

Test Report



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Report No. A2190205314101015

Applicant ZEN HIGH PRECISION INDUSTRIAL LTD

Address DONGGUAN FOLLOWING B POND GEM INDUSTRIAL 33, NO.2

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

Sample Name PBT UL94V-0 BLACK
Client Reference Information ZH-0600-H, ZH-0600D-H, ZH-1800-H/W, ZH-180A-W, ZH-1810-H, ZH-1820-H/W, ZH-1850-H/W, ZH-1870-H, ZH-1900-H/W, ZH-190A-W, ZH-1920-H, ZH-1950-H/W, ZH-1970-H, ZH-4960-S, ZH-6250, ZH-6200, ZH-A1271-H, ZH-A1272
Sample Received Date Aug. 9, 2019
Testing Period Aug. 9, 2019 to Aug. 15, 2019

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), Hexabromocyclododecane (HBCDD), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Phthalates, Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA), Tetrabromobisphenol A (TBBP-A), Polycyclic Aromatic Hydrocarbons (PAHs) in the submitted sample(s).

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

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



Tested by

Lee Li

Approved by

Hill Zheng

Hill Zheng

Technical Manager

Reviewed by

Tori Xia

Date

Aug. 15, 2019

No. R158924480

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

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Test Method

Test Item(s)	Test Method	Measured Equipment(s)
Lead(Pb)	IEC 62321-5:2013	ICP-OES
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium(Cr(VI))	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996 & US EPA 8270E:2017	GC-MS
Fluorine (F)	Refer to EN 14582:2016	IC
Chlorine (Cl)	Refer to EN 14582:2016	IC
Bromine (Br)	Refer to EN 14582:2016	IC
Iodine (I)	Refer to EN 14582:2016	IC
Phthalates	Refer to EN 14372:2004(E)	GC-MS
Perfluorooctane Sulfonates (PFOS)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
Perfluorooctanoic Acid (PFOA)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
Tetrabromobisphenol A (TBBP-A)	Refer to US EPA 3550C:2007 & US EPA 8270E:2017	GC-MS
Polycyclic Aromatic Hydrocarbons (PAHs)	AfPS GS 2014:01 PAK	GC-MS

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Test Result(s)

Tested Item(s)	Result	MDL
Lead(Pb)	N.D.	2 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg
Mercury(Hg)	N.D.	2 mg/kg
Hexavalent Chromium(Cr(VI))	N.D.	8 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Biphenyls(PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Polybrominated Diphenyl Ethers (PBDEs)		
Monobromodiphenyl ether	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	5 mg/kg

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Test Result(s)

Tested Item(s)	Result	MDL
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Hexabromocyclododecane(HBCDD)	N.D.	5 mg/kg
Tested Item(s)	Result	MDL
Fluorine(F)	N.D.	10 mg/kg
Chlorine(Cl)	N.D.	10 mg/kg
Bromine(Br)	N.D.	10 mg/kg
Iodine(I)	N.D.	10 mg/kg
Tested Item(s)	Result	MDL
Phthalates		
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	30 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	30 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	30 mg/kg
Di-n-octyl phthalate(DNOP) CAS#:117-84-0	N.D.	30 mg/kg
Di-isononyl phthalate(DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
Di-iso-decyl phthalate(DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
Tested Item(s)	Result	MDL
Perfluorooctane Sulfonates(PFOS)	N.D.	0.01 mg/kg
Tested Item(s)	Result	MDL
Perfluorooctanoic Acid(PFOA)	N.D.	0.01 mg/kg
Tested Item(s)	Result	MDL
Tetrabromobisphenol A(TBBP-A)	N.D.	5 mg/kg

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Test Result(s)

Tested Item(s)	Result	MDL
Polycyclic Aromatic Hydrocarbons (PAHs)		
Naphthalene	N.D.	0.2 mg/kg
Acenaphthylene	N.D.	0.2 mg/kg
Acenaphthene	N.D.	0.2 mg/kg
Fluorene	N.D.	0.2 mg/kg
Phenanthrene	N.D.	0.2 mg/kg
Anthracene	N.D.	0.2 mg/kg
Fluoranthene	N.D.	0.2 mg/kg
Pyrene	N.D.	0.2 mg/kg
Benzo(a)anthracene	N.D.	0.2 mg/kg
Chrysene	N.D.	0.2 mg/kg
Benzo(b)fluoranthene	N.D.	0.2 mg/kg
Benzo(k)fluoranthene	N.D.	0.2 mg/kg
Benzo(a)pyrene	N.D.	0.2 mg/kg
Indenol(1,2,3-cd)pyrene	N.D.	0.2 mg/kg
Dibenzo(a,h)anthracene	N.D.	0.2 mg/kg
Benzo(g,h,i)perylene	N.D.	0.2 mg/kg
Benzo(j)fluoranthene	N.D.	0.2 mg/kg
Benzo(e)pyrene	N.D.	0.2 mg/kg
Sum (Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene)	N.D.	/
Sum 18 PAHs	N.D.	/

