



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 1 of 34

Rev.	Description	Editor	Co-Sign Date	Effective Date	Issue Date
A	新制訂 New initial	陳益光	Jan 12,2009	Feb 03,2009	Feb 03,2009
B	新增<附錄一>環境限用物質鹵素(Halogen) Added Halogen to Appendix 1	郭淑鳳	Mar 24,2009	Mar 26,2009	Mar 26,2009
C	修訂#7.1.1 環境限用物質 Modified #7.1.1 Environmental restricted substance	朱國華	May 22,2009	Jun 03,2009	Jun 03,2009
D	修訂#7.1.1 環境限用物質項目 Modified #7.1.1 Environmental restricted substance	朱國華	Jul 24,2009	Aug 12,2009	Aug 12,2009
E	修訂 7.1.1 環境限用物質項目 Modified Environmental restricted substance 1. 新增溴&氯為必要管制對象 Added Bromine and Chlorine as the necessary control item 2. 新增附錄一環境限用物質內容(鹵素、二氧化鈷、特定苯並三氮唑、PVC、甲醛、氧化鋁、放射性物質、特定鄰苯二甲酸鹽、氫氟碳化合物;全氟化碳、富馬酸二甲酯、特定胺化合物) Added Appendix 1 Environmental restricted substance 3. 將附錄一(各物質編號、金屬換算系數)表頭刪除 Removed Appendix 1 of table title	林維彥	Nov 11,2009	Dec 01,2009	Dec 01,2009
F	依據國際法令規範內容與客戶自訂之環境限用物質項目要求更新如下 According to the International regulations and Customer requirements update as below 新增附錄一環境限用物質內容 Added Appendix 1 Environmental restricted substance 新增附錄二環境管理物質內容 Added Appendix 2 Environmental management substance 新增附錄三 ODS 物質內容 Added Appendix 3 ODS substance	林維彥	Jul 08,2010	Jul 19,2010	Jul 19,2010
G	依據國際法令規範內容與客戶自訂之環境限用物質項目要求更新如下 According to the International regulations and Customer requirements update as below 修訂 7.1.1 濃度限值 Modified 7.1.1 control limit 新增附錄一、二、三物質內容 Added Appendix 1、2、3 substance	林維彥	Jul 05,2011	Jul 14,2011	Jul 14,2011
H	依據國際法令規範內容與客戶自訂之環境限用物質項目要求更新如下 According to the International regulations and Customer requirements update as below 新增附錄一、二、三物質內容 Added Appendix 1、2、3 substance	林維彥	Sep 05,2012	Sep 13,2012	Sep 13,2012
I	依據國際法令規範內容與客戶自訂之環境限用物質項目要求更新如下 According to the International regulations and Customer requirements update as below 新增附錄一、二物質內容 Added Appendix 1、2 substance	林維彥	Sep 09,2013	Sep 11,2013	Sep 11,2013

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 2 of 34

J	<p>依據國際法令規範內容之環境限用物質項目要求更新如下 According to the International regulations and Customer requirements update as below</p> <ol style="list-style-type: none"> 1. 7.1.1 新增 4 項 RoHS 管制物質(鄰苯二甲酸二酯、鄰苯二甲酸丁酯苯甲酯、鄰苯二甲酸二丁酯、鄰苯二甲酸二異丁酯) Added 4 RoHS restricted substance to #7.1.1 2. 7.1.1 修訂 RoHS 管制物質限值 Modified #7.1.1 RoHS restricted substance limited value 3. 7.1.1 新增環境限用物質參考法規 Added Reference regulation to #7.1.1 4. 備註說明 新增第 2 項 Added item 2 to #Remark 	莊振武	Jul 13,2015	Jul 15,2015	Jul 15,2015
---	--	-----	-------------	-------------	-------------

CONFIDENTIAL

機密文件，嚴禁複印

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 3 of 34

1.0 PURPOSE 目的

為規範本公司產品內所含各項環境限用物質含量以符合國際法令規定與達到顧客之產品環保要求，及其他上下游供應商/外包商之製程生產用零(附)組件、材料之環境限用物質含量，作為供應商/外包商提供本公司產品所須之原物料/材料之依循標準，特訂定本標準。

In order to define the control method of environmental restricted substrate for all products of Wisechip to meet international environmental regulations and customer requirements. The standard extends to all of material, part and in process product from supplier and subcontractor.

2.0 SCOPE 範圍

2.1 本公司生產銷售產品。

All of product manufactured and sold by Wisechip.

2.2 構成本公司產品之各項原物料。

Materials and components as part of product.

2.3 本公司委託外包商之產品及材料。

Materials, components and product from subcontractor.

2.4 運送與保護產品至客戶端所需之包裝材。

Packing materials for the purpose to protect product and deliver to customer.

3.0 RESPONSIBILITY 權責

3.1 品質系統單位：

Quality System Function :

3.1.1 匯整客戶與國際/區域組織對於產品環保性要求/規範/指令，解讀並傳遞至相關部門。

To collect International regulations and Customer requirements and explain, inform to related functions.

3.1.2 根據各國產品環保法規及客戶環保要求制訂本公司之環境管理物質標準。

To define this Environmental Restricted Substance Control Standard base on National regulations and Customer requirements of Wisechip.

4.0 DEFINITION 名詞定義

4.1 環境限用物質：本類化學物質存於管制對象（適用範圍）中之濃度不得超出本標準所定之限值。

Environmental restricted substance: The substances and their uses classified in this group that must be banned and under the control limit.

4.2 環境管理物質：本類化學物質若存於管制對象中主動告知本公司，並進行自我管理。

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 4 of 34

Environmental management substance: The substances and their usage classified in this group, suppliers/subcontractors shall report the actual content to Wisechip actively and manage the substances by themselves.

4.3 破壞臭氧層物質(Ozone Depleting Substance , ODS)

4.4 包裝材：指產品包裝紙盒、產品箱、用於搬運部件包裝上的產品，包括把手、木框、錫箔、托架、包裝袋、緩衝材質、固定器具、薄版、繩索、硬紙箱、塗料、墨水、膠帶、束帶、標籤、墊片、散裝盒、棧板、膠膜、乾燥劑、濕度指示卡、橡皮筋等。

Packing materials: Packing materials are defined as product cartons or boxes to be used for the protection, handling and delivery of goods, include crate, tinfoil, bag, cushion, blister pack, paints, printing ink, label, pallet , tape, film, tray, etc.

4.5 含有：意指無論是否有意，所有在產品的部件、設備或使用的材料中添加、填充、混入或黏附的物質。（包括在加工過程中無意混入或黏附於產品中的物質。）

Contained is a situation in which a substance is added to, is blended with, fills up, or adheres to. (When a substance is unintentionally contained in, or added to a product in processing process, this situation is also regarded as "Contained" .)

4.6 雜質：雜質是指能夠滿足以下任一個或兩個條件的物質：

包含在天然材料中，作為工業材料使用，在精製過程中技術上不能完全去除的物質（例如自然的雜質）合成反應過程中產生，而在技術上不能完全去除的物質。

Impurity: An " Impurity" is a substance that satisfies either or both of the following conditions:

One contained in a natural material, which can not technically be removed in a refining process totally (i.e. Natural impurities); and

One generated in a synthesis process, the total removal of which is technically impossible.

5.0 REFERENCE 參考資料

5.1 環境限用物質管理程序書（PQS1-0012）

Environmental Restricted Substance Management Procedure（PQS1-0012）

6.0 PRECAUTION 注意事項

N/A

7.0 CONTENT 作業內容

7.1 管制標準 Control Standard

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 5 of 34

本公司依據國際法令規定及客戶之產品環保要求，制定四大類綠色產品環境限用物質管制標準內容，各類制定規劃如下。

According to the International regulations and Customer requirements, Wisechip defines four groups to manage those Environmental restricted substance. Please refer to the detail items from 7.1.1 to 7.1.4.

7.1.1 環境限用物質 Environmental restricted substance

依據國際法令規範內容，制定本公司環境限用物質（其詳細物質分類如附錄一），並規範下列限用物質屬於必要管制對象，不得超出下表中濃度限值並提出檢測報告附查證。未列入必要管制對象者其濃度限值均為不得檢出。

According to the International regulations, Wisechip defines the substances must be banned and under the control limit as below table. (Refer to Appendix 1 for details) If not listed to the necessary control item concentration limitation is not detectable.

中文名稱 Name in Chinese	英文名稱 Name in English	限值(PPM)Limit(PPM)	參考法規
A. 一般產品禁用之物質 Parts/Products/Processes Content Restrictions			
鎘及其化合物	Cadmium and Cadmium Compounds	100	2011/65/EU
六價鉻化合物	Hexavalent Chromium Compounds	1000	
鉛及其化合物	Lead and Lead Compounds	1000	
汞及其化合物	Mercury and Mercury Compounds	1000	
多溴聯苯類 (PBB 類)	Polybrominated Biphenyls	1000	
多溴聯苯醚 (PBDE 類)	Polybrominated Diphenyl ethers	1000	
鄰苯二甲酸二(2-乙基己基)酯 (DEHP)	Bis (2-ethylhexyl) phthalate	1000	
鄰苯二甲酸丁酯苯甲酯 (BBP)	Butyl benzyl phthalate	1000	
鄰苯二甲酸二丁酯 (DBP)	Dibutyl phthalate	1000	Regulation EC No 1907/2006) Article 57 , EU 519/2012
鄰苯二甲酸二異丁酯 (DIBP)	Diisobutyl phthalate	1000	
全氟辛烷磺酸 / 鈹	Perfluorooctane sulfonates / acid (PFOS / A)	(1)配製品 In preparations: 50ppm (2)紡織品,皮革製品,塗料中 Textile, Leather and coating: 1 μg/m2 (3)半成品,成品,零件 semi-finished products, articles, parts : 1000ppm	
溴	Bromine	900	IEC 61249-2-21,

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 6 of 34

氯	Chlorine	900	Market Requirement
溴+氯	Bromine + Chlorine	1500	
B. 包裝材料禁用之物質 Packing Content Restrictions			
鎘+鉛+汞+六價鉻	Cd+Pb+Hg+Cr+6	100	94/62/EC

備註說明：Remark

1. 上述環境限用物質，供應商皆須提出檢測報告與承諾書，聲告符合該項限用物質。

All of above substance suppliers should provide test report and sign Warranty Letter to prove they can meet related requirement.

2. 當客戶有自訂之環境限用物質項目及限值時，則須符合客戶要求。

Once customers have there own restricted substances and limited value of environment, it shall be comply with customer requirements.

環境管理物質 Environmental management substance

依據國際法令未來可能列入禁用及削減之化學物質項目，制定本公司環境管理物質等多項化學物質，規範該物質若存於管制對象中，供應商應主動告知本公司，並進行自我管理。(其詳細物質分類如附錄二)

According to the International regulations and Customer requirements, Wisechip defines the substances that suppliers shall report the actual content to Wisechip actively and manage the substances by themselves. (Refer to Appendix 2 for details)

7.1.2 破壞臭氧層物質(ODS) Ozone Depleting Substance

依據國際環保公約、法令所規範之破壞臭氧層物質如 CFC 氣體，全面禁止於製造過程中使用。(其詳細管制物質如附錄三)

According to the International regulations and directives, Wisechip defines the substances must be banned in production process. (Refer to Appendix 3 for details)

7.1.3 包裝材限用物質 Packing restricted substance

依據國際環保要求對包裝材之規定，規範產品所使用之包裝材中之鎘含量不得超過 5PPM，且鉛、鎘、汞、六價鉻濃度總和不得超過 100 PPM，若客戶有要求則符合客戶要求執行之。

According to the International regulations and Customer requirements, Wisechip defines Cadmium must less than 5ppm and the total value of Cadmium, Hexavalent Chromium, Lead, Mercury, Polybrominated Biphenyls(PBB), Polybrominated Diphenyl ethers(PPDE) and their Compounds must less than 100ppm.

7.2 產品檢測 Test of product

7.2.1 本辦法之環境管理物質檢測包含重金屬及化合物，檢測設備或方法應於檢測報告中清楚載明，以確保數據之可靠性。

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 7 of 34

The test report of environmental restricted substances in this standard should mark out the measurement equipment or method to assure the data is reliable.

- 7.2.2 供應商、外包商委託外部檢測機構進行檢測時，需委託本公司所認可且通過 ISO 17025 之公正檢驗機構。另亦需提出實驗室認可之證書，且提供檢測證明檔及報告其內容應包含產品名稱、測試方法、測試儀器、測試數值、儀器偵測極限及送測樣品照片。

The laboratory should be acquired by ISO 17025 and Wisechip. Otherwise the laboratory shall provide the certification and the test report shall include product name, test method, equipment, result, MDL and picture of testing sample.

8.0 APPENDIX 附錄

- 8.1 附錄一：環境限用物質，第 7 頁。

Appendix 1. List of Environmental restricted substance, page 8.

- 8.2 附錄二：環境管理物質，第 26 頁。

Appendix 2. List of Environmental management substance, page 27.

- 8.3 附錄三：ODS 物質，第 28 頁。

Appendix 3. List of ODS, page 28.

- 8.4 附錄四：建議檢測方法說明，第 33 頁。

Appendix 4. Recommend test method, page 33.

