



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 1 of 20	文件編號: IS-P-009	版本: <b>02</b>
---------------------	----------------	-------------------	------------------

制訂部門: 廠務環工部	制訂日期: 06-23-10	生效日期: 06-30-10	頁數: 20
----------------	-------------------	-------------------	-----------

## 文件變更記錄

版本	頁數	生效日期	變更依據	變更內容
01 <b>02</b>	ALL <b>13</b> <b>14</b>	06-30-10	1-IS-1006291-E	增加 4.8 定義說明。 修改 6.3 程序內容。

\_\_\_\_\_  
吳俊賢  
(制訂者)

\_\_\_\_\_  
馬佳廷  
(審核者)

\_\_\_\_\_  
王青華  
(核准者)



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 2 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

## 1.0 目的：

規劃管理環境危害物質管理相關流程，配合品質管理系統運作，以確保產品之環境危害物質含量符合本公司客戶及法令、法規之要求。

## 2.0 範圍：

本所屬公司生產/銷售之產品及其所組成/使用之原物料與包裝材。

## 3.0 權責：

### 3.1 總經理：

3.1.1 重大不符合事件之裁決。

### 3.2 資材單位：

3.2.1 要求供應商簽署「環境危害物質不使用證明書」。

3.2.2 要求供應商提供產品中符合ROHS或SVHC要求之檢測報告及MSDS。

### 3.3 環安單位：

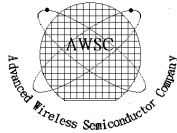
3.3.1 供應商提供之MSDS 登錄。

## 4.0 定義：

4.1 環境危害物質：法令或客戶指定會對環境造成危害的物質。

4.2 ROHS：Restriction of the Use Hazardous Substance 歐盟電子資訊產品禁/限用物質的專有名詞，因法規眾多，本公司優先遵循ROHS指令的要求，如客戶有其他要求時，則依客戶要求，做專案處理。

4.3 SVHC：高度關切物質 (Substance of Very High Concern, SVHC)，REACH 規範，**成品**製造商和進口商首要之急在於作好供應鏈之間化學品資



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 3 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

訊的溝通工作。若成品中含有符合第57條規定以及依照第59(1)條規定列出的高度關切物質，且其濃度超過0.1% w/w (按重量比)者，則製造商至少應提供該物質的名稱或更充份的資訊予供應商，以確保消費者的使用安全。

4.4 GP：綠色產品(Green Product)，指產品之物質成份符合本程序規定之禁/限用要求。

4.5 MSDS：Material Safety Data Sheet 物質安全資料表，記錄化學品之名稱、成份及其他環安衛注意事項之資料表。

#### 4.6 環境管理物質

表 4-1 列出本公司禁用或限用物質(A 級管理物質)，表 5-2 則為觀察物質(B 級管理物質)。供應商需在部品承認對此規範之符合情形。

**Table 4-1 Environmental Related Substances to be Banned or Restricted (Class A)**

表 4-1 禁用或限用物質(A 級管理物質)一覽表

Substance Name 物質名稱	Controlled Uses 控管範圍	Threshold Limit 限制值
Cadmium and Cadmium Compounds (Cd) 鎘及鎘的化合物	Level 1: All applications except those specified in exemptions 除排除條款外的所有用途 <sup>(*)</sup>	1. 50ppm for metals containing zinc (e.g. brass, hot dip galvanizing, etc.) 2. others: 5ppm
Hexavalent Chromium Compounds (Cr <sup>6+</sup> ) 六價鉻	Level 1: All applications 所有用途	Prohibited 禁止使用
Lead and Lead Compounds (Pb) 鉛及鉛的化合物	Level 1: All applications except those specified in exemptions 除排除條款外的所有用途 <sup>(*)</sup>	1. 800ppm for solders 2. others: 50ppm
Mercury and Mercury Compounds (Hg) 汞及汞的化合物	Level 1: All applications except those specified in exemptions 除排除條款外的所有用途 <sup>(*)</sup>	Prohibited 禁止使用
Polybrominated Biphenyls (PBBs) 多溴聯苯	Level 1: All applications 所有用途	Prohibited 禁止使用
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	Level 1: All applications 所有用途	Prohibited 禁止使用
Tributyl Tin Oxide (TBTO) 三丁基錫氧化物	Level 1: All applications 所有用途	Prohibited 禁止使用
Tributyl Tins and Triphenyl Tins Compounds 三丁基錫類 及 三苯基錫類	Level 1: All applications 所有用途	Prohibited 禁止使用
Bis (tributyltin) oxide 雙三丁基錫氧化物	Level 1: All applications 所有用途	Prohibited 禁止使用

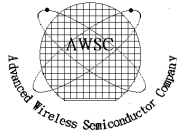


# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 4 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