Sample/Part Description Black plastic

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

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Limits for PAHs content (mg/kg) for material of (grip) surfaces, which are to be categorized on account of the results of the risk analysis.

Parameters	Category 1	Category 2		Category 3	
	Materials intended to be put in the mouth or materials of toys with foreseeable long-term skin contact (longer than 30 seconds)	Materials not covered by category 1 with foreseeable skin contact for longer than 30 seconds (long-term skin contact) or repeated short-term skin contact #		Materials not covered by category 1 or 2 with foreseeable skin contact up to 30 seconds (short term skin contact)	
		Toys covered by Directive 2009/48/EC	Other products	Toys covered by Directive 2009/48/EC	Other products
Benzo(a)pyrene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(e)pyrene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(a)anthracene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(b)fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(j)fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(k)fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Chrysene	<0.2	<0.2	<0.5	<0.5	<1
Dibenz(a,h)anthracene	<0.2	<0.2	<0.5	<0.5	<1
Benzo(g,h,i)perylene	<0.2	<0.2	<0.5	<0.5	<1
Indenol(1,2,3-cd)pyrene	<0.2	<0.2	<0.5	<0.5	<1
Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene Pyrene	<1 Sum	<5 Sum	<10 Sum	<20 Sum	<50 Sum
Naphthalene	<1	<2		<10	
Sum 18 PAHs	<1	<5	<10	<20	<50

Formulation “of repeated short-term skin contact” REACH Annex XVII No.50 supplement (REGULATION (EU) No.1272/2013)

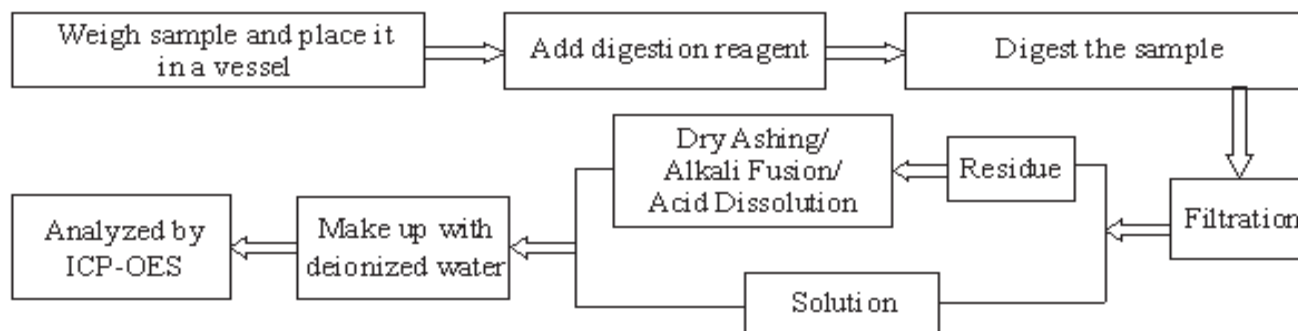
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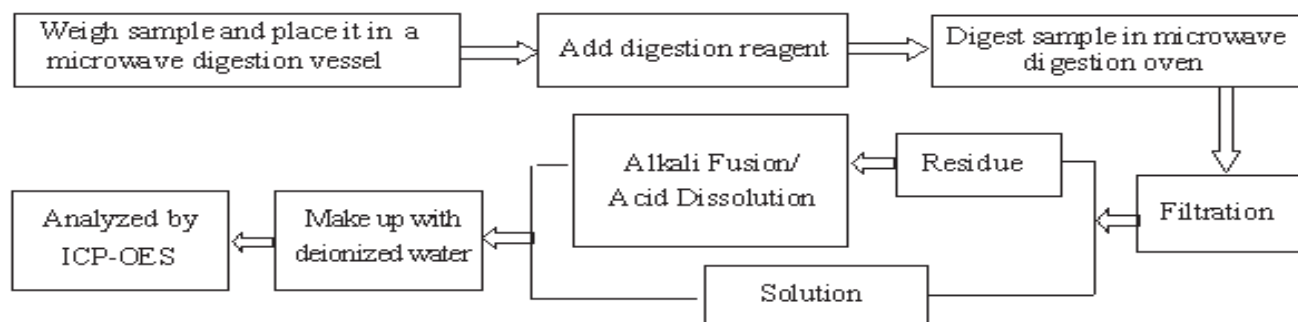
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Test Process