9.0 RECORD/FORM 表單

N/A



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 8 of 34

<附錄一> 環境限用物質 Appendix 1. List of Environmental restricted substance

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
鎘及其化合物 Cadmium (Cd) and compounds	鎘	Cadmium	Cd	7440-43-9
	鎘合金	Cadmium alloys	-	-
	氧化鎘	Cadmium oxide	CdO	1306-19-0
	氯化鎘	Cadmium chloride	CdCl ₂	10108-64-2
	硫化鎘;鎘黃	Cadmium sulfide	CdS	1306-23-6;8048-07-5
	硒化鎘	Cadmium selenide	CdSe	1306-24-7
	碲化鎘	Cadmium telluride	CdTe	1306-25-8
	氰化鎘	Cadmium cyanide	C ₂ CdN ₂	542-83-6
	氟化鎘	Cadmium fluoride	CdF ₂	7790-79-6
	碘化鎘	Cadmium iodide	CdI ₂	7790-80-9
	硝酸鎘	Cadmium nitrate	Cd(NO ₃) ₂	10325-94-7
	鎢化鎘	Cadmium tungstate	-	7790-85-4
	四水合硝酸鎘	Cadmium nitrate tetrahydrate	Cd(NO ₃) ₂ · 4H ₂ O	10022-68-1
	硫酸鎘	Cadmium sulfate	CdSO ₄	10124-36-4
	硬脂酸鎘	Cadmium stearate	Cd(C ₁₈ H ₃₅ O ₂) ₂	2223-93-0
	其他鎘化合物	Other cadmium compounds	-	-
六價鉻化合物 Hexavalent Chromium (Cr+6) and compounds	六價鉻	Hexavalent chromium(VI)	Cr+6	18540-29-9
	鉻酸鋰	Lithium chromate	Li ₂ CrO ₄	14307-35-8
	鉻酸鈉	Sodium chromate	Na ₂ CrO ₄	7775-11-3
	鉻酸鉀	Potassium chromate	K ₂ CrO ₄	7789-00-6
	氯鉻酸鉀	Potassium chlorochromate	K[CrO ₃ Cl]	16037-50-6
	鉻酸銨	Ammonium chromate	(NH ₄) ₂ CrO ₄	7788-98-9
	鉻酸銅	Copper chromate	CuCrO ₄	13548-42-0
	鉻酸鎂	Magnesium chromate	MgCrO ₄	13423-61-5
	鉻酸鋇	Strontium chromate	SrCrO ₄	7789-06-2
	鉻酸鋇	Barium chromate	BaCrO ₄	10294-40-3
	鉻酸鋅; 黃鋅; 鋅黃	Zinc chromate	ZnCrO ₄	12018-19-8;13530-65-9;14018-95-2
	重鉻酸銨	Ammonium dichromate; ammonium bichromate	(NH ₄) ₂ Cr ₂ O ₇	7789-09-5
	重鉻酸鈣	Calcium dichromate; calcium bichromate	CaCr ₂ O ₇	14307-33-6
	重鉻酸鋅	Zinc dichromate; zinc bichromate	ZnCr ₂ O ₇	-
	重鉻酸鈉	Sodium dichromate; sodium bichromate	Na ₂ Cr ₂ O ₇	10588-01-9
	重鉻酸鉀	Potassium dichromate; potassium bichromate	K ₂ Cr ₂ O ₇	7778-50-9
	三氧化鉻; 氧化鉻(VI); 無水鉻酸; 鉻酸	Chromium(VI) oxide; chromium trioxide	CrO ₃	1333-82-0
	鉻酸鈣; 鈣鉻黃	Calcium chromate	CaCrO ₄	13765-19-0
	鉻酸鉛氧化物	Lead chromate(VI) oxide	CrO ₃ Pb ₂ Si	18454-12-1
	鉻酸鉻	Dichromium tris(chromate)	Cr ₃ O ₁₂ ; CrH ₂ O ₄ · 2/3Cr	24613-89-6
	氫氧化鉻酸鋅	Pentazinc chromate octahydroxide	CrH ₃ O ₁₂ Zn ₅	49663-84-5
	氫氧化鉻酸鋅鉀	Potassium hydroxyoctaoxidizincatedichro	Cr ₂ (HO) ₂ Zn ₁₂ K	11103-86-9

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 9 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
		mate		
	醋酸鉻	Chromic acetate	C ₆ H ₈ CrO ₆	1066-30-4
	其他六價鉻化合物	Other hexavalent chromium compounds	-	-
鉛及其化合物 Lead (Pb) and compounds	鉛;金屬鉛	Lead metal	Pb	7439-92-1
	鉛-錫合金	Lead-tin alloy	Pb-Sn	-
	氧化鉛;一氧化鉛;氧化亞鉛;氧化鋁(II);密陀僧(黃鉛);黃丹	Lead(II) oxide	PbO	1317-36-8
	二氧化鉛;氧化高鉛;過氧化鉛	Lead(IV) oxide	PbO ₂	1309-60-0
	三氧化二鉛	Dilead trioxide	Pb ₂ O ₃	1314-27-8
	四氧化三鉛;鉛丹;紅丹;氧化鉛(II,IV)	Lead(II,IV) oxide	Pb ₃ O ₄	1314-41-6
	疊氮化鉛;鉛疊氮化物	Lead azide	PbN ₆	13424-46-9
	二氟化鉛;氟化亞鉛;氟化鉛(II)	Lead (II) fluoride	PbF ₂	7783-46-2
	二氯化鉛;氯化鉛(II);氯化鉛	Lead (II) chloride	PbCl ₂	7758-95-4
	四氯化鉛;氯化鉛(IV)	Lead (IV) chloride	PbCl ₄	13463-30-4
	碘化亞鉛;碘化鉛(II)	Lead(II) iodide	PbI ₂	10101-63-0
	硫化鉛(II)	Lead(II) sulfide	PbS	1314-87-0
	氰化鉛(II)	Lead(II) cyanide	Pb(CN) ₂	592-05-2
	氟硼酸鉛	Lead tetrafluoroborate	Pb(BF ₄) ₂	13814-96-5
	六氟矽酸鉛	Lead hexafluorosilicate	PbSiF ₆	25808-74-6
	硝酸鉛	Lead nitrate	Pb(NO ₃) ₂	10099-74-8
	碳酸鉛	Lead carbonate	PbCO ₃	598-63-0
	碳酸水氧化鉛	Lead(II) carbonate basic	2PbCO ₃ ·Pb(OH) ₂	1319-46-6
	碱式碳酸鉛;鹽基碳酸鉛;鉛白;氫氧碳化鉛	Lead hydroxycarbonate	(PbCO ₃) ₂ ·Pb(OH) ₂	1344-36-1
	過氯酸鉛	Lead perchlorate	Pb(ClO ₄) ₂	13637-76-8
	硫酸亞鉛;硫酸鉛(II)	Lead(II) sulfate	PbSO ₄	7446-14-2;15739-80-7
	三鹽基硫酸鉛	Lead oxide sulfate	Pb ₃ SO ₇	12202-17-4
	磷酸鉛	Lead(II) phosphate	Pb ₃ (PO ₄) ₂	7446-27-7
	硫氰酸鉛	Lead thiocyanate	Pb(SCN) ₂	592-87-0
	三合水乙酸鉛;三水醋酸鉛(II)	Lead(II) acetate, trihydrate	Pb(CH ₃ COO) ₂ · 3H ₂ O	6080-56-4
	乙酸鉛;醋酸鉛(II);鉛糖	Lead(II) acetate	Pb(CH ₃ COO) ₂	301-04-2
	乙酸高鉛鹽;四乙酸鉛	Lead(IV) acetate	Pb(CH ₃ COO) ₄	546-67-8
	油酸鉛	Lead oleate	Pb[CH ₂ (CH ₂) ₇ CH=CH(CH ₂) ₇ COO] ₂	1120-46-3
	鉻酸鉛	Lead(II) chromate	PbCrO ₄	7758-97-6
	鈦酸鉛	Lead(II) titanate	PbTiO ₃	12060-00-3
	鉛的硫酸鹽	Lead sulfate, sulphuric acid, lead salt	Pb ₃ SO ₄	15739-80-7
硬脂酸鉛	Lead stearate	C ₃₆ H ₇₀ O ₄ ·Pb	7428-48-0;1072-35-1	
硼酸鉛	Lead(II) metaborate	Pb(BO ₂) ₂ · H ₂ O	10214-39-8	
矽酸鉛	Lead metasilicate	PbSiO ₃	11120-22-2;10099-76-0	
銻酸鉛	Lead antimonite	Pb ₃ (SbO ₄) ₂	13510-89-9	
砷酸鉛;砷酸氫鉛;酸性砷酸鉛	Lead arsenate(1:1)	PbHAsO ₄	7784-40-9	

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 10 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	亞砷酸鉛	Lead(II) arsenite	Pb(AsO ₂) ₂	10031-13-7
	鉻酸鉛;鉻黃;C.I.顏料黃34	Lead chromate; chrome yellow; Lead sulfochromate yellow	PbCrO ₄	1344-37-2
	鉬酸鉛	Lead molybdate	PbMoO ₄	10190-55-3
	鉛酸鈣	Calcium plumbate	Ca ₂ PbO ₄	12013-69-3
	四甲基鉛;四甲鉛;TML	Tetramethyllead	Pb(CH ₃) ₄	75-74-1
	四乙基鉛;四乙鉛;TEL	Tetraethyllead	Pb(C ₂ H ₅) ₄	78-00-2
	硫酸鉛鉻鉬紅(C.I.顏料紅104)	Lead chromate molybdate sulfate red	-	12656-85-8
	收斂酸鉛	Lead styphnate ; Lead 2,4,6-trinitro-m-phenylene dioxide	C ₆ HN ₃ O ₈ Pb	15245-44-0
	苦味酸鉛(II)	Lead dipicrate	C ₁₂ H ₄ N ₆ O ₁₄ Pb	6477-64-1
	硒化鉛(II)	Lead selenide	PbSe	12069-00-0
	其他鉛化合物	Other lead compounds	-	-
汞及其化合物 Mercury (Hg) and compounds	汞;金屬汞	Mercury	Hg	7439-97-6
	汞合金;汞齊	Mercury alloys ; amalgam	-	-
	氧化亞汞;氧化汞(I)	Mercury(I)oxide	Hg ₂ O	15829-53-5
	氯化亞汞;氯化汞(I);甘汞	Mercury(I)chloride	Hg ₂ Cl ₂	10112-91-1
	二氯化汞;氯化汞(II);升汞	Mercury(II) chloride	HgCl ₂	7487-94-7
	一氧化汞;氧化汞(II)	Mercury(II) oxide	HgO	21908-53-2
	硝酸汞;硝酸汞(II)	Mercury(II)nitrate	Hg(NO ₃) ₂	10045-94-0
	硫酸亞汞;硫酸汞(I)	Mercury(I)sulfate	Hg ₂ SO ₄	7783-36-0
	雷汞;雷酸汞(II)	Mercury(II)fulminate	Hg(ONC) ₂	628-86-4
	乙酸汞;醋酸汞(II)	Mercury(II)acetate	Hg(CH ₃ COO) ₂	1600-27-7
	甲基汞鹽	Methylmercury salts	CH ₃ HgX ;X=Cl,Br,I,OH, etc.	22967-92-6
	乙基汞鹽	Ethylmercury salts	C ₂ H ₅ HgX ;X=Cl,Br,I,OH, etc.	-
	丙基汞鹽	Propylmercury salts	C ₃ H ₇ HgX ;X=Cl,Br,I,OH, etc.	-
	苯基汞鹽	Phenylmercury salts	C ₆ H ₅ HgX ;X=Cl,Br,I,OH, etc.	-
	甲氧基乙基汞鹽	Methoxyethylmercury salts	CH ₃ OC ₂ H ₄ HgX ;X=Cl,Br,I,OH, etc.	-
	二烷基汞	Dialkylmercury	R ₂ Hg ;R=alkyl group(C _n H _{2n+1})	-
	二苯汞	Diphenylmercury	(C ₆ H ₅) ₂ Hg	587-85-9
	砷酸汞	Mercuric arsenate	-	7784-37-4
	苯甲酸汞	Mercuric benzoate	-	583-15-3
	溴化汞	Mercuric bromide	Br ₂ Hg	7789-47-1
	氯化汞	Mercuric chloride	-	7484-37-4
	氰化汞	Mercuric cyanide	C ₂ HgN ₂	592-04-1
	重鉻酸汞	Mercuric dichromate	-	7789-10-8
	氟化汞	Mercuric fluoride	F ₂ Hg	7783-39-3
	碘化汞	Mercuric iodate	HgI ₂ O ₆	7783-32-6

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Manual Procedure WI Spec. Engineering Doc Company Regulation