Substance Name 物質名稱	Controlled Uses 控管範圍	Threshold Limit 限制值
有機錫化合物(三丁基錫及三苯基錫除外) Organic Tin compounds (excluding Tributyl and triphenyl tin compounds)	Level 1: All applications 所有用途	1000ppm
Ozone Depleting Substances <sup>(*)2</sup> 臭氧層破壞物質 <sup>(*)2</sup>	Level 1: All applications 所有用途	Prohibited 禁止使用
Polychlorinated Naphthalenes (PCN) 多氯化萘	Level 1: All applications 所有用途	Prohibited 禁止使用
Short Chain Chlorinated Paraffins (C10-13)(SCCP) 短鏈氯化石蠟	Level 1: All applications 所有用途	Prohibited 禁止使用
Polychlorinated Biphenyls (PCB) 多氯聯苯	Level 1: All applications 所有用途	Prohibited 禁止使用
Polychlorinated Terphenyls (PCTs) 多氯三聯苯	Level 1: All applications 所有用途	Prohibited 禁止使用
Polyvinyl Chloride (PVC) and PVC Blends 聚氯乙烯	Level 1: All applications except level 3 usage 除3級外的所有用途 Level 3: Power supply cords and Accessory Cables, such as D-Sub cables, audio cables 電源線, 附件線材如 D-Sub, 以及音源線	Prohibited 禁止使用
Hexachlorobenzene 六氯苯	Level 1: All applications 所有用途	Prohibited 禁止使用
Asbestos 石棉	Level 1: All applications 所有用途	Prohibited 禁止使用
Radioactive Substances 放射性物質	Level 1: All applications 所有用途	Prohibited 禁止使用
Azo Compounds 偶氮化合物	Level 1: Parts come into direct and continuous contact with human skin 人體持續接觸部位 Level 3: Parts that do not come into contact with human skin 人體不會持續接觸部位	Prohibited 禁止使用
Mirex 滅蟻靈	Level 1: All applications 所有用途	Prohibited 禁止使用
Formaldehyde 甲醛	Level 1: All applications 所有用途	Prohibited 禁止使用
Halogenated dioxins and furans 鹵化戴奧辛及呋喃	Level 1: All applications 所有用途	Prohibited 禁止使用
Benzene 苯	Level 1: All applications 所有用途	Prohibited 禁止使用
DDT 滴滴涕	Level 1: All applications 所有用途	Prohibited 禁止使用
Aldrin 阿特靈	Level 1: All applications 所有用途	Prohibited 禁止使用
Endrin 安特靈	Level 1: All applications 所有用途	Prohibited 禁止使用
Dieldrin 地特靈	Level 1: All applications 所有用途	Prohibited 禁止使用
Bis(chloromethyl) Ether 二氯甲醚	Level 1: All applications 所有用途	Prohibited 禁止使用
Toxaphene 毒殺芬	Level 1: All applications 所有用途	Prohibited 禁止使用

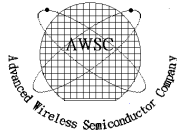


# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 5 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

Substance Name 物質名稱	Controlled Uses 控管範圍	Threshold Limit 限制值
Specified Amines <sup>(#3)</sup> 特定胺類 <sup>(#3)</sup>	Level 1: All applications 所有用途	Prohibited 禁止使用
Chlordanes 氯丹	Level 1: All applications 所有用途	Prohibited 禁止使用
N,N'-ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylenediamine, and N,N'-dixylyl-p-phenylenediamine 苯二胺類	Level 1: All applications 所有用途	Prohibited 禁止使用
2,4,6-tri-tert-butylphenol 2,4,6-第三丁酚	Level 1: All applications 所有用途	Prohibited 禁止使用
Yellow Phosphorus 黃磷	Level 1: All applications 所有用途	Prohibited 禁止使用
4-nitrodiphenyl and its salts 4-硝基聯苯及其鹽類	Level 1: All applications 所有用途	Prohibited 禁止使用
Arsenic and Arsenic Compounds (As) 砷及砷的化合物	Level 1: Paints, inks, preservatives, fungicides 塗料、油墨、防腐劑、殺 菌劑 Level 3: All applications except level 1 usage 除1級以外之用途	25ppm
Beryllium oxide 氧化鈹	Level 1: All applications 所有用途	Prohibited 禁止使用
Beryllium copper 鈹青銅	Level 3: All applications 所有用途	Prohibited 禁止使用
Nickel and Nickel Compounds (Ni) 鎳及鎳的化合物	Level 1: Organic nickel and Skin contact 有機鎳以及人體接觸部位 Level 3: All applications except level 1 usage 除1級以外之用途	Skin contact: 0.2 µg/cm <sup>2</sup> /week
Polybrominated diphenyl oxide (PBDO) Polybrominated biphenyl oxide (PBBO) 聚溴二苯基氧化物 及 聚溴聯苯氧化物	Level 1: All applications 所有用途	Prohibited 禁止使用
Halogenated benzenes 鹵化苯化合物	Level 1: All applications 所有用途	Prohibited 禁止使用
Halogenated diarylalkanes 鹵化雙環烷類	Level 1: All applications 所有用途	Prohibited 禁止使用
Hexachlorobutadiene 六氯丁二烯	Level 1: All applications 所有用途	Prohibited 禁止使用
Hexachlorocyclohexane isomers (HCH) 六氯環己烷	Level 1: All applications 所有用途	Prohibited 禁止使用
Pentachlorophenol (PCP) and its salts and esters 五氯酚	Level 1: All applications 所有用途	Prohibited 禁止使用
Tri-(2,3-dibromo-propyl) phosphate 三(2,3-二溴丙基)-磷酸酯	Level 1: All applications 所有用途	Prohibited 禁止使用
Chlorophenols 氯酚	Level 1: All applications 所有用途	Prohibited 禁止使用
4,4'-Methylenebis(2-chloroaniline) 4,4'-亞甲雙(2-氯苯胺)	Level 1: All applications 所有用途	Prohibited 禁止使用
Medium Chain Chlorinated Paraffins (C14-17)(MCCP) 中鏈氯化石蠟	Level 1: All applications 所有用途	Prohibited 禁止使用
Hexabromocyclododecane (HBCD) 六溴環十二烷	Level 1: All applications 所有用途	Prohibited 禁止使用