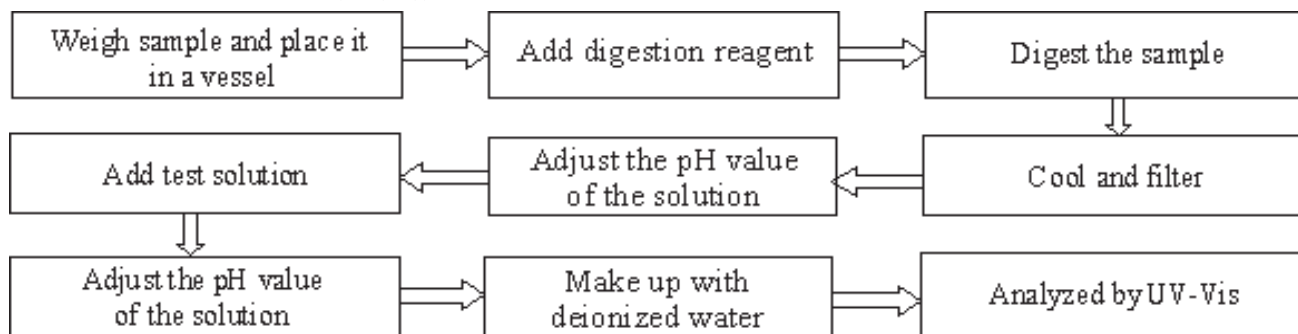
1. Lead(Pb), Cadmium(Cd), Chromium(Cr)



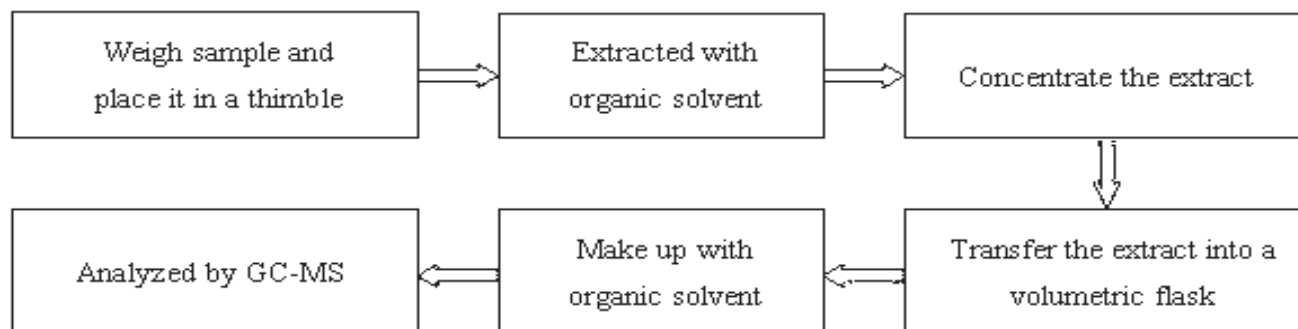
2. Mercury(Hg)