Confidential Level A B C

Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 11 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	碘化汞,紅色	Mercuric iodide, Red	HgI ₂	7774-29-0
	油酸汞	Mercuric oleate	-	1191-80-6
	水楊酸汞	Mercuric Salicylate	-	5970-32-1
	硬脂酸汞	Mercuric stearate	C ₃₆ H ₇₀ HgO ₄	645-99-8
	硫酸汞	Mercuric sulfate	H ₂ O ₃ S·Hg	7783-35-9
	硫化汞	Mercuric sulfide	HgS	1344-48-5
	硫氰酸汞	Mercuric thiocyanate	C ₂ HgN ₂ S ₂	592-85-8
	乙酸汞(I)	Mercurous acetate	C ₂ H ₃ HgO ₂	631-60-7
	溴化亞汞	Mercurous bromide	BrHg	10031-18-2
	氯酸鹽汞	Mercurous chlorate	-	10294-44-7
	氯化汞	Mercurous chloride	Cl ₂ Hg ₂	10112-91-1
	氟化汞	Mercurous fluoride	F ₂ Hg ₂	13967-25-4
	碘化亞汞	Mercurous iodide	Hg ₂ I ₂	15385-57-6
	硝酸亞汞	Mercurous nitrate	HNO ₃ ·Hg	10415-75-5
	其他汞化合物	Other mercury compounds	-	-
砷及其化合物 Arsenic (As) and compounds	砷；金屬砷	Arsenic	As	7440-38-2
	砷酸鈣	Calcium arsenate	AsH ₃ O ₃ /3/2Ca	7778-44-1
	亞砷酸鈣	Calcium arsenite	-	27152-57-4
	亞砷酸鉀	Potassium arsenite	-	10124-50-2
	砷酸鉀	Potassium arsenate	-	7784-41-0
	砷酸鉛	Lead arsenate	As ₂ O ₅ Pb ₃	3687-31-8
	五硫化二砷	Arsenic pentasulfide	As ₂ S ₅	1303-34-0
	五氧化二砷	Arsenic pentoxide	As ₂ O ₅	1303-28-2
	三氧化二砷	Arsenic trioxide	As ₂ O ₃	1327-53-3
	硫化砷(III)	Arsenic trisulfide	As ₂ S ₃	1303-33-9
	砷化鎵	Gallium arsenide	AsGa	1303-00-0
	10,10'-氧雙-10H-吩惡砷吩砷嗪 氧化物	10,10' -Oxybis-10H-phenoxarsine(OBPA)	C ₂₄ H ₁₆ As ₂ O ₃	58-36-6
	其他砷化合物	Other arsenic compounds	-	-
銻及其化合物 Antimony (Sb) and compounds	銻	Antimony	Sb	7440-36-0
	三氯化銻	Antimony trichloride	SbCl ₃	10025-91-9
	三氧化銻	Antimony trioxide	Sb ₂ O ₃	1309-64-4
	五氧化二銻	Antimony pentoxide	Sb ₂ O ₅	1314-60-9
	偏銻酸鈉	Sodium antimonite	Na ₃ O ₃ Sb	15432-85-6
	硫化銻	Antimony pentasulfide	S ₅ Sb ₂	1315-04-4
	氟化銻	Antimony trifluoride	F ₃ Sb	7783-56-4
	硫化亞銻	Antimony trisulfide	S ₃ Sb ₂	1345-04-6
	銻化鎵	Gallium antimonide	GaSb	12064-03-8
	銻化鎵	Indium antimonide	InSb	1312-41-0
	偏銻酸鈉	Sodium antimonide	Na ₂ O ₃ Sb	15432-85-6
	其他銻化合物	Other antimony compounds	-	-
鈹及其化合物 Beryllium (Be) and compounds	鈹	Beryllium	Be	7440-41-7
	鈹礦石	Beryl ore	A ₁₂ Be ₃ O ₁₈ Si ₆	1302-52-9
	氯化鈹	Beryllium chloride	BeCl ₂	7787-47-5

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Manual Procedure WI Spec. Engineering Doc Company Regulation

Confidential Level A B C

Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 12 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	氟化鈹	Beryllium fluoride	BeF ₂	7787-49-7
	硫酸鈹四水合物	Beryllium sulfate tetrahydrate	BeH ₄ O ₈ S	7787-56-6
	鈹-鋁合金	Beryllium-aluminum alloy	-	12770-50-2
	氫氧化鈹	Beryllium hydroxide	BeH ₂ O ₂	13327-32-7
	磷酸鈹	Beryllium phosphate	BeHO ₄ P	13598-15-7
	矽酸鋅鈹	Zinc beryllium silicate	BeO ₄ SiZn	39413-47-3
	硫酸鈹	Beryllium sulfate	BeO ₄ S	13510-49-1
	碳化鈹	Beryllium carbide	C ₂ Be	506-66-1
	矽酸鈹	Beryllium silicate	Be ₂ SiO ₄	15191-85-2
	其他鈹化合物	Other beryllium compounds	-	-
鎂及其化合物 Magnesium (Mg) and compounds	鎂	Magnesium	Mg	7439-95-4
	其他鎂化合物	Other Magnesium compounds	-	-
硒及其化合物 Selenium (Se) and compounds	硒	Selenium	Se	7782-49-2
	亞硒酸	Selenious acid	H ₂ SeO ₃	7783-00-8
	其他硒化合物	Other selenium compounds	-	-
鉍及其化合物 Bismuth (Bi) and compounds	鉍	Bismuth	Bi	7440-69-9
	三氧化鉍	Bismuth trioxide	Bi ₂ O ₃	1304-76-3
	硝酸鉍	Bismuth nitrate	Bi ₃ HNO ₃	10361-44-1
	其他鉍化合物	Other bismuth compounds	-	-
鉈及其化合物 Thallium (Tl) and compounds	鉈	Thallium	Tl	7440-28-0
	一氧化二鉈	Thallium oxide (I)	OTl ₂	1314-12-1
	硫酸亞鉈	Thallosulfate	Tl ₂ SO ₄	7446-18-6
	硝酸亞鉈	Thallium nitrate	HNO ₃ ·Tl	10102-45-1
	其他鉈化合物	Other thallium compounds	-	-
鈷及其化合物 Cobalt (Co) and compounds	鈷	Cobalt	Co	7440-48-4
	氧化鈷(II,III)	Cobalt oxide (II,III)	Co ₂ O ₃	1308-06-1
	氧化鈷(II)	Cobalt oxide(II)	CoO	1307-96-6
	氧化鈷(III)	Cobalt oxide (III)	Co ₂ O ₃	1308-04-9
	其他鈷化合物	Other cobalt compounds	-	-
鋇及其化合物 Barium (Ba) and compounds	鋇	Barium	Ba	7440-39-3
	亞硫酸鹽鋇	Barium sulfite	BaSO ₃	7787-39-5
	氯化鋇	Barium chloride	BaCl ₂	10361-37-2
	二水合氯化鋇	Barium chloride dihydrate	BaCl ₂ ·2(H ₂ O)	10326-27-9
	二氧化鋇	Barium peroxide	BaO ₂	1304-29-6
	其他鋇化合物	Other barium compounds	-	-
橡膠及其化合物 Rubber and rubber compounds	乳膠	Latex	C ₈ H ₈	9003-53-6
	泡沫聚苯乙烯	Expanded polystyrene(EPS)	C ₈ H ₈	9003-53-6
	其他橡膠化合物	Other latex compounds	-	-
三價鉻化合物 Chromium(III) and chromium compounds	三價鉻化合物	Chromium(III) and chromium compounds	Cr ³⁺	16065-83-1
鎳及其化合物	氧化鎳	Nickel(II) oxide	NiO	1313-99-1

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Manual Procedure WI Spec. Engineering Doc Company Regulation

Confidential Level A B C

Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 13 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
Nickel (Ni) and compounds	碳酸鎳	Nickel(II) Carbonate	NiCO ₃	3333-67-3
	硫酸鎳	Nickel(II) Sulfate	NiSO ₄	7786-81-4
	硫化鎳	Nickel subsulfide	Ni ₃ S ₂	12035-72-2
	羰基鎳	Nickel carbonyl	C ₄ NiO ₄	13463-39-3
	氫氧化鎳	Nickelous hydroxide	H ₂ NiO ₂	12054-48-7
	金屬鎳	Nickel	Ni	7440-02-0
	其他鎳化合物	Other nickel compounds	-	-
二丁基錫化合物 (DBT) Dibutyltin (DBT) compounds	氧化二丁基錫；二丁基氧化錫	Dibutyltin oxide ; Stannane, dibutyloxo-	C ₈ H ₁₈ OSn	818-08-6
	二丁基二氯化錫；二氯二丁基錫	Dibutyltin dichloride ; Stannane, dibutyldichloro-	C ₈ H ₁₈ Cl ₂ Sn	683-18-1
	二月桂酸二丁基錫；二丁基二月桂酸錫	Dibutyltin dilaurate ; Stannane, dibutylbis [(1-oxododecyl)oxy]-	C ₃₂ H ₆₄ O ₄ Sn	77-58-7
	二丁基二異辛酸錫；(Z,Z)-8,8-二丁基-3,6,10-三氧代-1-苯基-2,7,9-三氧雜-8-錫雜十三烷-4,11-二烯-13-酸苯基甲酯	Dibutyltin bis(benzylmaleate) ; Benzyl(Z,Z)-8,8-dibutyl-3,6,10-trioxo-1-phenyl-2,7,9-trioxa-8-stannatrideca-4,11-dien-13-oate	C ₃₀ H ₃₆ O ₈ Sn	7324-74-5
	馬來酸二丁基錫馬來酸二丁基錫；2,2-二丁基-1,3,2-二氧雜錫卓-4,7-二酮	Dibutyltin maleate;2,2-Dibutyl-1,3,2-dioxastannepin-4,7-dione	C ₁₂ H ₂₀ O ₄ Sn	78-04-6
	二乙酸二丁基錫；二醋酸二丁基錫	Dibutyltin diacetate; Diacetic acid dibutyltin salt	C ₁₂ H ₂₄ O ₄ Sn	1067-33-0
二辛基錫有機錫化合物(DOT) Dioctyltin (DOT) compounds	氧化二辛基錫	Dioctyltin oxide	C ₁₆ H ₃₄ OSn	870-08-6
	二辛基二氯化錫；氯化錫，二氯二辛基	Dioctyltin dichloride; Stannane, dichlorodioctyl-	C ₁₆ H ₃₄ Cl ₂ Sn	3542-36-7
	馬來酸酯辛基錫；2,2-辛基-1,3,2-二氧雜錫卓-4,7-二酮；	Dioctyltin maleate; 2,2-Dioctyl-1,3,2-dioxastannepin-4,7-dione	C ₂₀ H ₃₆ O ₄ Sn	16091-18-2
	巯基乙酸異辛酯二正辛基錫；2,2'-[(二辛基亞錫)雙(硫代)]雙乙酸二異辛酯	Di(n-octyl)tinbis(isooctylthioglycolate) ; Diisooctyl2,2'-[(dioctylstannylene)bis(thio)]diacetate	C ₃₆ H ₇₂ O ₄ S ₂ Sn	26401-97-8
	二月桂酸二正辛基錫；二月桂酸二辛基錫；二辛基雙[(1-氧代十二烷基)氧]錫	Dioctyltin dilaurates (DOTL); Dioctylbis[(1-oxododecyl)oxy] stannane	C ₄₀ H ₈₀ O ₄ Sn	3648-18-8
取代基有機錫化合物(包括三丁基錫化合物(TBT)、三苯基錫化合物(TPT) Trisubstituted organotin compounds(including tributyltin (TBT) compounds and triphenyltin (TPT) compounds)	正丁基溴化錫	Tributyltin bromide	(C ₄ H ₉) ₃ SnBr	1461-23-0
	三丁基氧化錫(TBTO)；雙三丁基氧化錫	Tributyltin oxide; Bis(tributyltin)oxide; Distannoxane,hexabutyl-	C ₂₄ H ₅₄ OSn ₂	56-35-9
	三苯基錫	Triphenyltin	(C ₆ H ₅) ₃ Sn	668-34-8
	三苯基氯化錫；氯化三苯基錫	Triphenyltin chloride; Fentin chloride; Stannane,chlorotriphenyl-	(C ₆ H ₅) ₃ SnCl	639-58-7
	三苯基羥基錫；三苯基氫氧化錫	Triphenyltin Hydroxide; Fentin hydroxide; Stannane,Bydroxytriphenyl-	(C ₆ H ₅) ₃ SnOH	76-87-9
	三苯基錫=N,N'-二甲基二硫代氨基甲酸酯；二甲基二硫代氨基甲酸三苯基錫	Triphenyltin N,N'-dimethyldithiocarbamate; Stannane,[[[dimethylamino]thiomethyl]thio]triphenyl-	(C ₆ H ₅) ₃ Sn(CH ₃) ₂ NCS ₂	1803-12-9
	三苯基氟化錫	Triphenyltin fluoride; Fentin fluoride	(C ₆ H ₅) ₃ SnF	379-52-2