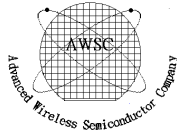


# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 6 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

Substance Name 物質名稱	Controlled Uses 控管範圍	Threshold Limit 限制值
Tetrabromobisphenol A (TBBPA) 四溴丙二酚	Level 1: All applications except level 3 usage 除3級以外之用途 Level 3: electronic components, connectors and printed circuit boards, and cables (Power supply cords and Accessory Cables, such as D-Sub cables, audio cables) 電子零件、連接器、印刷電路板以及線材(電源線, 附件線材如 D-Sub, 以及音源線)	Prohibited 禁止使用
Brominated Flame Retardants (BFRs)(excluding PBBs, PBDEs, HBCD, TBBPA) 溴化耐燃劑(多溴聯苯, 多溴聯苯醚, 六溴環十二烷, 四溴丙二酚以外之溴化耐燃劑)	Level 1: All applications except level 3 usage 除3級以外之用途 Level 3: electronic components, connectors and printed circuit boards, and cables (Power supply cords and Accessory Cables, such as D-Sub cables, audio cables) 電子零件、連接器、印刷電路板以及線材(電源線, 附件線材如 D-Sub, 以及音源線)	Prohibited 禁止使用
Triclosan 三氯沙	Level 1: All applications 所有用途	Prohibited 禁止使用
Chlorinated Hydrocarbons <sup>(*4)</sup> 氯化烴 <sup>(*4)</sup>	Level 1: All applications 所有用途	1000 ppm
Halogenated Diphenyl Methanes <sup>(*5)</sup> 鹵化聯苯醚 <sup>(*5)</sup>	Level 1: All applications 所有用途	Prohibited 禁止使用
Perfluorooctane sulfonates(PFOS) 全氟辛烷磺酸	Level 1: All applications except those specified in exemptions 除排除條款外的所有用途 <sup>(*1)</sup>	Prohibited 禁止使用
Poly fluorocarbon (PFC) 全氟化碳	Level 1: All applications 所有用途	Prohibited 禁止使用
Alkylphenols 烷基酚	Level 1: All applications 所有用途	Prohibited 禁止使用
Ethylene oxide 環氧乙烷	Level 1: All applications 所有用途	Prohibited 禁止使用
Kelthane 三氯殺醇	Level 1: All applications 所有用途	Prohibited 禁止使用
all synthetic musks (including Musk ketone and Musk xylene) 所有合成麝香(包含酮麝香及二甲苯麝香)	Level 1: All applications 所有用途	Prohibited 禁止使用
Nonylphenol / ethoxylates (NP/NPEs) and related substances 壬基酚與壬基酚聚氧乙烯醚及相關物質	Level 1: All applications 所有用途	Prohibited 禁止使用
Specific Phthalates <sup>(*6)</sup> 特定鄰苯二甲酸鹽 <sup>(*6)</sup>	Level 3: All applications 所有用途	Prohibited 禁止使用
Phthalate esters 鄰苯二甲酸脂類化合物	Level 1: All applications 所有用途	Prohibited 禁止使用
Aliphatic CHCs 脂肪族氯碳氫化合物	Level 1: All applications 所有用途	Prohibited 禁止使用
2-(3',5'-Di-tert-butyl-2'-hydroxyphenyl)- 特定苯并三氮唑	Level 1: All applications 所有用途	Prohibited 禁止使用
2-benzotriazol-2-yl-4,6-ditert-butyl-phenol 麥角二乙胺	Level 1: All applications 所有用途	Prohibited 禁止使用
Polycyclic aromatic hydrocarbons (PAHs) 多環芳香烴化合物	Level 1: All applications 所有用途	Prohibited 禁止使用