3. Hexavalent Chromium(Cr(VI))



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

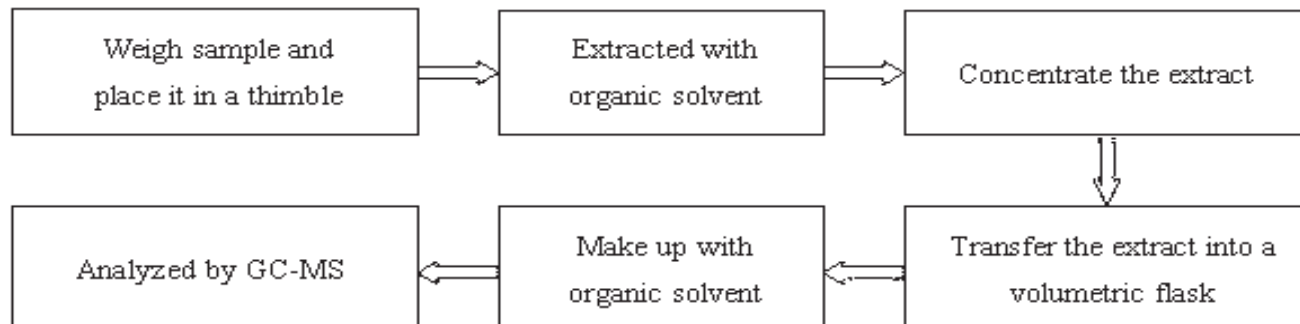


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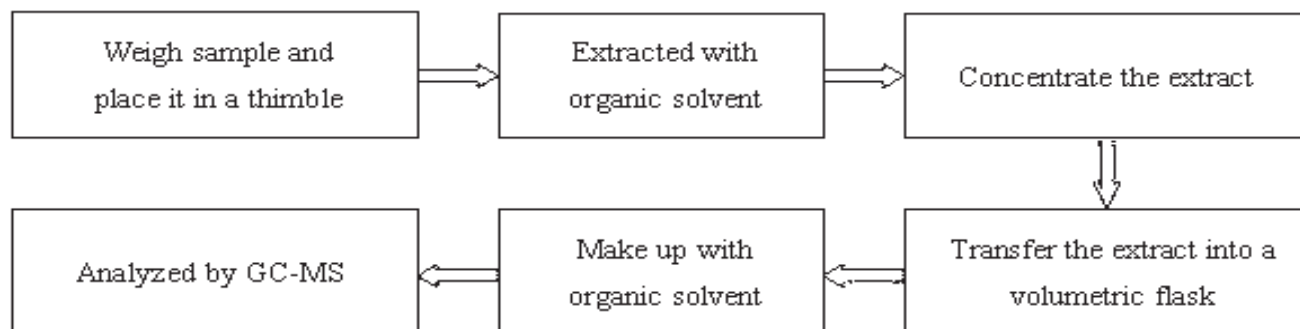
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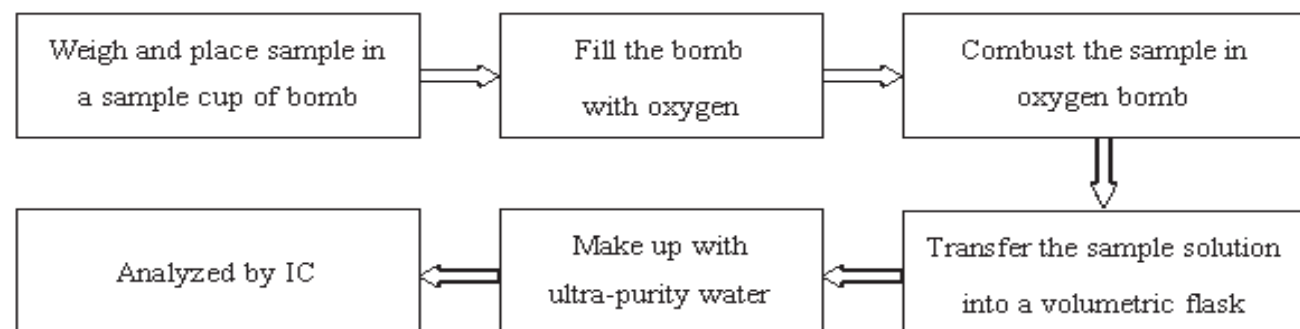
5. Phthalates (DBP, BBP, DEHP, DIBP)



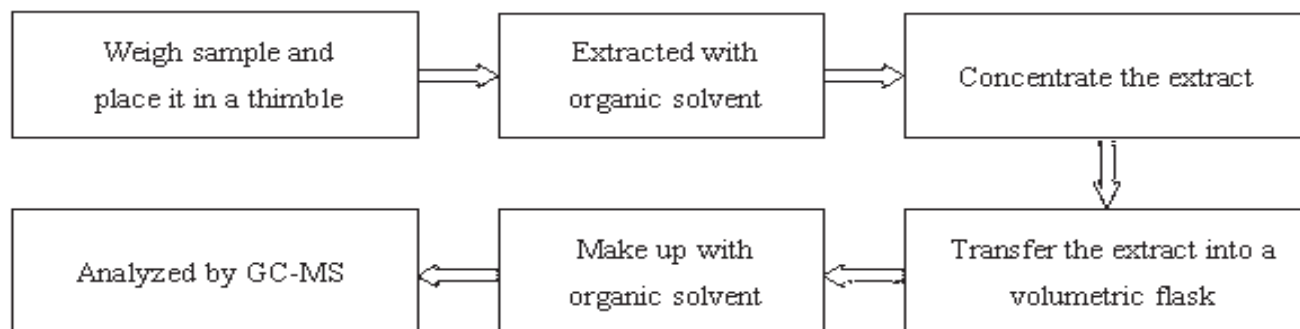
6. Hexabromocyclododecane (HBCDD)



