

Test Report 測試報告

Applicant 申請廠商: Sharkoon Technologies GmbH
Siemensstrasse 38,
35440 Linden, Germany.

Number : TWNC00673179
報告號碼

Date 日期 : Sep 05, 2018

Sample Description 樣品敘述:

One (1) group of submitted samples said to be :

以下測試樣品乃供應商所提供及確認 :

Sample Description : SHARKOON 1337 RGB MOUSE MAT

樣品名稱

Date Sample Received : Feb 21, 2018

收件日期

Date Test Started : Feb 21, 2018

開始測試日期

Conclusion 結論:

<u>Tested Samples</u>	<u>Standard</u>	<u>Result</u>
測試樣品	標準	結果
Tested component of submitted samples	Restriction of Hazardous Substances (RoHS)	Pass
測試部位	危害物質限制	合格
	– As per applicant's request with reference to 2011/65/EU 依據客戶要求參考歐盟指令 2011/65/EU	

Remark 備註:

As requested by the applicant, only components shown in this report were tested for 2011/65/EU.
依據客戶要求，只有表列於報告中的部位有依照 2011/65/EU 作測試。

Authorized by:

On Behalf of Intertek Testing Services
Taiwan Limited



Matt Wang
Sr. Manager



Signed by:



Thomas Chou
Manager



Test Conducted 測試內容 :

XRF Screening Test

X 射線螢光光譜法篩檢測試

With reference to IEC 62321-3-1:2013, cadmium (Cd), lead (Pb), mercury (Hg), chromium (Cr) and bromine (Br) were measured by XRF spectroscopy. The further wet chemical tests will be conducted if necessary.

參考 IEC 62321-3-1:2013，以 X 射線螢光光譜法進行鎘(Cd), 鉛(Pb), 汞(Hg), 鉻(Cr)與溴(Br) 的含量篩檢測試。必要時會以化學測試進行確認。

Test Result Summary 測試結果:

	Tested Component 測試部位	XRF screening X 射線螢光光譜法篩檢測試 (ppm)		Chemical testing 化學測試 (ppm)		
		Element 元素	Result 結果	Cr ⁶⁺ 六價鉻	Pb/Cd/Hg 鉛/鎘/汞	PBBs/PBDEs 多溴聯苯/多溴聯苯醚
1	Black plastic case	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--	--	
		Br	ND		--	
2	Black plastic base	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--	--	
		Br	ND		--	
3	Black plastic button	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--	--	
		Br	ND		--	
4	Silvery metal screw	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	890	Negative		--
		Br	NA		--	
5	Black foam pad	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--	--	
		Br	ND		--	



Test Conducted 測試內容 :

	Tested Component 測試部位	XRF screening X 射線螢光光譜法篩檢測試 (ppm)		Chemical testing 化學測試 (ppm)		
		Element 元素	Result 結果	Cr ⁶⁺ 六價鉻	Pb/Cd/Hg 鉛/鎘/汞	PBBs/PBDEs 多溴聯苯/多溴 聯苯醚
6	Black fabric cover of pad	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		
		Br	435			PBBs: ND PBDEs: ND
7	White suture	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		
		Br	ND			-- --
8	Black suture	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		
		Br	ND			-- --
9	Black soft plastic patch	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		
		Br	ND			-- --
10	Chip - black molding part	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		
		Br	ND			-- --
11	Micro USB jack - silvery metal frame	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		
		Br	NA			-- --



Test Conducted 測試內容 :

	Tested Component 測試部位	XRF screening X 射線螢光光譜法篩檢測試 (ppm)		Chemical testing 化學測試 (ppm)		
		Element 元素	Result 結果	Cr ⁶⁺ 六價鉻	Pb/Cd/Hg 鉛/鎘/汞	PBBs/PBDEs 多溴聯苯/多溴 聯苯醚
12	Micro USB jack - silvery/golden metal pin	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		--
		Br	NA			--
13	Micro USB jack - blackish grey socket	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		--
		Br	ND			--
14	Transparent soft plastic stick	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		--
		Br	ND			--
15	Switch - silvery metal sheet	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		--
		Br	NA			--
16	Switch - off-white plastic part	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		--
		Br	ND			--
17	LED - transparent molding part	Cd	ND		--	
		Pb	ND		--	
		Hg	ND		--	
		Cr	ND	--		--
		Br	ND			--



Test Conducted 測試內容 :

