LEVEL II 單次抽樣變更為抽樣水準為MIL-STD-1916，VL=III，允收水準0收1退。 增加7項絲印logo檢驗要求，將原本7項順延至8項		&	劉軍

金利佳國際有限公司

GOLDLY SKY INTERNATIONAL ., LTD

散熱片成品檢驗規範	總頁次	7	分頁次	2
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<p>1. 目的：</p> <p>本規範定義為散熱模組成品檢驗要求, 並確定為我司對散熱模組成品及出貨品質要求判定之標準。</p> <p>2. 適用範圍：</p> <p>適用於我司生產的散熱模組的成品、出貨檢驗。</p> <p>3. 檢驗權責：</p> <p>FQC: 負責成品檢驗作業。</p> <p>OQC: 負責出貨檢驗作業。</p> <p>4. 定義：</p> <p>4. 1 抽樣計劃採用抽樣水準為MIL-STD-1916, VL=III, 允收水準0收1退。</p> <p>4. 2 缺點定義：</p> <p>4. 2. 1 嚴重缺點（CR）：對使用者、維修或依賴該產品之個人，有發生危險或不安全結果之缺點</p> <p>4. 2. 2 重要缺點（MA）：指嚴重缺點以外之缺點，其結果或許會導致故障，或實質上減低產品單位之使用性能，以致不能達成期望之目標</p> <p>4. 2. 3 次要缺點（MI）：次要缺點系指產品之使用性，實質上不致減低其期望目的之缺點或雖與已設定之標準有所差異，但在產品單位之使用與操作效用上，並無多大影響。</p> <p>4. 3 檢驗作業說明</p> <p>4. 3. 1 檢驗環境、條件：常溫常濕下，確認工作臺面平整清潔，照明800LUX以上，光源與被檢物之間距離1M左右。目視距離30CM，45° 角，目視時間5S。</p> <p>4. 3. 2 人員要求：檢驗人員視力要求0.8以上，作業時不得穿戴手表、戒指等刮傷產品之物體。</p>				

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散熱片成品檢驗規範	總頁次	7	分頁次	3
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<p>4.4外觀級面定義：</p> <p>4.4.1 A級面：組立后目視成品機板正面</p> <p>4.4.2 B級面：除A&C面之外的外觀可視成品側品</p> <p>鋁擠可見面</p> <p>4.4.3 C級面：散熱片底部面</p>				

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散熱片成品檢驗規範	總頁次	7	分頁次	4
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5. 主要缺陷類別:

有感刮傷：用指甲刮動可以明顯感覺的刮痕

無感刮傷：用指甲刮動無感覺但目視明顯可見刮痕

凹凸痕或撞傷：受其它物體沖擊所造成有面異常凸起或凹陷

臟污：加工過種中，不明油污、外來物質附著表面，無法擦試者

變形：由于外力造成產品的外觀形變

色差：電鍍、陽極、電著，抗氧化等相關表面處理色澤不一現象

露白：因表面處理不良或外界破壞而導致的露出原材底色現象

砂眼：原材缺陷，在經過表面加工后仍出現的大面積小砂孔

溢錫/溢膠：焊接過程中錫（鋁）膏溢出散熱片外觀面者

缺料/多料：由于加工制程不良導致產品規格異于工程圖面者

毛邊：裁切，沖壓或研磨等導致殘留的刮手邊緣

麻點：因表面處理不良而在產品表面留下的點狀現象

裂紋：鑄件、塑件因成型過程產生應力釋放而導致產品斷裂的現象

縮水：鑄件、塑件表面出顯凹陷

水紋：鑄件、塑件表面有象水流過的痕紋

表面機加工痕紋：經由砂輪、噴砂、沖壓、CNC等機械加工所留之痕跡

縮水：鑄件、塑件表面出現明顯凹陷

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散熱片成品檢驗規範		總 頁 次	7	分 頁 次	5
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6. 檢驗標準					
	A級面 （散熱片正視面&logo本體）	B級面 （外則周圍面及270度目視熱管面）	C面（散熱片底部面）		
有感劃傷	不允收	同一个平面上≤2条，长度L≤3mm;不可露底材	不可露底材		
無感劃傷	允收，logo字跡不可有	允收	允收		
凹凸痕或撞傷	同一平面上≤3點（面積≤1.0mm ² ）不可露底材，銘板&logo不可有	同一个面上≤5点（面积≤2.0mm ² ）不可露底材，熱管自然彎折凹痕允收	允收		
變形	不影響產品尺寸及組立，FIN片形變偏移量≤1/2，相鄰FIN片間距且≤1處，FIN片不可有扭曲形變	不影響產品尺寸及組立，FIN片形變偏移量≤1/2，相鄰FIN片間距且≤2處，FIN片不可有扭曲形變	不影響產品尺寸及組立可允收		
脏污	可去除的脏污（灰尘、纸屑）允收，水纹、油污、其它黏性很强不可去除的脏污不允许	可去除的脏污（灰尘、纸屑）允收，不可去除之臟污同一平面≤3處（面積≤3mm ²	不影響產品尺寸及組立可允收		
色差/異色	不允收	不允收	允收		
露白	露白點數≤1（面積≤0.5mm ² ），銘板&logo不可有	露白點數≤3（面積≤1.0mm ² ）	允收		
砂眼	砂眼點數≤1（面積0.5mm ² ），銘板&logo不可有	砂眼點數≤3（面積1.0mm ² ）	允收		
溢錫/溢膠	不允收	不可超過結合點1.5MM範圍，不可有錫珠	不可有錫珠，不影響產品尺寸及組立		
缺料/多料	不允收	同一平面上≤1點（面積1.0mm ² ）	不影響產品尺寸及組立可 允收		
毛邊	不允收	手感刮手或影響產品尺寸則不允收	手感刮手或影響產品尺寸則不允收		
麻點	麻點點數≤1（面積≤0.5mm ² ），銘板&logo不可有	麻點點數≤2（面積≤1.0mm ² ）	允收		
裂紋	不允收	不允收	不允收		

表格:TSF040101B1

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縮水	不允收	不允收	不影響產品尺寸及組立可允收			
表面機加工痕跡	正確的機加工過程自然形成有規則之紋路可允收或依限度樣品（不可露底材）	正確的機加工過程自然形成有規則之紋路可允收或依限度樣品（不可露底材）	不影響產品尺寸及組立可允收			
結合線、料影、流痕、應力痕、印痕	不允收	不允收或依限度樣品	允收			
其它	1. 保獲膜：翹起1處，長度 $\leq 20\text{MM}$ 2. 氧化、生銹不允收 3. 露白不可補色	1. 氧化、生銹不允收 白不可補色 2. 露	氧化、生銹不允收			

7. 絲印logo檢驗標準

序號	檢驗項目	檢驗工具	檢驗標準
1	黑點	目視、點規	不允許
2	白點/雜質	目視、點規	不允許
3	色差	目視、樣品比對	目視比對無差異
4	刮傷	目視	不允許
5	絲印偏位	目視	圖面無具體要求，偏位距離 $\leq 0.5\text{mm}$ ，如圖面有要求則按圖面要求管控
6	油墨臟污	目視	不允許
7	字體不符	目視	不允許
8	絲印毛邊	目視	目視5秒不明顯OK
9	附著力	3M 600膠帶	將3M 600膠帶(寬:18mm, 長:20~25mm)貼附于絲印位置, 用手指來回壓緊, 靜止3~5秒后, 抓住膠帶一頭, 呈45°角迅速掀起, 重複此動作3次, 絲印油墨不粘附於膠帶上
10	抗溶性	酒精	用白布沾酒精(75 \pm 5%以上), 以約200gf的力來回擦拭15次, 絲印顏色無明顯變化.

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8. 其它要求:

8.1尺寸：依承認書圖面&工程發行圖面標準規格執行

8.2 功能：依承認書圖面&工程發行圖面標注執行

8.3包裝：依承認書或工程發行圖面規格作業或參照客戶相關包裝標示標準要求，包裝
內數量不可短少現象，不可混料錯料，外包裝不可有變形、破損等不良

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