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



8. Phthalates

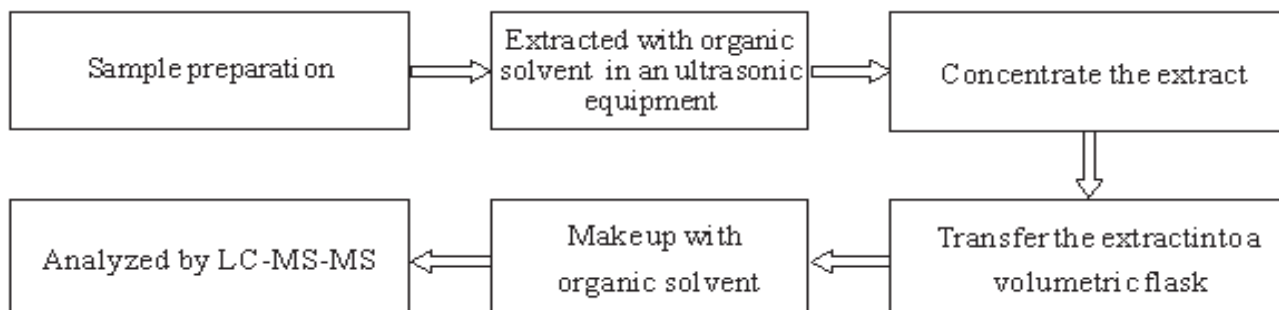


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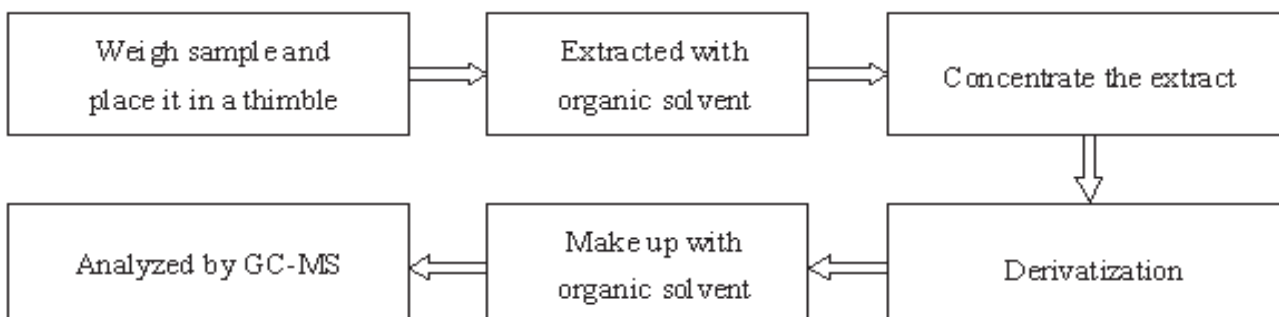
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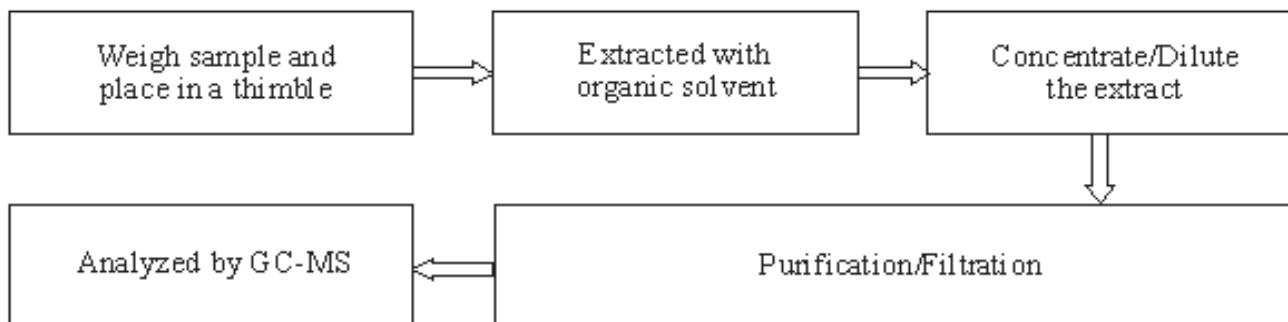
9. Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA)