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 7 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

Substance Name 物質名稱	Controlled Uses 控管範圍	Threshold Limit 限制值
Bisphenol A (BPA) 雙酚 A	Level 1: All applications 所有用途	25ppm
Dimethylfumarate(DMFU) 富馬酸二甲酯	Level 1: All applications 所有用途	Prohibited 禁止使用
Surfactants 介面活性劑 DTDMAC (CAS No. 68783-78-8) DODMAC/DSDMAC (CAS No.107-64-2) DHTDMAC (CAS No.61789-80-8)	Level 1: All applications 所有用途	Prohibited 禁止使用
Brominated Flame Retardants (BFRs) 溴化耐燃劑	Level 1: All applications 所有用途	1000 ppm
Chlorinated Flame Retardants (CFRs) 氯化耐燃劑	Level 1: All applications 所有用途	1000 ppm
Other Brominated Organic Compounds 其他有機溴化物	Level 3: All applications 所有用途	1000 ppm
Other Chlorinated Organic Compounds 其他有機氯化物	Level 3: All applications 所有用途	1000 ppm
Bromine 總溴	Level 1: All applications 所有用途	1. 900 ppm 2. 700 ppm [ ignali,三星]
Chlorine 總氯	Level 1: All applications 所有用途	1. 900 ppm 2. 700 ppm [ ignali,三星]
Total Bromine and Chlorine 總溴與總氯	Level 1: All applications 所有用途	1500 ppm

\*1: 排除條款請見表 4-3。

\*1: Exemptions please refer to Table 4-3.

\*2: 物質清單請見附表 1。

\*2: See Attached Table 1 for specific substances belonging to these categories.

\*3: 物質清單請見附表 2。

\*3: See Attached Table 2 for specific substances belonging to these categories.

\*4: 物質清單請見附表 3。

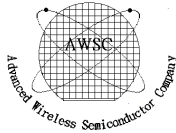
\*4: See Attached Table 3 for specific substances belonging to these categories.

\*5: 物質清單請見附表 4。

\*5: See Attached Table 4 for specific substances belonging to these categories.

\*6: 物質清單請見附表 5。

\*6: See Attached Table 5 for specific substances belonging to these categories.



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 8 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

**Table 4-2 Environmental Related Substances to be Monitored (Class B)**

表 4-2 觀察物質(B 級管理物質)一覽表

Substance Name 物質名稱
Antimony and Antimony Compounds (Sb) 銻及銻的化合物
Beryllium and Beryllium Compounds (Be) 鈹及鈹的化合物
Bismuth and Bismuth Compounds (Bi) 鉍及鉍的化合物
Selenium and Selenium Compounds (Se) 硒及硒的化合物
Magnesium (Mg) 鎂
Cobalt and Cobalt compounds (Co) 鈷及鈷的化合物
Tellurium and Tellurium compounds (Te) 碲及碲的化合物
Thallium and Thallium compounds (Tl) 鉈及鉈的化合物
Barium and Barium Compounds (Ba) 鋇及鋇的化合物
Boron and Boron Compounds (B) 硼及硼的化合物
Chromium and Chromium Compounds (Cr) 鉻及鉻的化合物
Indium and Indium Compounds (In) 銦及銦的化合物
Manganese and Manganese Compounds (Mn) 錳及錳的化合物
Molybdenum and Molybdenum Compounds (Mo) 鉬及鉬的化合物
Zinc and Zinc Compounds (Zn) 鋅及鋅的化合物
Vanadium and Vanadium Compounds (V) 釩及釩的化合物
Copper and Copper Compounds (Cu) 銅及銅的化合物
Gold and Gold Compounds (Au) 金及金的化合物
Palladium and Palladium Compounds (Pd) 鈀及鈀的化合物
Silver and Silver Compounds (Ag) 銀及銀的化合物
Nickel and Nickel Compounds (Ni) 鎳及鎳的化合物

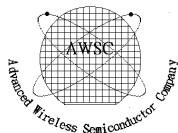


# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 9 of 20	文件編號: IS-P-009	版本: 02
---------------------	----------------	-------------------	-----------

Substance Name 物質名稱
Brominated Flame Retardants 溴化耐燃劑
Fluorine and its Compounds(F) 氟及氟的化合物
Cyanides 氰化物
Ethylene acetate (EA) 乙酸乙酯
Sulfur hexafluoride 六氟化硫
Nitrosoamides 亞硝基醯胺
Tris(2-ethylhexyl) Phosphate 三(2-乙基己基)磷酸酯
Di-2-ethylhexyl adipate 己二酸二辛酯
Toluene / Methylbenzene 甲苯
Perfluorooctyl acid (PFOA) and individual salt and esters of PFOA 全氟辛烷酸及其鹽類與酯類
Xylene 二甲苯
4-Nitrobiphenyl and its salt 4-硝基二苯胺及其鹽類
鹵化萘
Triphenyl Phosphate (TPT) 磷酸三苯脂