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 14 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	三苯基錫醋酸鹽；醋酸三苯基錫；三苯基乙酸錫	Triphenyltin acetate; Fentin acetate; Stannane,(acetyloxy)triphenyl-	(C ₆ H ₅) ₃ SnOCOCH ₃	900-95-8
	三苯基錫脂肪酸鹽(僅限於脂肪酸的碳原子數為9、10物) 或11之物)	Triphenyltin fatty acid salts	-	18380-71-7;18380-72-8;47672-31-1;94850-90-5
	三苯基錫氯代乙酸鹽；三苯基錫氯代醋酸鹽	Triphenyltin chloroacetate; (chloroacetoxy)triphenylstannane	(C ₆ H ₅) ₃ SnOCOCH ₂ Cl	7094-94-2
	三丁基甲基丙烯酸錫(TBTM)	Tributyltin methacrylate; Tributyl(methacryloyloxy) stannane; Stannane,Tributyl[(2-methyl-oxo-2-propenyloxy)-	(C ₄ H ₉) ₃ SnC ₄ H ₇ O ₂	2155-70-6
	雙(三丁基錫)富馬酸鹽	Bis(tributyltin) fumarate	C ₂ H ₂ (COO) ₂ [(C ₄ H ₉) ₃ Sn] ₂	24291-45-0;6454-35-9
	三丁基氟化錫	Tributyltin fluoride	(C ₄ H ₉) ₃ SnF	1983-10-4;7304-48-5
	雙(三丁基錫)2,3-二溴丁二酸鹽	Bis(tributyltin)2,3- dibromosuccinate	[(C ₄ H ₉) ₃ Sn] ₂ C ₂ H ₂ (BR) ₂ (COO) ₂	31732-71-5;56323-17-2
	乙酸三丁基錫；醋酸三丁基錫	Tributyltin acetate	(C ₄ H ₉) ₃ SnOCOCH ₃	56-36-0
	月桂酸三丁基錫；三丁基(1-氧代十二烷基)氧錫	Tributyltin laurate; Tributyl(lauroyloxy)stannane	(C ₄ H ₉) ₃ SnC ₁₂ H ₂₅ O ₂	3090-36-6
	雙(三丁基錫)苯二甲酸鹽；三丁基錫苯二甲酸鹽	Bis(tributyltin)phthalate; [(Phthaloylbis(oxy))bis(tributylstannane)	(C ₆ H ₄)(COO) ₂ [(C ₄ H ₉) ₃ Sn] ₂	4782-29-0
	三丁基錫磺酸鹽	Tributyltin sulfamate; Stannane,[(aminosulfonyloxy)tributyl-	(C ₄ H ₉) ₃ SnSO ₃ NH ₂	6517-25-5
	雙(三丁基錫)馬來酸鹽	Bis(tributyltin) maleate	C ₂ H ₃ O ₂ Sn ₂	14275-57-1;24291-45-0
	三丁基氯化錫	Tributyltin chloride; Tributylchlorostannane; Stannane, tributylchloro-	(C ₄ H ₉) ₃ SnCl	1461-22-9;7342-38-3
	三丁基錫環烷酸錫和其異構體的混合物；萘酸三丁基錫；三丁基環烷酸錫(TBTN)	Mixture of tributyltin cyclopentanecarboxylate and its analogs; Stannane,tributyl-, mono(naphthenoyloxy)Derives.; Tributyltin naphthenate	-	85409-17-2
	三丁基錫碳酸環戊烷的混合物	Tributyltin cyclopentane carbonate mixture	-	5409-17-2
	1,2,3,4,4a,4b,5,6,10,10a-十氫-7-異丙基-1,4a-二甲基-1-菲甲酸甲酯三丁基錫和其異構體的混合物；三丁基錫松香鹽	Mixture of tributyltin 1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl-1,4 a-dimethyl-1-phenanthlene carboxylate and its analogs; Tributyltin rosin salt	C ₃₂ H ₅₆ O ₂ Sn	26239-64-5
	丙烯酸辛酯,甲基丙烯酸甲酯和甲基丙烯酸三丁基錫酯的共聚物(烷基=丙烯酸鹽的碳原子數限定為8個)；	Octyl acrylate-Methyl methacrylate-Tributyltin methacrylate copolymer (alkyl; C=8)	-	67772-01-4
	三辛基氯化錫	Trioctyltin chloride	C ₂₄ H ₅₁ ClSn	2587-76-0
	三乙基氫氧化錫	Triethyltin hydroxide	C ₆ H ₁₆ OSn	994-32-1
	三乙基氯化錫	Triethylchlorotin	C ₆ H ₁₅ ClSn	994-31-0
	二-μ-氧正丁基錫羧基硼烷	Di-μ-oxo-di-n-butylstanniohydroxyborane(DBB)	C ₈ H ₁₉ BO ₃ Sn	75113-37-0

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 15 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	其他三丁基錫 & 三苯基錫	Other tributyl tins(TBT) & triphenyl tins(TPT)	-	-
多溴聯苯類 (PBB類) PolyBrominated Biphenyls (PBB)	PBB；多溴聯苯	PBB; Polybrominated biphenyls Polybromobiphenyl	C ₁₂ H _{10-x} Br _x (x=1-10)	e.g. 67774-32-7
	PBB；多溴聯苯	PBB; Polybrominated biphenyls Polybromobiphenyl	C ₁₂ H _{10-x} Br _x (x=1-10)	59536-65-1
	二溴聯苯	Dibromobiphenyl	C ₁₂ H ₈ Br ₂	92-86-4
	2-溴代聯苯	2-Bromobiphenyl	C ₁₂ H ₉ Br	2052-07-5
	3-溴代聯苯	3-Bromobiphenyl	C ₁₂ H ₉ Br	2113-57-7
	4-溴代聯苯	4-Bromobiphenyl	C ₁₂ H ₉ Br	92-66-0
	三溴聯苯	Tribromobiphenyl	C ₁₂ H ₇ Br ₃	59080-34-1
	四溴聯苯	Tetrabromobiphenyl	C ₁₂ H ₆ Br ₄	40088-45-7
	五溴聯苯	Pentabromobiphenyl	C ₁₂ H ₅ Br ₅	56307-79-0
	六溴聯苯	Hexabromobiphenyl	C ₁₂ H ₄ Br ₆	36355-01-8
	六溴；2,2',4,4',5,6'-聯苯	2,2',4,4',5,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	36402-15-0
	六溴；2,2',3,3',5,5'-聯苯	2,2',3,3',5,5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	55066-76-7
	六溴；2,2',4,4',5,5'-聯苯	2,2',4,4',5,5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	59080-40-9
	六溴；2,2',4,4',6,6'-聯苯	2,2',4,4',6,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	59261-08-4
	六溴；3,3',4,4',5,5'-聯苯	3,3',4,4',5,5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	60044-26-0
	六溴；2,2',3,4,4',5'-聯苯	2,2',3,4,4',5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	67888-98-6
	六溴；2,3',4,4',5,5'-聯苯	2,3',4,4',5,5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	67888-99-7
	六溴；2,2',3,4',5,6'-聯苯	2,2',3,4',5,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	69278-59-7
	六溴；2,3,3',4,4',5'-聯苯	2,3,3',4,4',5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	77607-09-1
	六溴；2,2',3,4,4',5'-聯苯	2,2',3,4,4',5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	81381-52-4
	六溴；2,2',3,3',4,4'-聯苯	2,2',3,3',4,4'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	82865-89-2
六溴；2,2',3,3',4,5'-聯苯	2,2',3,3',4,5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	82865-90-5	
六溴；2,3,3',4',5,6'-聯苯	2,3,3',4',5,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	82865-91-6	
六溴；2,3,3',4,4',5'-聯苯	2,3,3',4,4',5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	84303-47-9	
六溴；2,3',4,4',5,6'-聯苯	2,3',4,4',5,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	84303-48-0	
六溴；2,2',3,4',6,6'-聯苯	2,2',3,4',6,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	93261-83-7	
六溴；2,2',3,3',4,6'-聯苯	2,2',3,3',4,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	119264-50-5	
六溴；2,2',3,3',5,6'-聯苯	2,2',3,3',5,6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	119264-51-6	
六溴；2,2',3,4,5',6'-聯苯	2,2',3,4,5',6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	119264-52-7	
六溴；2,2',3,5,5',6'-聯苯	2,2',3,5,5',6'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	119264-53-8	
六溴；2,2',3,4,5,5'-聯苯	2,2',3,4,5,5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	120991-47-1	
六溴；2,3,3',4,5,5'-聯苯	2,3,3',4,5,5'-hexabromobiphenyl	C ₁₂ H ₄ Br ₆	120991-48-2	
七溴聯苯	Heptabromobiphenyl	C ₁₂ H ₃ Br ₇	35194-78-6	
八溴聯苯	Octabromobiphenyl	C ₁₂ H ₂ Br ₈	61288-13-9	
九溴聯苯	Nonabromobiphenyl	C ₁₂ HBr ₉	27753-52-2	
九溴-1,1'-聯苯	Nonabromo-1,1'-biphenyl	C ₁₂ HBr ₉	27753-52-2	
十溴聯苯	Decabromobiphenyl	C ₁₂ Br ₁₀	13654-09-6	
多溴聯苯醚 (PBDE類) PolyBrominated	多溴二苯醚；聚溴二苯醚； PBDE；PBDO；PBBE	Polybromodiphenyl ethers; polybromodiphenyloxides; polybrominated biphenyl ethers; PBDE; PBDO; PBBE	C ₁₂ H _{10-x} Br _x O(x=1-10)	-

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 16 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
Diphenyl Ethers (PBDE)	一溴二苯醚	Bromodiphenyl ether	C ₁₂ H ₉ BrO	101-55-3
	二溴二苯醚	Dibromodiphenyl ether	C ₁₂ H ₈ Br ₂ O	2050-47-7
	三溴二苯醚	Tribromodiphenyl ether	C ₁₂ H ₇ Br ₃ O	49690-94-0
	四溴二苯醚	Tetrabromodiphenyl ether	C ₁₂ H ₆ Br ₄ O	40088-47-9
	2,2',4,4'-四溴聯苯醚	Tetrabromodiphenyl ether	C ₁₂ H ₆ Br ₄ O	5436-43-1
	3,3',4,4'-四溴聯苯醚	Tetrabromodiphenyl ether	C ₁₂ H ₆ Br ₄ O	93703-48-1
	3,3',5,5'-四溴聯苯醚	Tetrabromodiphenyl ether	C ₁₂ H ₆ Br ₄ O	103173-66-6
	五溴二苯醚；PentaBDE	Pentabromodiphenyl ether；pentabromodiphenyloxide；PentaBDE	C ₁₂ H ₅ Br ₅ O	32534-81-9
	2,2',4,4',5-五溴聯苯醚	Pentabromodiphenyl ether；pentabromodiphenyloxide；PentaBDE	C ₁₂ H ₅ Br ₅ O	60348-60-9
	2,3,4,5,6-五溴聯苯醚	Pentabromodiphenyl ether；pentabromodiphenyloxide；PentaBDE	C ₁₂ H ₅ Br ₅ O	189084-65-9
	六溴二苯醚	Hexabromodiphenyl ether；hexabromodiphenyloxide	C ₁₂ H ₄ Br ₆ O	36483-60-0;31153-30-7;116995-33-6
	2,2',4,4',6,6'-六溴聯苯醚	Hexabromodiphenyl ether；hexabromodiphenyloxide	C ₁₂ H ₄ Br ₆ O	35854-94-5
	2,2',4,4',5,5'-六溴聯苯醚	Hexabromodiphenyl ether；hexabromodiphenyloxide	C ₁₂ H ₄ Br ₆ O	68631-49-2
	2,2',4,4',5,6'-六溴聯苯醚	Hexabromodiphenyl ether；hexabromodiphenyloxide	C ₁₂ H ₄ Br ₆ O	207122-15-4
	七溴二苯醚	Heptabromodiphenyl ether	C ₁₂ H ₃ Br ₇ O	68928-80-3;116995-32-5
	2,2',3,4,4',6,6'-七溴聯苯醚	Heptabromodiphenyl ether	C ₁₂ H ₃ Br ₇ O	117948-63-7
	2,2',3,4,4',5,6-七溴聯苯醚	Heptabromodiphenyl ether	C ₁₂ H ₃ Br ₇ O	207122-16-5
	2,2',3,3',4,5,6-七溴二苯醚	Heptabromodiphenyl ether	C ₁₂ H ₃ Br ₇ O	446255-22-7
	八溴二苯醚；OBDE；OctaBDE	Octabromodiphenyl ether；octabromodiphenyloxide；OBDE；OctaBDE	C ₁₂ H ₂ Br ₈ O	32536-52-0
	九溴二苯醚	Nonabromodiphenyl ether	C ₁₂ HBr ₉ O	63936-56-1
十溴二苯醚；DBDE；DecaBDE；DBDPE；DBDPO	Decabromodiphenyl ether；decabromodiphenyloxide；DBDE；DecaBDE；DBDPE；DBDPO	C ₁₂ Br ₁₀ O	1163-19-5	
含溴阻燃劑 (BFRs)(PBB或PBDE除外)(例如四溴雙酚A) Brominated flame retardants	含溴阻燃劑(PBB或PBDE除外)(例如四溴雙酚A)	Brominated flame retardants(other than PBBs or PBDEs)(e.g. Tetrabromobisphenol-A)	-	-
	4,5,6-四溴-1,2-苯二羧酸雙(2-乙基己基)酯	1,2-Benzenedicarboxylic acid, 3,4,5,6-tetrabromo-, bis(2-ethylhexyl) ester	C ₂₄ H ₃₄ Br ₄ O ₄	26040-51-7
	溴化1,3-丁二烯均聚物	1,3-Butadiene homopolymer, brominated	-	68441-46-3
	雙酚A二縮水甘油醚	Bisphenol A diglycidyl ether	C ₁₈ H ₁₇ Br ₄ ClO ₃	40039-93-8
	三(2,3-二溴丙基)異氰尿酸酯	Tris(2,3-dibromopropyl) isocyanurate	C ₁₂ H ₁₅ Br ₆ N ₃ O ₃	52434-90-9
	三溴苯酚；2,4,6-三溴苯酚	Bromol；2,4,6-Tribromophenol	C ₆ H ₃ Br ₃ O	118-79-6
	2,3-二溴-1-丙醇	2,3-Dibromo-1-propanol	C ₃ H ₆ Br ₂ O	96-13-9
2,4,6-三溴苯胺	2,4,6-Tribromoaniline	C ₆ H ₄ Br ₃ N	147-82-0	