10. Tetrabromobisphenol A (TBBP-A)



11. Polycyclic Aromatic Hydrocarbons (PAHs)



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Photo(s) of the sample(s)



*** End of report ***

Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The sample(s) and sample information was/were provided by the client who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

物質安全資料表

物質安全資料表編號:	MSDS-03	版次:	A/1
發行日期人:	22-02-2014	修改日期:	01-03-2017
制表單位:	工程課	製錶人:	馬濤

一.物品與廠產資料:

物品中(英)文名稱:	膠殼/HOUSING
類別:	塑膠
主要組成物質:	PBT UL94V-0
化學名稱:	polybutylene terephthalate
製造商或供應商名稱:	東莞市仁海塑膠製品有限公司
製造商或供應商地址:	東莞塘廈鎮蛟乙塘寶石高科技工業區
製造商或供應商網址:	http:// www.zhconnector.com
緊急聯絡電話:	0769-82016508

二.成份辨識資料:

組成成分:	PBT樹脂/PBT resin
CAS編號:	26062-94-2
比例:	45%~63%
組成成分:	玻璃纖維/Glass Fiber
CAS編號:	65997-17-3
比例:	28%~32%
組成成分:	耐燃劑/Flame Retardant
CAS編號:	68928-70-1 71342-77-3 1309-64-4
比例:	8%~16%
組成成分:	添加劑/Additives
CAS編號:	N. A
比例:	1%~7%

三.危險辨識資料:

健康危害效應:	
本產品在固體時不具健康危害及危險.	
環境影響:	
本產品在固體時對環境不具影響.	
種類的名稱:	有機化合物
危險標示類別:	成品本身不具危險
危險級數:	健康:1 可燃:1(0=低. 4=極高)

四.急救措施:

吸入時:	吸入溶化氣體時,移至通風處,嚴重立即送醫院檢查
食入時:	勿繼續吞食任何食物(含口水),迅速送醫院檢查
皮膚接觸:	皮膚接觸熔融物時,以大量清水沖洗,不要自行取下傷口固化樹脂,嚴重時送醫治療。
眼睛接觸:	以大量清水沖洗冷卻。

物質安全資料表

五.滅火措施

燃燒性資料:
可燃性: 常溫不會燃燒, 非常穩定。
燃燒性: 遠離火源
自燃性: 無
爆炸性: 無
適應滅火劑:
水.泡沫.干粉.沙等滅火劑均可使用
消防建議: 無

六.泄漏處理方法:

泄漏於空氣中: 不適應
泄漏於水中: 回收
泄漏於地面中: 回收

七.取用及儲存方法:

注意事項
儲存於陰涼處, 注意消防安全, 避強氧化性物質。
儲存條件:
倉儲最高容許溫度: 無
避免放置於潮濕或酸/鹼性物質或酸/鹼性氣體之場所

八.人員曝露防護措施:

呼吸防護: 防塵口罩
手部防護: 防護手套
眼睛防護: 安全護目鏡
皮膚防護: 長袖工作服及安全鞋

九.物理及化學性質:

外觀: 顆粒固體
熔點: 225℃
參考材料物性表
比 重: 1.3-1.4
蒸氣壓: 無
溶解度: 無

物質安全資料表

十.安全性及反應性資料

安定性: 一般狀況下屬安定物質
特殊狀況下可能之危害反應: 無
應避免之狀況: 不可加熱至300℃以上
應避免之物質: 強碱, 強酸, 強氧化劑
危害分解物: CO ₂ ,CO,ACIDS,ALCOHOL,THF

十一.毒性資料:

來源途徑
本產品有不具毒性, 通常不會刺激眼睛及皮膚

十二.生態資料:

本產品的成品對生態不具毒性, 為防鳥等動物吞食, 注意回收。
持久性及降解性: 持久性
生物蓄積性: NA
土壤中之流動性: NA
其他不良反應: NA

十三.廢棄物處理:

本產品不屬於危害性廢棄物,須丟棄時可以委托回收再生處理

十四.運輸資料:

運送時產品不要直接與化學藥品接觸,保持乾燥, 並且要注意會有滑落發生.

十五.法規資料:

通常無法特定法令,但是必須遵守勞工安全衛生法勞工作業環境有害物質容許濃度標準.

十六.其他資料:

本MSDS內容資料應被所有使用,運送,儲存或使用於本產品之公司/人員
充份了解與接受,並其應用,加工.制程或管理與本產品有關之作業
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