# 宏捷科技股份有限公司

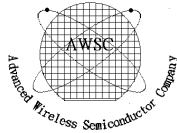
Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 10 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

**Table 4-3 List of Exemption Items**

表 4-3 排除條款一覽表

Substance Name 物質名稱	Exemptions 排除條款
Mercury and Mercury Compounds 汞及汞的化合物	Mercury in compact fluorescent lamps not exceeding 5 mg per lamp. 小型螢光燈泡其重金屬汞含量不得超過 5mg/每支
Lead and Lead Compounds 鉛及鉛的化合物	Lead in glass of cathode ray tubes, electronic components and fluorescent tubes. 鉛用於陰極射線管、電子零件及螢光燈管的玻璃
	Lead as an alloying element in steel containing up to 0.35 % lead by weight. 使用於鋼材中的鉛含量最高為 0.35%
	Lead as an alloying element in aluminium containing up to 0.4 % lead by weight. 使用於鋁材中含鉛量最高為 0.4%
	Lead as an alloying element in copper containing up to 4 % lead by weight. 銅合金中含鉛量最高為 4%
	Lead in electronic ceramic parts (e.g. piezoelectronic devices). 電子陶瓷產品中的鉛 (例如：壓電裝置)
	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead). 高溫融化的焊料中的鉛 (例如，以鉛基底之合金中包含 85% 或更多的鉛)
	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission as well as network management for telecommunications. 通訊用伺服器、貯存和貯存陣列系統、開關、發信號、傳輸，以及網路管理的網路結構設備所用焊料中的鉛
	Lead used in compliant pin connector systems. 插腳式連接器系統中的鉛
	Lead as a coating material for the thermal conduction module c-ring. 熱導模組 C 環上的塗層材料的鉛
	Lead in optical and filter glass. 光學玻璃和濾光玻璃中的鉛
Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight. 鉛含量在 80% 到 85% 之間、連接插腳與微處理器封裝的含兩個元素以上的焊料中的鉛	
Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated. 用於電氣連接半導體模與整合電路晶片封裝使用焊料中的鉛	



# 宏捷科技股份有限公司

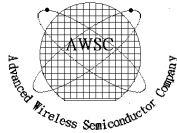
Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 11 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

Substance Name 物質名稱	Exemptions 排除條款
Cadmium and Cadmium Compounds 鎘及鎘的化合物	Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations. 根據修改關於限制特定危險物質和預製品銷售和使用的第76/769/EEC 號指令的第 91/338/EEC 號指令禁止以外的電觸點中的鎘及其化合物和鎘電鍍
	Cadmium in optical and filter glass. 光學玻璃和濾光玻璃中的鎘
Perfluorooctane sulfonates(PFOS) 全氟辛烷磺酸	Photoresists or anti reflective coatings for photolithography processes. 光刻工藝採用的光刻膠或防止反射用的塗布劑
	Photographic coatings applied to films, papers, or printing plates. 用於薄膜、紙、印刷版材中的照片用塗布劑

#### 4.7 有關包裝材料的規定

- 1) 包裝材料指的是於儲存及運送過程中，用以保護、裝卸及標示 AWSC 產品所使用之材料。  
(例如紙箱、緩衝材料、塑膠袋、膠帶、標籤和黏著劑等，同時也包含標示所使用的墨水和染料等。)
- 2) 供應商需確保所交付的產品中，其所附屬之包裝材料符合表4-4所列之管制物質與其管限制值要求，並送交第三公正單位進行檢測。



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 12 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

**Table 4-4 Packaging Content Restrictions**

表 4-4 有關包裝材料的規定

Classification 物質分類	Substances 物質名稱	Threshold Limit 限值 (mg/kg=ppm)
Heavy Metals 重金屬	Lead, Cadmium, Mercury, Hexavalent Chromium and Compounds 鉛、鎘、汞、六價鉻	Less than 100 (sum of concentrations) 小於 100 (含量總和)
	Cadmium 鎘	<b>Less than 5</b>  小於 5
Substances Depleting the Ozone Layer 臭氧層破壞物質	See Attached Table 1 請見附表 1	<b>No Use</b>  禁止使用
Others 其他	Halogenated Plastics or Polymers (ex: PVC) 鹵化塑膠或聚合物(如 PVC)	Not Present 不使用
	Expanded polystyrene (EPS) foam* 發泡聚苯乙烯*	Not Present 不使用
	Colbalt Dichloride 二氯化鈷	<b>No Use</b>  禁止使用