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 17 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	2,4,6-三溴苯基烯丙基醚	Allyl 2,4,6-tribromophenyl ether	C ₉ H ₇ Br ₃ O	3278-89-5
	四溴乙烷	1,1,2,2-Tetrabromoethane ; Acetylene tetrabromide	C ₂ H ₂ Br ₄	79-27-6
	四溴鄰苯二甲酸酐	Tetrabromophthalic anhydride	C ₈ Br ₄ O ₃	632-79-1
	五溴苄基丙烯酸(單體)	Pentabromo-benzyl-acrylate(monomer)	C ₁₀ H ₅ Br ₅ O ₂	59447-55-1
	五溴苄基丙烯酸(聚合體)	Pentabromo-benzyl-acrylate(polymer)	(C ₁₀ H ₅ Br ₅ O ₂) _x	59447-57-3
	六溴苯	Hexabromobenzene	C ₆ Br ₆	87-82-1
	十溴二苯乙烷	Decabromo-diphenyl-ethane	C ₁₄ H ₄ Br ₁₀ O ₂	61262-53-1
	三溴苯基順丁烯二醯甲胺	Tribromo-bisphenyl-maleinimide	C ₁₀ H ₄ Br ₃ NO ₂	59789-51-4
	六溴環十二烷及其主要異構物	Hexabromo-cyclododecane(HBCDD) and all major diastereoisomers identified	C ₁₂ H ₁₈ Br ₆	25637-99-4;3194-55-6;134237-50-6;134237-51-7;134237-52-8
	四溴雙酚A(TBBA)	Tetrabromo bisphenol A	C ₁₅ H ₁₂ Br ₄ O ₂	79-94-7
	四溴雙酚A-雙酚A-碳醯氯的聚合物	TBBA-bisphenol A-phosgene polymer	(C ₁₅ H ₁₆ O ₂ .C ₁₅ H ₁₂ Br ₄ O ₂ .C _{Cl₂}) _x	32844-27-2
	溴化環氧樹脂,分子末端為三溴苯酚,型號 EC14	Brominated epoxy resin end-capped with triebromophenol-pratherm EC14	-	139638-58-7
	溴化環氧樹脂,分子末端為三溴苯酚,型號 EC20	Brominated epoxy resin end-capped with triebromophenol-pratherm EC20	-	135229-48-0
	四溴雙酚A-對-(2-羥基乙氧基)	TBBA bis-(2-hydroxy-ethyl-ether)	C ₁₉ H ₂₀ Br ₄ O ₄	4162-45-2
	四溴雙酚A-對-(烯丙基醚)	TBBA-bis-(allyl-ether)	C ₂₁ H ₂₀ Br ₄ O ₂	25327-89-3
	四溴雙酚A 二甲基醚	TBBA-dimethyl-ether	C ₁₇ H ₁₆ Br ₄ O ₂	37853-61-5
	四溴雙酚S	Tetrabromobisphenol S	C ₁₂ H ₆ Br ₄ O ₄ S	39635-79-5
	四溴雙酚S 雙(2,3-二溴丙基醚)	TBBS-bis-(2,3-dibromo-propyl-ether)	C ₁₈ H ₁₄ Br ₈ O ₄ S	42757-55-1
	苯氧基封端四溴雙酚-A 碳酸酯齊聚物	TBBPA carbonate oligomer BC52	(C ₇ H ₅ O ₂). (C ₁₆ H ₁₀ Br ₄ O ₃) _n . (C ₆ H ₅ O)	94334-64-2
	2,4-二溴苯酚	2,4-Dibromophenol	C ₆ H ₄ Br ₂ O	615-58-7
	五溴苯酚	Pentabromophenol	C ₆ HBr ₅ O	608-71-9
	三溴苯基烯丙基醚	Tribromo-phenyl-allyl-ether, unspecified	C ₉ H ₇ Br ₃ O	26762-91-4
	雙(甲基)四溴鄰苯二甲酸脂	Bis(methyl)tetrabromophthalate	-	55481-60-2
	四溴苯二甲酸-2-(2-羥基乙氧基)乙基-2-羥基丙基酯	Phthalic acid, tetrabromo-, 2-(2-hydroxyethoxy)ethyl 2-hydroxypropyl ester	C ₁₅ H ₁₆ Br ₄ O ₇	20566-35-2
	四溴鄰苯二甲酸酐,乙二醇氧化丙烯脂	TBPA, glycol-and-propylene-oxide esters	C ₁₅ H ₂₀ Br ₄ O ₉	75790-69-1
	四溴鄰苯二甲醯胺	N,N-Ethylene-bis(tetrabromophthalimide)	C ₁₈ H ₄ Br ₈ N ₂ O ₄	32588-76-4
	N,N'-1,2-乙烷雙(5,6-二溴降冰片烷-2,3-二酞亞胺)	N,N'-(1,2-Ethanebis(5,6-dibromonorbornane-2,3-dicarboximide))	C ₂₀ H ₂₀ Br ₄ N ₂ O ₄	52907-07-0
	2,3-二溴-2-丁烯-1,4-二醇	2,3-dibromo-2-butene-1,4-diol	C ₄ H ₆ Br ₂ O ₂	3234-02-4
	二溴新戊乙二醇	Dibromoneopentyl glycol	C ₅ H ₁₀ Br ₂ O ₂	3296-90-0
	三溴新戊醇	Tribromoneopentyl alcohol	C ₅ H ₉ Br ₃ O	36483-57-5
	聚三溴苯乙烯	Poly tribromostyrene	(C ₈ H ₅ Br ₃) _n	57137-10-7
	三溴苯乙烯	Tribromostyrene	C ₈ H ₅ Br ₃	61368-34-1
	聚丙烯(PP)接枝的二溴苯乙烯	Dibromostyrene grafted PP	-	171091-06-8
	聚二溴苯乙烯	Poly-dibromostyrene	C ₈ H ₆ Br ₂	31780-26-4

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 18 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	溴化/氯化石蠟	Alkanes, C10-18, bromo chloro	-	68955-41-9
	溴化/氯化- α -烯烴	Bromo Chloro-alpha-olefin	-	82600-56-4
	溴乙烯	Vinylbromide	C ₂ H ₃ Br	593-60-2
	三(2,3-二溴丙基)異氰尿酸酯	Tris(2,3-dibromopropyl) isocyanurate	C ₁₂ H ₁₅ Br ₆ N ₃ O ₃	52434-90-9
	三(2,4-二溴苯)磷酸酯	Tris(2,4-Dibromo-phenyl) phosphate	C ₁₈ H ₉ Br ₆ O ₄ P	49690-63-3
	三(三溴新戊基)磷酸酯	Tris(Tribromoneopentyl) phosphate	C ₁₅ Br ₉ H ₂₄ PO ₄	19186-97-1
	氯化和溴化磷酸酯	Chlorinated and brominated phosphate ester	-	125997-20-8
	五溴甲苯	Pentabromotoluene	C ₇ H ₃ Br ₅	87-83-2
	五溴苯基溴化物	Pentabromobenzyl bromide	C ₇ H ₂ Br ₆	38521-51-6
	十溴二苯乙烷	Decabromodiphenylethane	C ₁₄ H ₄ Br ₁₀	84852-53-9
	溴化三甲基苯基-二氯化印	Brominated trimethylphenyl-lindane	-	59789-51-4
	四溴環辛烷	Tetrabromocyclooctane	-	31454-48-5;3194-57-8
	1,2-二溴-4-(1,2-二溴乙基)環己烷	1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane	C ₈ H ₁₂ Br ₄	3322-93-8
	四溴鄰苯二甲酸酐鈉鹽	TBPA na salt	-	25357-79-3
	聚二溴苯醚	Poly(2,6-dibromophenol oxide)	(C ₆ H ₂ Br ₂ O) _n	69882-11-7
	十四溴-1,4-二苯氧基苯	Tetradecabromodiphenoxybenzene	C ₁₈ Br ₁₄ O ₂	58965-66-5
	1,2-雙(2,4,6-三溴苯氧基)乙烷	1,2-Bis(2,4,6-tribromophenoxy)ethane	C ₁₄ H ₈ Br ₆ O ₂	37853-59-1
	2,4,6-三溴苯氧基封端四溴雙酚-A 碳酸酯齊聚物	2,4,6-Tribromophenyl-terminated tetrabromobisphenol-A carbonate oligomer	(C ₇ H ₂ Br ₃ O ₂). (C ₁₆ H ₁₀ Br ₄ O ₃) _n . (C ₆ H ₂ Br ₃ O)	71342-77-3
	四溴雙酚-A 碳酸酯低聚物	TBBA carbonate oligomer	(C ₁₅ H ₁₂ Br ₄ O ₂ .CCl ₂ O) _x	28906-13-0
	溴化酚氧樹脂	Brominated phenoxy resin	-	70682-74-5
	四溴雙酚 A(結構未確定)	TBBA, unspecified	-	30496-13-0
	ISO 1043-4 編號 FR(14)(脂肪族/脂環式含溴化合物)中的含溴阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14)(Aliphatic/alicyclic brominated compounds)	-	-
	ISO 1043-4 編號 FR(15)(脂肪族/脂環式含溴化合物與銻化合物)中的含溴阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15)(Aliphatic/alicyclic brominated compounds in combination with antimony compounds)	-	-
	ISO 1043-4 編號 FR(16)((芳香族含溴化合物(溴化二苯及溴化二苯醚除外))中的含溴阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16)(Aromatic brominated compounds excluding brominated diphenylether and biphenyls)	-	-
	ISO 1043-4 編號 FR(17)((芳香族含溴化合物(溴化二苯及溴化二苯醚除外)與銻化合物的結合物)中的含溴阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17)(Aromatic brominated compounds excluding brominated diphenylether and biphenyls in combination with antimony compounds)	-	-

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 19 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	ISO 1043-4 編號 FR(22)(脂肪族/脂環式含氯或含溴化合物中的含溴阻燃劑)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22)(Aliphatic/alicyclic chlorinated and brominated compounds)	-	-
	ISO 1043-4 編號 FR(42)(含溴有機磷化合物中的含溴阻燃劑)	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42)(Brominated organic phosphorus compounds)	-	-
	四溴雙酚A雙(二溴丙基)醚	Tetrabromobisphenol A bis(dibromopropyl ether)	C ₂₁ H ₂₀ Br ₈ O ₂	21850-44-2
	雙酚A	Bisphenol-A(BPA)	C ₁₅ H ₁₆ O ₂	80-05-7
	磷酸三(2,3-二溴丙基)酯	Tris(2,3 dibromopropyl) phosphate	C ₉ H ₁₅ Br ₆ O ₄ P	126-72-7
	三氯生	Triclosan	C ₁₂ H ₇ Cl ₃ O ₂	3380-34-5
	其他含溴阻燃劑(BFRs)	Other brominated flame retardants(BFRs)	-	-
含氯阻燃劑(CFRs) Chlorinated Flame Retardants	多氯聯苯(PCB)	Polychlorinated biphenyls(PCB)	C ₁₂ H _{10-x} Cl _x (x=1-10)	1336-36-3
	多氯三聯苯(PCT)	Polychlorinated terphenyls(PCT)	C ₁₈ H _{14-x} Cl _x (x=1-14)	61788-33-8
	氯化三聯苯	Aroclor	C ₁₂ H _{10-x} Cl _x	12767-79-2
	多氯聯苯	Aroclor 1260	C ₁₂ H ₃ Cl ₇	11096-82-5
	多氯聯苯	1,1'-Biphenyl, chloro-	C ₁₂ H ₉ Cl	27323-18-8
	多氯聯苯	Kanechlor 500	-	37317-41-2
	多氯聯苯	Aroclor 1254	C ₆ HCl ₅	11097-69-1
	三聯苯	Terphenyls	C ₁₈ H ₁₄	26140-60-3
	多氯化萘(PCN)	Polychlorinated naphthalenes	C ₁₀ H _{8-x} Cl _x (C≥3)	70776-03-3
	三氯化萘	Trichloronaphthalene	C ₁₀ H ₅ Cl ₃	1321-65-9
	四氯化萘	Tetrachloronaphthalene	C ₁₀ H ₄ Cl ₄	1335-88-2
	五氯化萘	Pentachloronaphthalene	C ₁₀ H ₃ Cl ₅	1321-64-8
	六氯化萘	Hexachloronaphthalene	C ₁₀ Cl ₆	1335-87-1
	七氯化萘	Heptachloronaphthalene	C ₁₀ Cl ₇	32241-08-0
	八氯化萘	Octachloronaphthalene	C ₁₀ Cl ₈	2234-13-1
	二氯苯	Dichlorobenzene	C ₆ H ₄ Cl ₂	25321-22-6
	三氯苯	Trichlorobenzenes	C ₆ H ₃ Cl ₃	12002-48-1
	四氯苯	Tetrachlorobenzene	C ₆ H ₂ Cl ₄	12408-10-5
	1,2-二氯苯	1,2-Dichlorobenzene	C ₆ H ₄ Cl ₂	95-50-1
	1,4-二氯苯	1,4-Dichlorobenzene	C ₆ H ₄ Cl ₂	106-46-7
	1,2,3-三氯苯	1,2,3-Trichlorobenzene	C ₆ H ₃ Cl ₃	87-61-6
	1,2,4-三氯苯	1,2,4-Trichlorobenzene	C ₆ H ₃ Cl ₃	120-82-1
	1,3,5-三氯苯	1,3,5-Trichlorobenzene	C ₆ H ₃ Cl ₃	108-70-3
	1,2,4,5-四氯苯	1,2,4,5-Tetrachlorobenzene	C ₆ H ₂ Cl ₄	95-94-3
	1,2,3,5-四氯苯	1,2,3,5-Tetrachlorobenzene	C ₆ H ₂ Cl ₄	634-90-2
	1,2,3,4-四氯苯	1,2,3,4-Tetrachlorobenzene	C ₆ H ₂ Cl ₄	634-66-2
	五氯苯	Pentachlorobenzene	C ₆ HCl ₅	608-93-5
	六氯苯	Hexachlorobenzene	C ₆ Cl ₆	118-74-1
	十氯苯	Chlordecone	C ₁₀ Cl ₁₀ O	143-50-0
	六氯乙烷	Hexachloroethane	C ₂ Cl ₆	67-72-1