- Remarks: ppm = Parts per million = mg/kg
備註 百萬分之一 = 毫克/公斤
- ND = Not detected and pass, the screened sample is found to be under detection limit of table II.
未檢測出且合格, 測試部位的結果低於表格 II 中的偵測極限
- NA = Not applicable 不適用
- = Not tested 未檢測
- Negative = A negative test result indicated positive observation was not found at the time of test.
When the spot test showed a negative result, the boiling water extraction procedure shall be used to verify the result.
A negative test result indicated positive observation was not found at the time of test.
此陰性結果顯示樣品在分析過程中無發現任何陽性現象的存在。若點測試的結果為陰性，應以沸水萃取法查證結果。
- As per applicant's request, the Chromium VI (Cr⁶⁺) content of metal material was conducted spot test only.
依據客戶要求，金屬材質的部位僅以點測試測量六價鉻含量。

Responsibility of Chemist 分析人員 : Pely Hsiao/ Vita Fu

Date Sample Received 樣品收件日期 : Feb 21, 2018

Test Period 樣品測試期間 : Feb 21, 2018 to Sep 04, 2018

Table I: XRF screening limits in mg/kg for regulated elements in various materials.

表格 I: X 射線螢光光譜法在不同材質中對不同元素的篩檢極限(mg/kg)

Element 元素	Polymer Materials 聚合物材質	Metallic Materials 金屬材質	Composite Materials 複合性材質
鎘 (Cd)	BL ≤ 70 < X < 130 ≤ OL	BL ≤ 70 < X < 130 ≤ OL	BL ≤ 70 < X < 150 ≤ OL
鉛 (Pb)	BL ≤ 700 < X < 1300 ≤ OL	BL ≤ 700 < X < 1300 ≤ OL	BL ≤ 500 < X < 1500 ≤ OL
汞 (Hg)	BL ≤ 700 < X < 1300 ≤ OL	BL ≤ 700 < X < 1300 ≤ OL	BL ≤ 500 < X < 1500 ≤ OL
鉻 (Cr)	BL ≤ 700 < X	BL ≤ 700 < X	BL ≤ 500 < X
溴 (Br)	BL ≤ 300 < X	Not Applicable 不適用	BL ≤ 250 < X

- Remarks: mg/kg = Milligram per kilogram = ppm
備註 百萬分之一 = 毫克/公斤
- BL = Below Limit
低於極限
- X = Inconclusive result
不確定的結果
- OL = Over Limit
高於極限



Test Conducted 測試內容 :

Table II: Estimated detection limits in mg/kg for regulated elements in various matrices.

表格 II: 不同元素在不同材質中的偵測極限(mg/kg)

Element 元素	Polymer Materials 聚合物材質	Metallic Materials 金屬材質	Composite Materials 複合性材質
鎘 (Cd)	50	70	70
鉛 (Pb)	100	200	200
汞 (Hg)	100	200	200
鉻 (Cr)	100	200	200
溴 (Br)	200	Not Applicable 不適用	200

Disclaimers 聲明:

The numerical test data of this XRF screening report is for reference purposes only due to the data variation incurred from various factors as described in next paragraph. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

此 XRF 篩檢報告僅作為參考之用，因測試結果會受到多種因素的影響，細節於下個段落中說明。

申請者應自行評估本報告中所提供的資訊是否符合其申請目的。

The results shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

X 射線螢光光譜法篩檢的結果會受到很多因素影響，包含但不限於樣品的大小,厚度,面積,表面平整度,設備參數,與基質效應(舉例:塑膠,橡膠,金屬,陶瓷等)，需要進一步的化學前處理及相對應的化學分析設備以得到定量的數據。

Chemical Test Method 化學測試方法

Test Item 測試項目	Test Method 測試方法	Reporting Limit 報告極限
Chromium VI (Cr ⁶⁺) Content 六價鉻含量 (for metal)	With reference to IEC 62321: 2008, by spot test. 參考 IEC 62321:2008 第一版附錄 B，以點測試法分析。	1 ppm
Polybrominated Biphenyls (PBBs) 多溴聯苯	With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. 參考 IEC 62321-6: 2015，以溶劑萃取並用氣相層析質譜儀分析，必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。	5 ppm
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	With reference to IEC 62321-6: 2015, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary. 參考 IEC 62321-6: 2015，以溶劑萃取並用氣相層析質譜儀分析，必要時會以高效液相層析儀光二極體陣列偵測儀進行確認。	5 ppm