### South Korea Expanded Polystyrene (EPS) Packaging Restrictions

**Effective January 1, 2004, all finished electronic products that require the South Korean eK safety mark and are under 20,000 cubic centimeters in packaging volume size (about 10.5 inches square), cannot be packaged in EPS material. This EPS restriction will expand to cover larger packaged products as indicated below:**

- On January 1, 2006 the packaging volume size increases to cover any product containing packaging under 30,000 cubic centimeters
- On January 1, 2008 the packaging volume size increases to cover any product containing packaging under 40,000 cubic centimeters
  - 1) EPS and any packaging containing EPS (ie. ARCEL) are included in this restriction.
  - 2) Currently, the South Korean eK mark applies to projectors, speakers, printers, CRT displays, wall mount power adapters and AC adapters. The eK mark does not currently apply to laptops, desktop computers, flat panel displays, PDA's, or server products. For more information on the eK mark please see the Korea Electric Testing Institute website at <http://www.keeti.re.kr/eng/default.htm>



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 13 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

## 4.8 SONY SS-00259 :

SONY公司對於構成該公司電子產品的零部件和元件等中含有的環境管理物質之(1)禁止使用物質、(2)計畫全廢物質、(3)適用物件外專案，以防止這些物質混入SONY電子產品中，同時實現遵守法令、保護地球環境以及減輕對生態系統的影響等的目的。相關最新資料查詢網址為：<http://www.sony.net/SonyInfo/procurementinfo/ss00259/index.html>

## 5.0 相關文件：

- 5.1 採購程序(AA-P-002)
- 5.2 供應商評估規範(AA-S-007)
- 5.3 法規管制規範(IS-S-007)
- 5.4 變更管理規範(QA-S-004)

## 6.0 程序：

### 6.1 各階段供應商所需提送之文件及文件有效期限之規範:

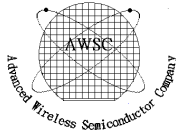
#### 6.1.1 原物料承認階段，供應商需提送之相關資料：

6.1.1.1 供應商應該詳細閱讀本程序各項規定，確認所有供應給AWSC的部品皆符合本管理規定之要求。

6.1.1.2 化驗報告:供應商應提出化驗報告以證明供應原物料中無添加AWSC規定的禁用物質。各類部品依據其組成材質不同，所要求的化驗項目如下：

6.1.1.2.1 金屬、玻璃及陶瓷材料：鉛，鎘，汞，六價鉻。

6.1.1.2.2 Ink 與紙類材料：鉛，鎘，汞，六價鉻，PBBs，PBDEs，Cl，Br。



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 14 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

6.1.1.2.3 塑膠類材料：鉛，鎘，汞，六價鉻，PBBs，PBDEs，Cl，Br，PVC<sup>\*Note 1</sup>。

6.1.1.2.4 其他材料：鉛，鎘，汞，六價鉻，PBBs，PBDEs，Cl，Br。

\*Note 1: 若供應商可以提出供應部品中不含有 PVC 的證明〔例如物質安全資料表 M.S.D.S.或不使用證明書〕，則供應商可以不提供 PVC 的化驗報告。

6.1.1.2.5 包裝材料：鉛，鎘，汞，六價鉻，Cl，Br，PBBs，PBDEs。此外塑膠材需加驗PVC。禁用物質化驗必須於合格的實驗室中進行，有關實驗室的資格規定、部品拆解原則要求。

## 6.1.1.3 物質安全資料表(M.S.D.S)：

送審之M.S.D.S.文件，文件製版日期應距送審日期2.5年內，並將所供應部品的組成材料及添加劑的化學成分，化學文摘社登記號碼〔CAS no.〕及其在部品中的含量〔重量百分比〕填寫於表中，物質安全資料表格式請依照ISO 11014-1標準規範或國內勞工安全衛生法規M.S.D.S格式要求。

## 6.1.2 量產階段：

供應商及外包商應確認並保證量產時所供應之部品與樣品承認時完全相同，任何量產品生產條件的變更應依據6.1.3『變更管理』的規定事先提出申請。

6.1.3 變更管理：依據”變更管理規範(QA-S-004)”辦理。

## 6.2 商業機密保護：

所有供應商提供之資料只有兩種用途，一為供給AWSC內部人員判定該材料，零件或組件是否符合本程序規範，二為當AWSC的客戶要求



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 15 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

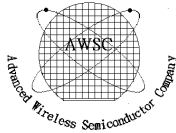
提供該材料、零件或組件之相關資料時。

- 6.3 本管理規範中未明確規定的物質或其用途，如果當地或國家法規及法令禁止使用，則必須照其規定執行。另外，若與客戶(如 SONY SS-00259 規範)的環境管理物質規定有更嚴格的要求時，則以客戶之環境管理物質規定為基準。當客戶有特殊要求時，亦應依據客戶要求執行。依 Sony 之 SOP 編號 SRE-06-010 規範之特定原物料等，只能向 Sony Green Partner 資格之供應商購買。AWSC 之供應商亦只能向 Sony Green Partner 資格之供應商購買。

Other materials without specified in this SOP will be regulated according to the local laws and regulations. If there is a special request from the customers ( like Sony's SOP # SRE-06-010 ), AWSC should follow and meet customer's requests and requirements.