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 20 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	短鏈氯化石蠟	Short-chain Chlorinated paraffins(C10-13)	-	85535-84-8
	中鏈氯化石蠟	Medium-chained Chlorinated paraffins(C14-17)	-	85538-85-9
	其他短鍊氯化石蠟類	Other Short Chain Chlorinated Paraffin	-	-
	其他PCB類	Other polychlorinated biphenyls	-	-
	其他 PCT 類	Other polychlorinated terphenyls	-	-
	其他 PCN 類	Other polychlorinated Naphthalenes	-	-
	其他含氯阻燃劑(CFRs)	Other Chlorinated Flame Retardants(CFRs)	-	-
持久性有機污染物 (POPs) Persistent Organic Pollutants (POPs)	滅蟻靈	Mirex	C ₁₀ Cl ₁₂	2385-85-5
	氯丹	Chlordanes	C ₁₀ H ₆ Cl ₈	57-74-9;12789-03-6
	二氯二苯三氯乙烷	DDT	C ₁₄ H ₉ Cl ₅	50-29-3
	異狄氏劑	Endrin	C ₁₂ H ₈ Cl ₆ O	72-20-8
	狄氏劑	Dieldrin	C ₁₂ H ₈ Cl ₆ O	60-57-1
	毒殺芬	Toxaphene	C ₁₀ H ₁₀ Cl ₈	8001-35-2
	艾氏劑	Aldrin	C ₁₂ H ₈ Cl ₆	309-00-2
	飛佈達	Heptachlor	-	-
	三氯殺蟎醇	Dicofol	C ₁₄ H ₉ Cl ₅ O	115-32-2
	氯化苯	Chlorobenzene	C ₆ H ₅ Cl	108-90-7
	靈丹	Lindane	C ₆ H ₆ Cl ₆	58-89-9
乙烯基乙二醇醚及其醋酸酯 Ethylene based glycol ethers and its acetate	乙二醇單甲醚;2-甲氧基乙醇, 甲氧基乙醇	Ethylene glycol monomethyl ether; 2-Methoxyethanol;Methoxyethanol	C ₃ H ₈ O ₂	109-86-4;32718-54-0
	乙二醇甲醚乙酸酯	Ethylene glycol monomethyl ether acetate	C ₅ H ₁₀ O ₃	110-49-6
	二乙二醇二甲醚	Diethylene glycol dimethyl ether	C ₆ H ₁₄ O ₃	111-96-6
	乙二醇單乙醚;2-乙氧基乙醇	Ethylene glycol monoethyl ether; 2-Ethoxyethanol	C ₄ H ₁₀ O ₂	110-80-5
	乙二醇乙醚乙酸酯	Ethylene glycol monoethyl ether acetate	C ₆ H ₁₂ O ₃	111-15-9
	二乙二醇單甲醚	2-(2-Methoxyethoxy)ethanol (DEGME)	C ₅ H ₁₂ O ₃	111-77-3
	二乙二醇單丁醚	2-(2-Butoxyethoxy)ethanol (DEGBE)	C ₈ H ₁₈ O ₃	112-34-5
	二苯基亞甲基二異氰酸酯	Methylenediphenyl diisocyanate (MDI)	C ₁₅ H ₁₀ N ₂ O ₂	26447-40-5;101-68-8
	環己烷	Cyclohexane	C ₆ H ₁₂	110-82-7
全氟辛烷磺酸及其化合物	全氟辛烷磺酸(PFOS)	Perfluorooctane sulfonates	C ₈ HF ₁₇ O ₃ S	1763-23-1
	全氟辛酸(PFOA)	Perfluorooctanoic acid	C ₈ F ₁₅ O ₂ ; C ₈ HF ₁₅ O ₂	335-67-1
	全氟烷基磺酸鹽(PFAS)	Perfluoro alkyl sulfonates	-	-
	全氟辛基磺酸鉀	Perfluorooctanesulfonic acid potassium salt	C ₈ F ₁₇ SO ₂ X;C ₈ HF ₁₇ KO ₃ S	2795-39-3
	辛烷磺酸鋰	Lithium perfluorooctane sulfonate	C ₈ HF ₁₇ O ₃ S.Li	29457-72-5
石棉類 Asbestos	陽起石	Actinolite	Ca ₂ (Mg,Fe) ₅ Si ₈ O ₂₂ (OH) ₂	77536-66-4(13768-00-8)
	鐵石綿	Amosite	(Mg,Fe) ₇ Si ₈ O ₂₂ (OH) ₂	12172-73-5
	直閃石	Anthophyllite	(Mg,Fe) ₇ Si ₈ O ₂₂ (OH) ₂	77536-67-5(17068-78-9)
	溫石棉	Chrysotile	Mg ₃ Si ₂ O ₅ (OH) ₄	12001-29-5
	藍石棉	Crocidolite	Na ₂ Fe ₅ (Si ₈ O ₂₂)(OH) ₂	12001-28-4
	透閃石	Tremolite	Ca ₂ Mg ₅ Si ₈ O ₂₂ (OH) ₂	77536-68-6(14567-73-8)

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 21 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	青石棉	Crocidolite	-	1332-21-4
	其他石棉類	Other asbestos	-	-
	能生成特定的胺類物質的染料或燃料	Azo dyes forming certain amines	-	-
	4-氨基聯苯	4-aminodiphenyl	C ₁₂ H ₁₁ N	92-67-1
	聯苯胺	Benzidine	C ₁₂ H ₁₂ N ₂	92-87-5
	4-氯聯甲苯胺	4-chloro-o-toluidine	C ₇ H ₈ ClN	95-69-2
	2-萘胺	2-naphthylamine	C ₁₀ H ₉ N	91-59-8
	鄰胺基偶氮甲苯	o-aminoazotoluene	C ₁₄ H ₁₅ N ₃	97-56-3
	2-氨基-4-硝基甲苯	2-amino-4-nitrotoluene	C ₇ H ₈ N ₂ O ₂	99-55-8
	4-氯苯胺	p-chloroaniline	C ₆ H ₆ ClN	106-47-8
	2,4-二氨基苯甲醚	2,4-diaminoanisole	C ₇ H ₁₀ N ₂ O	615-05-4
特定偶氮化合物 Specific Azo compounds	4,4-二氨基二苯甲烷	4,4-diaminodiphenylmethane	C ₁₃ H ₁₄ N ₂	101-77-9
	3,3-二氯聯苯胺	3,3-dichlorobenzidine	C ₁₂ H ₁₀ Cl ₂ N ₂	91-94-1
	3,3-二甲氧基聯苯胺	3,3-dimethoxybenzidine	C ₁₄ H ₁₆ N ₂ O ₂	119-90-4
	3,3-二甲基聯苯胺	3,3-dimethylbenzidine	C ₁₄ H ₁₆ N ₂	119-93-7
特定胺化合物 Specific Amine compounds	3,3-二甲基-4,4-二氨基二苯甲烷	3,3-dimethyl-4,4-diaminodiphenylmethane	C ₁₅ H ₁₈ N ₂	838-88-0
	5-甲基鄰茴香甲胺	p-cresidine	C ₈ H ₁₁ NO	120-71-8
	4,4-二氨基-3,3'-二氯二苯甲烷	4,4-methylene-bis(2-chloroaniline)	C ₁₃ H ₁₂ Cl ₂ N ₂	101-14-4
	4,4-二氨基聯苯醚	4,4-oxideaniline	C ₁₂ H ₁₂ N ₂ O	101-80-4
	4,4-二氨基二苯硫醚	4,4-thiodianiline	C ₁₂ H ₁₂ N ₂ S	139-65-1
	鄰甲苯胺	o-toluidine	C ₇ H ₉ N	95-53-4
	2,4-二氨基甲苯	2,4-toluylenediamine	C ₇ H ₁₀ N ₂	95-80-7
	2,4,5-三甲基苯胺	2,4,5-trimethylaniline	C ₉ H ₁₃ N	137-17-7
	鄰甲氧基苯胺	o-anisidine	C ₇ H ₉ NO	90-04-0
	2,4-二甲基苯胺	2,4-Dimethylaniline	C ₈ H ₁₁ N	95-68-1
	2,6-二甲基苯胺	2,6-Dimethylaniline	C ₈ H ₁₁ N	87-62-7
	4-氨基偶氮苯	4-aminoazobenzene	C ₁₂ H ₁₁ N ₃	60-09-3
臭氧層破壞物質 (ODS)(含異構體) 詳見附錄三(種類繁多僅舉例部份項目) Ozone Depleting Substances Appendix 3	CFC (蒙特利爾協定附件A組 I)	CFCs(Annex A Group I substances in the Montreal Protocol)	← Class I	-
	其他CFC (蒙特利爾協定附件B組 I)	CFCs(Annex B Group I substances in the Montreal Protocol)	← Class I	-
	其他氟氯碳化物(CFC)禁用物質	Other CFCs prohibited by Montreal Protocol	-	-
	海龍 (蒙特利爾協定附件A組 II)	Halons(Annex A Group II substances in the Montreal Protocol)	← Class I	-
	其他海龍禁用物質	Other Halons prohibited by Montreal Protocol	-	-
	氯化碳 (蒙特利爾協定附件B組 II)	Carbon tetrachloride(Annex B Group II substance in the Montreal Protocol)	← Class I	-
	1,1,1-三氯乙烷 (蒙特利爾協定附件B組 III)	1,1,1-trichloroethane(Annex B Group III substance in the Montreal Protocol)	← Class I	-
	氯溴甲烷 (蒙特利爾協定附件C組 III)	Bromochloromethane(Annex C Group III)	← Class I	-

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 22 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	C組III)	substance in the Montreal Protocol)		
	溴甲烷 (蒙特利爾協定附件E)	Methyl bromide(Annex E substance in the Montreal Protocol)	← Class I	-
	HBFC (蒙特利爾協定附件C組II)	HBFCs(Annex C Group II substances in the Montreal Protocol)	← Class I	-
	其他溴氟烴化物(HBFC)禁用物質	Other HBFCs prohibited by Montreal Protocol	-	-
	HCFC (蒙特利爾協定附件C組I)	HCFCs(Annex C Group I substances in the Montreal Protocol)	← Class II	-
	其他氟氯烴化物(HCFC)禁用物質	Other HCFCs prohibited by Montreal Protocol	-	-
	其他脂肪族氯碳氧化合物	Other aliphatic CHCs compounds	-	-
多苯環芳香族化合物(PAHs)	二氫芴	Acenaphthene	C ₁₂ H ₁₀	83-32-9
	芴	Acenaphthylene	C ₁₂ H ₈	208-96-8
	蒽	Anthracene	C ₁₄ H ₁₀	120-12-7
	苯並(a)蒽	Benzo(a)anthracene	C ₁₈ H ₁₂	56-55-3
	苯並(a)芘	Benzo(a)pyrene	C ₂₀ H ₁₂	50-32-8
	苯並(b)熾蔥	Benzo(b)fluoranthene	C ₂₀ H ₁₂	205-99-2
	苯並(e)芘	Benzo[e]pyren	C ₂₀ H ₁₂	192-97-2
	苯並(g,h,i)芘	Benzo(g,h,i)perylene	C ₂₂ H ₁₂	191-24-2
	苯並(j)熾蔥	Benzo[j]fluoranthene	C ₂₀ H ₁₂	205-82-3
	苯並(k)熾蔥	Benzo(k)fluoranthene	C ₂₀ H ₁₂	207-08-9
	屈	Chrysene	C ₁₈ H ₁₂	218-01-9
	二苯並(a,h)蒽	Dibenz(a,h)anthracene	C ₂₂ H ₁₄	53-70-3
	熾蔥	Fluoranthene	C ₁₆ H ₁₀	206-44-0
	芴	Fluorene	C ₁₃ H ₁₀	86-73-7
	茛並(1,2,3-cd)芘	Indeno(1,2,3-cd)pyrene	C ₂₂ H ₁₂	193-39-5
	萘	Naphthalene	C ₁₀ H ₈	91-20-3
	菲	Phenathrene	C ₁₄ H ₁₀	85-01-8
芘	Pyrene	C ₁₆ H ₁₀	129-00-0	
苯二胺類化合物 N-p-phenylenediamine	N,N'-二甲苯基對苯二胺	N,N'-Ditolyl-p-phenylenediamine	C ₂₀ H ₂₀ N ₂	21417-40-9
	N-甲苯基-N'-二甲苯基對苯二胺	N-tolyl-N'-xylyl-p-phenylenediamine	-	26-30-9
	N,N'-二(二甲苯基)對苯二胺	N,N'-dixylyl-p-phenylenediamine	-	70290-05-0
鹵素 Halogen	溴(Br)	Bromine	Br	7726-95-6
	氯(Cl)	Chlorine	Cl	7782-50-5
二氯化鈷 Cobalt dichloride	二氯化鈷	Cobalt dichloride	CoCl ₂	7646-79-9
特定苯並三氮唑 Specific benzotriazole	2-(3',5'-二叔丁基-2'-羥基苯基)苯並三氮唑; 2-(2'-羥基-3',5'-二叔丁基苯基)-苯並三氮唑	2-(3',5'-Di-tert-butyl-2'-hydroxyphenyl)benzotriazole; 2-(2'-Hydroxy-3',5'-di-tert-butylphenyl)benzotriazole	C ₂₀ H ₂₅ N ₃ O	3846-71-7
聚氯乙烯以及聚氯乙烯混合物(PVC)	聚氯乙烯以及聚氯乙烯混合物	PVC and PVC blends; polyvinyl chloride and polyvinyl chloride blends	(C ₂ H ₃ Cl) _n	9002-86-2
甲醛	甲醛	Formaldehyde; formalin; formic	CH ₂ O	50-00-0