Remark 備註: Reporting Limit = Quantitation limit of analyte in sample 測試樣品之定量偵測極限



Test Conducted 測試內容 :

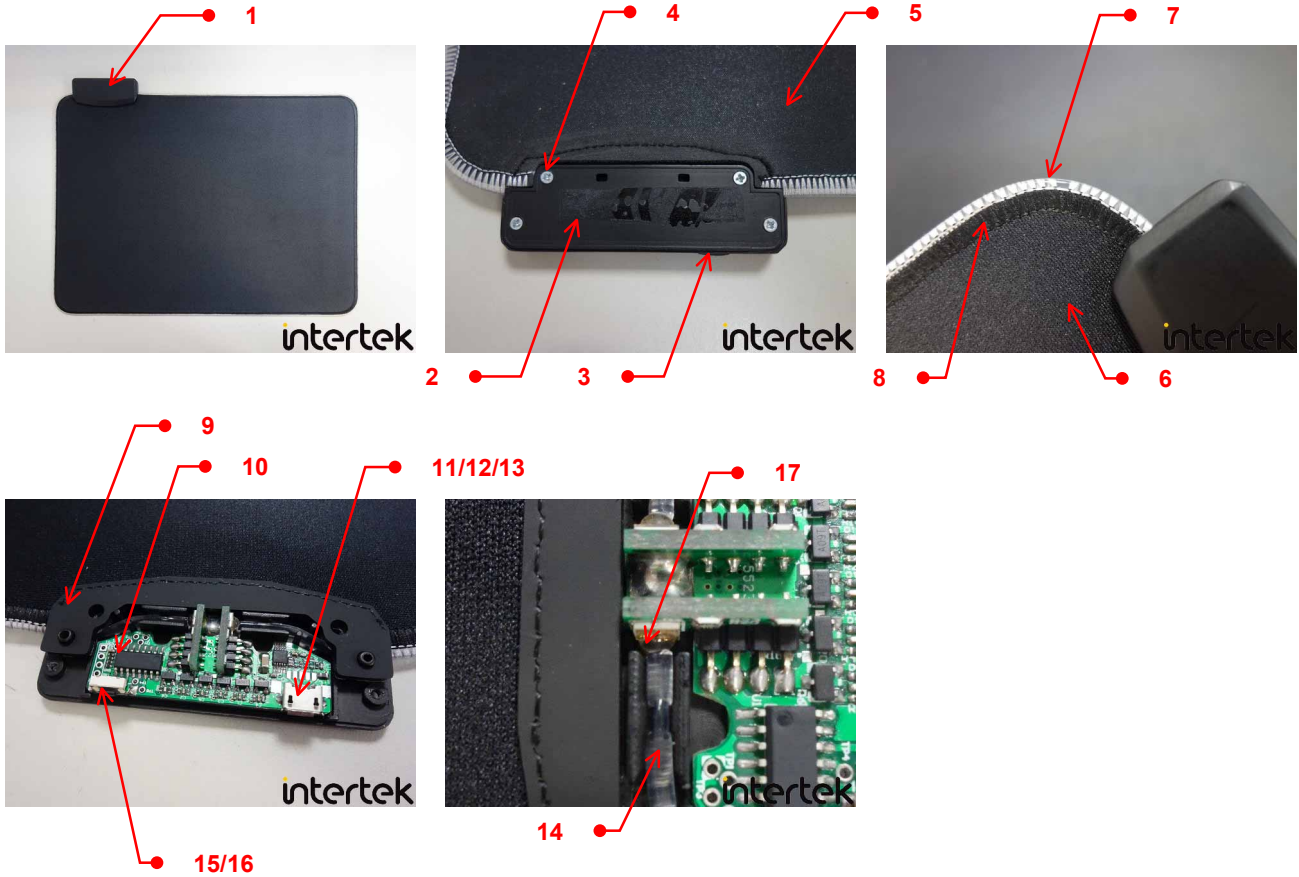
RoHS Limit RoHS 限值

Restricted Substances 限用物質	Limits 限值
Cadmium (Cd) content 鎘含量	0.01% (100ppm)
Lead (Pb) content 鉛含量	0.1% (1000ppm)
Mercury (Hg) content 汞含量	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) content 六價鉻含量	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs) 多溴聯苯	0.1% (1000ppm)
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	0.1% (1000ppm)

The limits were quoted from Annex II of 2011/65/EU for homogeneous material.

本限值是依據歐盟指令 2011/65/EU 附錄二針對均質材質所訂定。





End of Report

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