The Designated Raw Materials as defined in Sony's SOP # SRE-06-010 must be purchased ONLY from the valid Sony Green Partner suppliers. The suppliers of AWSC also must purchase the Designated Raw Materials ONLY from the valid Sony Green Partner suppliers.

7.0 使用表單：



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 16 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

## Attached Table 1 List of Ozone Layer Depleting Substances

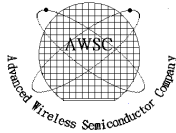
附表 1 臭氧層破壞物質

Specific substances
Chlorofluorocarbons (CFCs)
Hydrochlorofluorocarbons (HCFCs)
Halons
1,1,1-Trichloroethane
Bromochloromethane
Carbon Tetrachloride
Methyl Bromide
Hydrobromofluorocarbons (HBFCs)
Hydrofluorocarbon (HFCs)
Chlorobromomethane

## Attached Table 2 List of Specified Amines

附表 2 特定胺化物質

Specific substances	CAS No.
4-aminodiphenyl	92-67-1
Benzidine	92-87-5
4-Chloro-o-toluidine	95-69-2
2-Naphthylamine	91-59-8
o-Aminoazotoluene	97-56-3
2-amino-4-nitrotoluene	99-55-8
p-Chloroaniline	106-47-8
2,4-diaminoanisole	615-05-4
4,4'-diaminodiphenylmethane	101-77-9
3,3'-Dichlorobenzidine	91-94-1
3,3'-Dimethoxybenzidine	119-90-4
3,3'-Dimethylbenzidine	119-93-7
3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0
p-cresidine	120-71-8



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 17 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

4,4'-methylene-bis-(2-chloroaniline)	101-14-4
4,4'-oxideaniline	101-80-4
4,4'-Thiodianiline	139-65-1
o-Toluidine	95-53-4
2,4-Toluylenediamine	95-80-7
2,4,5-Trimethylaniline	137-17-7
o-Anisidine	90-04-0
4-Aminoazobenzene	60-09-3

### Attached Table 3 List of specific Chlorinated Hydrocarbons

附表 3 特定氯化烴物質

Specific Substances	CAS No.
1,1,2,2 Tetrachloroethane	79-34-5
1,1,1,2 Tetrachloroethane	630-20-6
Pentachloroethane	76-01-7
Trichloromethane / Chloroform	67-66-3
Dichloroethane	1300-21-6
1,2 Dichloroethane	107-06-2
1,1 Dichloroethylene	75-35-4
1,2 Dichloroethylene	540-59-0
cis-1,2 Dichloroethylene	156-59-2
1,1,2 Trichloroethane	79-00-5
Methylenechloride or Dichloromethane	75-09-2
Tetrachloroethylene	127-18-4
Trichloroethylene	79-01-6
1,3 Dichloropropene	542-75-6

### Attached Table 4 List of specific Halogenated Diphenyl Methanes

附表 4 特定鹵化聯苯醚物質

Specific Substances	CAS No.
Monomethyl tetrachlorodiphenyl methane (Ugilec 141) 單甲基四氯二苯基甲烷	76253-60-6
Monomethyl dichlorodiphenyl methane (Ugilec 121 or Ugilec 21) 單甲基二氯二苯基甲烷	81161-70-8
Monomethyl dibromodiphenyl methane (DBBT) 單甲基二溴二苯基甲烷	99788-47-8



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 18 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

## Attached Table 5 List of specific Phthalates

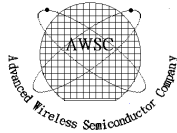
附表 5 特定鄰苯二甲酸酯類

Specific Substances	CAS No.	Abbreviation	備註
Di-iso-nonyl phthalate	28553-12-0	DINP	
Di-n-octyl phthalate	117-84-0	DNOP	
Di(2-ethylhexyl)-phthalate	117-81-7	DEHP	
Diisodecyl phthalate	26761-40-0	DIDP	
Butylbenzyl phthalate	85-68-7	BBP	
Dibutyl phthalate	84-74-2	DBP	
Di-n-hexyl phthalate	84-75-3	DNHP	
Bis(2-methoxyethyl) phthalate	117-82-8	-	