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 23 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
Formaldehyde		aldehyde; formol		
氧化鈹	氧化鈹	Beryllium oxide	BeO	1304-56-9
鈹青銅	鈹青銅	Beryllium copper	-	-
放射性物質 Radioactive Substances	鈾	Uranium	U	7440-61-1
	鈾	Plutonium	Pu	7440-07-5
	釷	Thorium	Th	7440-29-1
	氡	Radon	Rn	10043-92-2
	錒	Americium	Am	7440-35-9
	銫	Cesium	Cs	7440-46-2
	銣	Strontium	Sr	7440-24-6
	錒	Curium	Cm	7440-51-9
	其他放射性物質	Other radioactive substances	-	-
特定鄰苯二甲酸鹽 Phthalates	鄰苯二甲酸二(2-乙基己基)酯	Di(2-ethylhexyl) phthalate(DEHP)	C ₂₄ H ₃₈ O ₄	117-81-7
	鄰苯二甲酸二丁酯	Dibutyl phthalate(DBP)	C ₁₆ H ₂₂ O ₄	84-74-2
	鄰苯二甲酸丁苄酯	Benzyl butyl phthalate (BBP)	C ₁₉ H ₂₀ O ₄	85-68-7
	鄰苯二甲酸二異壬酯	Di-isononyl phthalate (technical mixture)(DINP)	C ₂₆ H ₄₂ O ₄	28553-12-0;68515-48-0
	鄰苯二甲酸二異癸酯	Di-isodecyl phthalate (technical mixture)(DIDP)	C ₂₈ H ₄₆ O ₄	26761-40-0;68515-49-1
	鄰苯二甲酸二正辛酯	Di-n-octyl phthalate(DNOP)	C ₂₄ H ₃₈ O ₄	117-84-0
	鄰苯二甲酸二己酯	Di-n-hexyl phthalate(DNHP)	C ₂₀ H ₃₀ O ₄	84-75-3
	鄰苯二甲酸二甲脂	Dimethyl phthalate(DMP)	C ₁₀ H ₁₀ O ₄	131-11-3
	鄰苯二甲酸二乙脂	Diethyl phthalate(DEP)	C ₁₂ H ₁₄ O ₄	84-66-2
	鄰苯二甲酸二(2-甲氧乙基)酯	Bis(2-methoxyethyl) phthalate(DMEP)	C ₁₄ H ₁₈ O ₆	117-82-8
	鄰苯二甲酸二異丁脂	Diisobutyl phthalate(DIBP)	C ₁₆ H ₂₂ O ₄	84-69-5
	磷酸三(2-氯乙基)酯	Tris(2-chloroethyl) phosphate	C ₆ H ₁₂ Cl ₃ O ₄ P	111-59-6
其他鄰苯二甲酸鹽	Other phthalate	-	-	
全氟化碳化合物 Perfluorocarbons(P FCs)	四氟甲烷；四氟化碳	Carbon tetrafluoride ; Perfluoromethane	CF ₄	75-73-0
	全氟乙烷；六氟乙烷	Perfluoroethane ; Hexafluoroethane	C ₂ F ₆	76-16-4
	全氟丙烷；八氟丙烷	Perfluoropropane ; Octafluoropropane	C ₃ F ₈	76-19-7
	全氟丁烷；十氟丁烷	Perfluorobutane ; Decafluorobutane	C ₄ F ₁₀	355-25-9
	全氟戊烷；十二氟戊烷	Perfluoropentane ; Dodecafluoropentane	C ₅ F ₁₂	678-26-2
	全氟己烷；十四氟己烷	Perfluorohexane ; Tetradecafluorohexane	C ₆ F ₁₄	355-42-0
	八氟環丁烷	Perfluorocyclobutane	C ₄ F ₈	115-25-3
	三氟化氮	Perfluoroammonia	F ₃ N	7783-54-2
	全氟庚烷	Perfluoroheptane	C ₇ F ₁₆	335-57-9
	全氟辛烷	Perfluorooctane	C ₈ F ₁₈	307-34-6
	其他全氟化碳化合物	Other PFCs compounds	-	-
氫氟碳化合物 Hydrofluorocarbons (HFCs)	三氟甲烷	Trifluoromethane(HFC-23)	CHF ₃	75-46-7
	二氟甲烷	Difluoromethane(HFC-32)	CH ₂ F ₂	75-10-5
	氟甲烷	Methyl fluoride(HFC-41)	CH ₃ F	593-53-3
	2H,3H-全氟戊烷	2H,3H-Decafluoropentane(HFC-43-10me e)	C ₅ H ₂ F ₁₀	138495-42-8
	五氟乙烷	Pentafluoroethane(HFC-125)	C ₂ HF ₅	354-33-6

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Manual Procedure WI Spec. Engineering Doc Company Regulation

Confidential Level A B C

Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 24 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	1,1,2,2-四氟乙烷	1,1,2,2-Tetrafluoroethane(HFC-134)	C ₂ H ₂ F ₄	359-35-3
	1,1,1,2-四氟乙烷	1,1,1,2-Tetrafluoroethane(HFC-134a)	C ₂ H ₂ F ₄	811-97-2
	1,1,2-三氟乙烷	1,1,2-Trifluoroethane(HFC-143)	C ₂ H ₃ F ₃	430-66-0
	1,1,1-三氟乙烷	1,1,1-Trifluoroethane(HFC-143a)	C ₂ H ₃ F ₃	420-46-2
	1,2-二氟乙烷	1,2-Difluoroethane(HFC-152)	C ₂ H ₄ F ₂	624-72-6
	1,1-二氟乙烷	1,1-Difluoroethane(HFC-152a)	C ₂ H ₄ F ₂	75-37-6
	一氟乙烷	Monofluoroethane(HFC-161)	C ₂ H ₅ F	353-36-6
	1,1,1,2,2,3,3-七氟丙烷	1,1,1,2,2,3,3-Heptafluoropropane(HFC-227ca)	C ₃ HF ₇	2252-84-8
	七氟丙烷	2H-Heptafluoropropane(JFC-227ea)	C ₃ HF ₇	431-89-0
	1,1,2,2,3,3-六氟丙烷	1,1,2,2,3,3-Hexafluoropropane(HFC-236ca)	C ₃ H ₂ F ₆	27070-61-7
	1,1,1,2,2,3-六氟丙烷	1,1,1,2,2,3-Hexafluoropropane(HFC-236cb)	C ₃ H ₂ F ₆	677-56-5
	1,1,1,2,3,3-六氟丙烷	1,1,1,2,3,3-Hexafluoropropane(HFC-236ca)	C ₃ H ₂ F ₆	431-63-0
	1,1,1,3,3,3-六氟丙烷	1,1,1,3,3,3-Hexafluoropropane(HFC-236fa)	C ₃ H ₂ F ₆	690-39-1
	1,1,2,2,3-五氟丙烷	1,1,2,2,3-Pentafluoropropane(HFC-245ca)	C ₃ H ₃ F ₅	679-86-7
	1,1,1,3,3-五氟丙烷	1,1,1,3,3-Pentafluoropropane(HFC-245fa)	C ₃ H ₂ F ₆	460-73-1
	1,1,1,3,3-五氟丁烷	1,1,1,3,3-Pentafluorobutane(HFC-365mfc)	C ₄ H ₅ F ₅	406-58-6
	1,1,2,2,3,3,4-七氟環戊烷	1,1,2,2,3,3,4-Heptafluorocyclopentane(HFC-c-447ef)	C ₅ H ₃ F ₇	15290-77-4
	其他氫氟碳化合物	Other HFCs compounds	-	-
六氟化硫 Sulfur hexafluoride	六氟化硫	Sulfur hexafluoride	F ₆ S	2551-62-4
其它有機化合物 Other organic compounds	富馬酸二甲酯	Dimethyl fumarate(DMF)	C ₆ H ₈ O ₄	624-49-7
	五氯苯酚	Pentachlorophenol(PCP)	C ₆ HCl ₅ O	87-86-5
	磷酸三苯酯	Triphenyl phosphate	C ₁₈ H ₁₅ O ₄ P	115-86-6
	氰化物	Cyanides	-	-
	三乙砷酸酯	Triethyl arsenate	C ₆ H ₁₅ AsO ₄	15606-95-8
	磷酸三(2-氯乙基)酯	Tris(2-chloroethyl) phosphate(TCEP)	C ₆ H ₁₂ Cl ₃ O ₄ P	115-96-8
鹵代二惡英和鹵化呋喃 Halogenated dioxins and furans	2,3,7,8-四氯二苯並對二惡英二惡項	2,3,7,8-T-CDD	C ₁₂ H ₄ Cl ₄ O ₂	1746-01-6
	-	1,2,3,7,8,9-Hexa-CDD	C ₁₂ H ₂ Cl ₆ O ₂	19408-74-3
	-	1,2,3,4,7,8-Hexa-CDD	C ₁₂ H ₂ Cl ₆ O ₂	39227-28-6
	-	1,2,3,7,8-Penta-CDD	C ₁₂ H ₃ Cl ₅ O ₂	40321-76-4
	-	2,3,7,8-Tetra-CDF	C ₁₂ H ₄ Cl ₄ O	51207-31-9
	-	2,3,4,7,8-Penta-CDF	C ₁₂ H ₃ Cl ₅ O	57117-31-4
	-	1,2,3,6,7,8-Hexa-CDF	C ₁₂ H ₂ Cl ₆ O	57117-44-9
	-	1,2,3,6,7,8-Hexa-CDD	C ₁₂ H ₂ Cl ₆ O ₂	57653-85-7
	-	1,2,3,7,8-Penta-CDF	C ₁₂ H ₃ Cl ₅ O	57117-41-6

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Manual Procedure WI Spec. Engineering Doc Company Regulation

Confidential Level A B C

Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 25 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
	-	1,2,3,4,7,8-Hexa-CDF	C ₁₂ H ₂ Cl ₆ O	70648-26-9
	-	1,2,3,7,8,9-Hexa-CDF	-	72918-21-9
	-	2,3,4,6,7,8-Hexa-CDF	C ₁₂ H ₂ Cl ₆ O	60851-34-5
	-	1,2,3,4,6,7,8-Hepta-CDD	C ₁₂ HCl ₇ O ₂	35822-46-9
	-	1,2,3,4,6,7,8,9-Octa-CDD	C ₁₂ Cl ₈ O ₂	3268-87-9
	-	1,2,3,4,6,7,8-Hepta-CDF	C ₁₂ HCl ₇ O	67562-39-4
	-	1,2,3,4,7,8,9-Hepta-CDF	C ₁₂ HCl ₇ O	55673-89-7
	-	1,2,3,4,6,7,8,9-Octa-CDF	C ₁₂ Cl ₈ O	39001-02-0
	-	2,3,7,8-Tetra-BDD	-	50585-81-6
	-	1,2,3,7,8-Penta-BDD	-	109333-34-8
	-	2,3,7,8-Tetra-BDF	C ₁₂ H ₄ Br ₄ O	67733-57-7
	-	2,3,4,7,8-Penta-BDF	-	131166-92-2
	-	1,2,3,4,7,8-Hexa-BDD	-	110999-44-5
	-	1,2,3,7,8,9-Hexa-BDD	-	110999-46-7
	-	1,2,3,6,7,8-Hexa-BDD	-	110999-45-6
	-	1,2,3,7,8-Penta-BDF	-	109333-34-8
苯 Benzene	苯	Benzene	C ₆ H ₆	71-43-2
	甲苯	Toluene	C ₇ H ₈	108-88-3
三-(1-吡丙啶基)氧化磷	三-(1-吡丙啶基)氧化磷	Tris(1-aziridinyl)-phosphine oxid	C ₆ H ₁₂ N ₃ OP	545-55-1
氯化溶劑	氯化溶劑	Chlorinated solvents	-	-
鹵化甲基聯苯 Halogenated diphenyl methanes	單甲基四氯聯苯甲烷	Monomethyl tetrachloro diphenyl methane	C ₁₄ H ₁₀ Cl ₄	76253-60-6
	單甲基二氯聯苯甲烷	Monomethyl dichloro diphenyl methane	C ₁₄ H ₁₂ Cl ₂	81161-70-8
	單甲基二溴聯苯甲烷	Monomethyl dibromo dipenyl methane(DBBT)	C ₁₄ H ₁₂ Br ₂	99688-47-8
高氯酸鹽 Perchlorates	高氯酸鋰	Lithium perchlorate	ClLiO ₄	7791-03-9
	高氯酸鎂	Magnesium perchlorate	Cl ₂ H ₂ MgO ₉	10034-81-8
	高氯酸鋅	Zinc perchlorate	Cl ₂ H ₁₂ O ₁₄ Zn	10025-64-6
	-	Perchlorate	ClO ₄	14797-73-0
氣味物質 Fragrance substance	二甲苯麝香	Musk xylene	C ₁₂ H ₁₅ N ₃ O ₆	81-15-2
	酮麝香;麝香酮	Musk ketone	C ₁₆ H ₃₀ O ₆ ; C ₁₄ H ₁₈ N ₂ O ₅	541-91-3;81-14-1
2,4,6-三叔丁基苯酚 2,4,6-Tri-tert-butylphenol	2,4,6-三叔丁基苯酚	2,4,6-Tri-tert-butylphenol	C ₁₈ H ₃₀ O	732-26-3
N-(1-甲基乙基)-N'-苯基-1,4-苯二胺 N-Isopropyl-N'-phenyl-p-phenylene diamine	N-(1-甲基乙基)-N'-苯基-1,4-苯二胺	N-Isopropyl-N'-phenyl-p-phenylene diamine	C ₁₅ H ₁₈ N ₂	101-72-4
介面活性劑 Surfactants	壬基酚	Nonylphenol(NP)	C ₁₅ H ₂₄ O	25154-52-3
	4-壬基苯酚	4-nonyl-Phenol	C ₁₅ H ₂₄ O	104-40-5
	壬基酚聚氧乙烯醚	Nonylphenol ethoxylates(NPEs)(NPEO) :	C ₁₅ H ₂₄ C _n H _{2n} O(CH ₂ CH ₂) _n H	9016-45-9

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 26 of 34

物質分類Substance type	物質名Name in Chinese	英文名Substance Name in English	化學分子Chemical Formula	CAS號碼CAS. No.
		Nonylphenoxypoly(ethyleneoxy)	(n=9, 12) ; C ₁₅ H ₂₁ O.(C ₂ H ₄ O) _n	
	烷基苯酚	Alkylphenols (APs)	-	-
	二甲基二脂烷基氯化銨 (DADMAC)	Dimethyl ditallow ammonium chloride	-	68783-78-8
	雙氫化牛脂基二甲基氯化銨	Distearyl dimethyl ammonium chloride (DSDMAC)	C ₃₈ H ₈₀ N	107-64-2
	雙辛烷基二甲基氯化銨	Diocetyl dimethyl ammonium chloride (DODMAC)	C ₁₈ H ₄₀ N	5538-94-3
	雙(氫化牛油烷基)二甲基氯化銨	Dihydrogenated tallow dimethyl ammonium chloride (DHTDMAC)	-	61789-80-8
其它無機化合物 Other inorganic compounds	白磷；紅磷；黃磷	Phosphorus white ; Phosphorus red ; Phosphorus yellow	P	7723-14-0
丙烯醯胺 Acrylamide	丙烯醯胺	Acrylamide	C ₃ H ₅ NO	79-06-1

「-」符號表示以現在的資訊及客戶提供的資訊，無法充份表達出完整資料。

The mark 「-」 means insufficient information from customers and regulations base on current limitation, the full data can't be provided.