## Attached Table 6 List of Related Laws and Regulations

附表 6 相關法律法規一覽表

Restricted Substance	Legal Reference
Asbestos and its compounds	EU: Directive 76/769/EEC Japan: Industrial Safety and Health Law, Air Pollution Control Law, Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
Azo dyes/colorants	EU: Directive 76/769/EEC
Aldrin	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Benzene	Japan: Industrial Safety and Health Law
Bis(chloromethyl)ether	Japan: Industrial Safety and Health Law
Organic Tin compounds	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Cadmium and its compounds	EU: Directive 91/338 EEC (adds to 76/769/EEC), Directive 94/62/EEC, 2002/95/EC RoHS Directive US : Model Toxics in Packaging Japan: Industrial Safety and Health Law, Air Pollution Control Law, Water Pollution Control Law, Waste Management (Disposal) and Public Cleansing Law, Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and

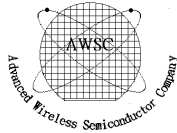


# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 19 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

Restricted Substance	Legal Reference
	Promoting Improvements in Their Management
Chlordanes	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Chlorofluorocarbons (CFCs)	Montreal Protocol US: 1990 Clean Air Act EU: Directive 76/769/EEC
Chloroparaffins, shortchained (10-13 carbon chain)	EU: Directive 76/769/EEC
Chromium VI and its compounds	EU: Directive 91/338 EEC (adds to 76/769/EEC), Directive 94/62/EEC, 2002/95/EC RoHS Directive Japan: Industrial Safety and Health Law, Air Pollution Control Law, Water Pollution Control Law, Waste Management (Disposal) and Public Cleansing Law, Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
DDT	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Dieldrin	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Dimethylfumarate(DMF)	EU: Directive 2009/251/EC
Dioxins	EU: Dioxin Decree 07/15/1994 Japan: Industrial Safety and Health Law, Air Pollution Control Law, Water Pollution Control Law, Waste Management (Disposal) and Public Cleansing Law, Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
Endrin	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Halogenated flame retardants / additives	Blue Angel (German Eco-label) TCO'99/'03 (Swedish Eco-label)
Halons	Montreal Protocol US: 1990 Clean Air Act EU: Directive 76/769/EEC
Hexachlorobenzene	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Hexachlorocyclohexane isomers (HCH)	OSPAR
Hydrochlorofluorocarbons (HCFCs)	Montreal Protocol US: 1990 Clean Air Act EU: Directive 76/769/EEC
Lead and its compounds	US: California Proposition 65 EU: Directive 89/677/EEC (no limit specified), Directive 94/62/EEC, 2002/95/EC RoHS Directive Japan: Industrial Safety and Health Law, Air Pollution Control Law, Water Pollution Control Law, Waste Management (Disposal) and Public Cleansing Law, Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
Mercury and its compounds	EU: Directive 91/338 EEC (adds to 76/769/EEC), Directive 94/62/EEC, 2002/95/EC RoHS Directive Sweden: SFS 1996:319 Japan: Industrial Safety and Health Law, Air Pollution Control



# 宏捷科技股份有限公司

Advanced Wireless Semiconductor Comp.

文件標題: 環境危害物質管理程序	頁數: 20 of 20	文件編號: IS-P-009	版本: 02
---------------------	-----------------	-------------------	-----------

Restricted Substance	Legal Reference
	Law, Water Pollution Control Law, Waste Management (Disposal) and Public Cleansing Law, Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
Mirex	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Nickel and its compounds	EU: Directive 94/27/EEC
N,N'-ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylenediamine, and N,N'-dixylyl-p-phenylenediamine	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Ozone Depleting Substances	Montreal Protocol
Pentachlorophenol (PCP)	OSPAR
Perfluorooctane sulfonates (PFOS)	EU: Directive 2006/122/EC
Polybrominated Biphenyls (PBBs) and their ethers/oxides (PBDEs)	EU: Directive 76/769/EEC, penta and octa-BDE restrictions, 2002/95/EC RoHS Directive Japan: Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
Polychlorinated Biphenyls (PCBs) and Terphenyls (PCTs)	EU: Directive 76/769/EEC, Directive 91/173/EEC Germany: ChemVerbots V US: TSCA
Polychlorinated naphthalene(Cl $\geq$ 3)(PCN)	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Polyvinyl chloride (PVC)	Blue Angel (German Eco-label) TCO'99/'03 (Swedish Eco-label)
Radioactive substances	Laws for the Regulations of Nuclear Source Material, Nuclear Fuel Material, and Reactors, 1986(Japan)
Toxaphene	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
Yellow Phosphorus	Japan: Industrial Safety and Health Law, Air Pollution Control Law, Fire Protection Law
2,4,6-Tri-t-butylphenol	Japan: Law Concerning the Examination and Regulation of Manufacture etc. of Chemical Substances (Class 1)
4-Nitrobiphenyl and its salt	Japan: Industrial Safety and Health Law

Note. This table is for reference only.

註：此表僅供參考，實際內容請參照各地區或國家最新法規規定。