智晶光電同時遵循國際法令規定，未有相關法規更新而未詳盡於此的物質，則以最新公告法令規定為依據。相關法規請參考 REACH SVHC、SONY SS-00259、JGPSSI、JIG-101。

WSI follows international environmental regulations of REACH SVHC, SONY SS-00259, JGPSSI and JIG-101. Any substance not listed as above, please refer to the update information from public announcement.

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Manual Procedure WI Spec. Engineering Doc Company Regulation

Confidential Level A B C

Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 27 of 34

<附錄二> 環境管理物質 Appendix 2. List of Environmental management substance

物質分類 Substance type	物質名 Name in Chinese	英文名 Substance Name in English	化學分子Chemical Formula	CAS號碼 CAS No.
鐵及其化合物 Iron (Fe) and compounds	鐵	Iron	Fe	7439-89-6
	其他鐵化合物	Other Iron compounds	-	-
錫及其化合物 Tin (Sn) and compounds	錫	Tin	Sn	7440-31-5
	其他錫化合物	Other tin compounds	-	-
銀及其化合物 Silver (Ag) and compounds	銀	Silver	Ag	7440-22-4
	其他銀化合物	Other silver compounds	-	-
鉭及其化合物 Tantalum (Ta) and compounds	鉭	Tantalum	Ta	7440-25-7
	其他鉭化合物	Other tantalum compounds	-	-
銻及其化合物 Tellurium (Te) and compounds	銻	Tellurium	Te	13494-80-9
	其他銻化合物	Other tellurium compounds	-	-
銅及其化合物 Copper (Cu) and compounds	銅	Copper	Cu	7440-50-8
	其他銅化合物	Other copper compounds	-	-
鋁及其化合物 Aluminum (Al) and compounds	鋁	Aluminum	Al	7429-90-5
	其他鋁化合物	Other aluminum compounds	-	-
鎵及其化合物 Gallium (Ga) and compounds	鎵	Gallium	Ga	7440-55-3
	其他鎵化合物	Other gallium compounds	-	-
鈀及其化合物 Palladium (Pa) and compounds	鈀	Palladium	Pd	7440-05-3
	其他鈀化合物	Other palladium compounds	-	-
金及其化合物 Gold (Au) and compounds	金	Gold	Au	7440-57-5
	其他金化合物	Other gold compounds	-	-
銣及其化合物 Rubidium (Rb) and compounds	銣	Rubidium	Rb	7440-17-7
	其他銣化合物	Other rubidium compounds	-	-
鋅及其化合物 Zinc (Zn) and compounds	鋅	Zinc	Zn	7440-66-6
	其他鋅化合物	Other zinc compounds	-	-
銲及其化合物 Indium (In) and compounds	銲	Indium	In	7440-74-6
	其他銲化合物	Other indium compounds	-	-
錳及其化合物 Manganese (Mn) and compounds	錳	Manganese	Mn	7439-96-5
	其他錳化合物	Other manganese compounds	-	-
鈦及其化合物 Titanium (Ti) and compounds	鈦	Titanium	Ti	7440-32-6
	其他鈦化合物	Other titanium compounds	-	-
硒及其化合物 Selenium (Se) and compounds	硒化氫	Hydrogen selenide	H ₂ Se	7783-07-5
	硒化鈉	Sodium selenide	Na ₂ Se	1313-85-5
	二氧化硒	Selenium dioxide	O ₂ Se	7446-08-4

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 28 of 34

物質分類 Substance type	物質名 Name in Chinese	英文名 Substance Name in English	化學分子Chemical Formula	CAS號碼 CAS No.
	硒酸鈉	Sodium selenate	HNaO ₄ Se	10112-94-4
	乙烷硒化物	Dimethyl selenide	C ₂ H ₆ Se	593-79-3
	氧化硒	Selenium oxide	OSe	12640-89-0
鉻及其化合物(除了六價鉻、三價鉻) Chromium (Cr) and compounds(other than Cr ⁶⁺ 、Cr ³⁺)	鉻	Chromium	Cr	7440-47-3
	其他鉻化合物	Other chromium compounds	-	-
芳香胺和染料 Aromatic amines and dyes	芳香胺和染料	Aromatic amines and dyes	-	-
脂肪族胺 Amines, aliphatic	脂肪族胺	Amines, aliphatic	-	-
矽鐵及合金 Ferrosilicon and alloys	矽鐵及合金	Ferrosilicon and alloys	-	8049-17-0
福美雙(TMTD) Thiram	福美雙	Thiram	C ₆ H ₁₂ N ₂ S ₄	137-26-8
乙烯基乙二醇醚及其醋酸酯 Ethylene based glycol ethers and its acetate	乙二醇二甲醚	Ethylene glycol dimethyl ether	C ₄ H ₁₀ O ₂	110-71-4
	甲氧基乙酸	Methoxyacetic acid	C ₃ H ₆ O ₃	625-45-6
	乙氧基乙酸	Ethoxyacetic acid	C ₄ H ₈ O ₃	627-03-2
	2-乙氧基醋酸酯	2-Erhoxyethanol acerate	-	-
	2-甲氧基醋酸酯	2-Methoxyethanol acerate	-	-
有機磷化合物 Organic Phosphates	三芳基磷酸脂(或鹽)	Triaryl Phosphates	-	-
	三甲基磷酸脂(或鹽)	Trimerhyl Phosphates	-	-
	三苯基磷酸脂(或鹽)	Triphenyl Phosphates	-	-
	二苯酚二苯基磷酸脂(或鹽)	Bisphenol A diphenyl phosphate	-	-
	磷酸氫間苯二酚	Resourcinol Diphosphate	-	-
其他磷化合物	Other phosphates compounds	-	-	
有機矽化合物 Organic silicon compounds	有機矽化合物	Organic silicon compounds	-	-
多溴三聯苯 Polybrominated terphenyls	多溴三聯苯	Polybrominated terphenyls	-	-
微細纖維 Small fibers	所有直徑5um(含)以下，長徑≥3:1的纖維或原織的產品	All products containing fibers 5um or less, in diameter with a length: diameter ratio equal to or greater than 3:1	-	-
其它有機化合物 Other organic compounds	N,N-二甲基乙醯胺	N,N-Dimethylacetamide(DMAC)	C ₄ H ₉ NO	127-19-5
	4-(1,1,3,3-四甲基丁基)苯酚；辛基酚	4-(1,1,3,3-Tetramethylbutyl)phenol	C ₁₄ H ₂₂ O	140-66-9
苯 Benzene	二甲苯	Xylene	C ₈ H ₁₀	1330-20-7
	2,4-二硝基甲苯	2,4-Dinitrotoluene	C ₇ H ₆ N ₂ O ₄	121-14-2
橡膠及其化合物 Rubber and rubber compounds	天然橡膠	Natural rubber	-	9006-04-6

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 29 of 34

<附錄三> ODS 物質 Appendix 3. List of ODS

物質名 Name in Chinese	英文名 Substance Name in English	化學分子 Chemical Formula	CAS號碼 CAS. No.
二溴氟甲烷	Dibromofluoromethane(HBFC-21)	CHBr ₂ F	1868-53-7
氟溴烴	Bromodifluoroethane and its isomers, HBFC's	CHBrF ₂	1511-62-2
溴氟甲烷	Bromofluoromethane(HBFC-31)	CH ₂ BrF	373-52-4
四溴氟乙烷	Tetrabromofluoroethane(HBFC-121)	-	306-80-9 353-93-5
三溴二氟乙烷	Tribromodifluoroethane(HBFC-122)	-	353-97-9
二溴三氟乙烷; 1,2-二溴-1,1,2-三氟乙烷	Dibromotrifluoroethane(HBFC-123=Halon2302); 1,2-Dibromo-1,1,2-trifluoroethane	C ₂ HBr ₂ F ₃	354-04-1
溴四氟乙烷	Bromotetrafluoroethane(HBFC-124)	-	124-72-1 354-07-4
二溴二氟乙烷	Dibromodifluoroethane(HBFC-132); 1,2-dibromo-1,1-difluoroethane	C ₂ H ₂ Br ₂ F ₂	75-82-1
溴三氟乙烷	Bromotrifluoroethane(HBFC-133a); 2-bromo-1,1,1-trifluoroethane	C ₂ H ₂ BrF ₃	421-06-7
二溴氟乙烷	Dibromofluoroethane(HBFC-141); 1,2-dibromofluoroethane	C ₂ H ₃ Br ₂ F	358-97-4
一氟二氯甲烷	Dichlorofluoromethane, HCFC-21	CHCl ₂ F	75-43-4
二氟一氯甲烷	Chlorodifluoromethane, HCFC-22	CHClF ₂	75-45-6
氯氟甲烷	Chlorofluoromethane, HCFC-31	CH ₂ ClF	593-70-4
四氯氟乙烷; HCFC-121a異構體; HCFC-121異構體	Tetrachlorofluoroethane, HCFC-121; 1,1,1,2-Tetrachloro-2-fluoroethane, HCFC-121a; 1,1,2,2-Tetrachloro-1-fluoroethane, HCFC-121	C ₂ HCl ₄ F	134237-32-4; 354-11-0; 354-14-3
三氯二氟乙烷; 異構體	Trichlorodifluoroethane, HCFC-122; 1,2,2-Trichloro-1,1-difluoroethane	C ₂ HCl ₃ F ₂	41834-16-6; 354-21-2
二氯三氟乙烷; 異構體; 異構體; HCFC-123a異構體; HCFC-123b異構體; HCFC-123異構體	Dichlorotrifluoroethane, HCFC-123; Dichloro-1,1,2-trifluoroethane; 2,2-dichloro-1,1,1-trifluoroethane; 1,2-dichloro-1,1,2-trifluoroethane, HCFC-123a; 1,1-dichloro-1,2,2-trifluoroethane, HCFC-123b; 2,2-dichloro-1,1,2-trifluoroethane, HCFC-123b	C ₂ HCl ₂ F ₃	34077-87-7; 90454-18-5; 306-83-2; 354-23-4; 812-04-4
一氯四氟乙烷; HCFC-124異構體; HCFC-124a異構體	Chlorotetrafluoroethane, HCFC-124; 2-Chloro-1,1,1,2-tetrafluoroethane, HCFC-124; 1-Chloro-1,1,2,2-tetrafluoroethane, HCFC-124a	C ₂ HClF ₄	63938-10-3; 2837-89-0; 354-25-6
三氯氟乙烷; HCFC-131異構體; HCFC-131異構體; HCFC-131b異構體	Trichlorofluoroethane, HCFC-131; 2-Fluoro-1,1,2-trichloroethane, HCFC-131; 1,2,2-Trichloro-1-fluoroethane, HCFC-131; 1,1,1-Trichloro-2-fluoroethane, HCFC-131b	C ₂ H ₂ Cl ₃ F	27154-33-2(134237-34-6); 359-28-4; 359-28-2; 811-95-0(2366-36-1)
二氯二氟乙烷; HCFC-132異構體; HCFC-132異構體; HCFC-132b異構體; HCFC-132c異構體;	Dichlorodifluoroethane, HCFC-132; 1,1-Dichloro-2,2-difluoroethane, HCFC-132; 1,2-dichloro-1,2-difluoroethane, HCFC-132; 1,2-Dichloro-1,1-difluoroethane, HCFC-132b; 1,1-Dichloro-1,2-difluoroethane, HCFC-132c	C ₂ H ₂ Cl ₂ F ₂	25915-78-0; 471-43-2; 431-06-1; 1649-08-7; 1842-05-3
三氟氯乙烷; HCFC-133異構體;	Chlorotrifluoroethane, HCFC-133;	C ₂ H ₂ ClF ₃	1330-45-6; 431-07-2;

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 30 of 34

物質名 Name in Chinese	英文名 Substance Name in English	化學分子 Chemical Formula	CAS號碼 CAS. No.
HCFC-133a異構體	1-Chloro-1,2,2-trifluoroethane, HCFC-133; 2-Chloro-1,1,1-trifluoroethane, HCFC-133a		75-88-7
二氯氟乙烷; HCFC-141異構體; HCFC-141b異構體;	Dichlorofluoroethane, HCFC-141; 1,2-Dichloro-1-fluoroethane, HCFC-141; 1,1-Dichloro-1-fluoroethane, HCFC-141b	C ₂ H ₃ Cl ₂ F	25167-88-8; 430-57-9; 1717-00-6
氯二氟乙烷; HCFC-142b異構體; HCFC-142a異構體	Chlorodifluoroethane, HCFC 142; 1-Chloro-1,1-difluoroethane, HCFC-142b; 1-Chloro-1,2-difluoroethane, HCFC-142a	C ₂ H ₃ ClF ₂	25497-29-4;75-68-3;338-64-7
一氯一氟乙烷	Chlorofluoroethane, HCFC 151	C ₂ H ₄ ClF	1615-75-4
六氯氟丙烷	Hexachlorofluoropropane, HCFC-221	-	134237-35-7(29470-94-8)
五氯二氟丙烷	Pentachlorodifluoropropane, HCFC-222	-	134237-36-8(116867-32-4)
四氯三氟丙烷	Tetrachlorotrifluoropropane, HCFC-223	-	134237-37-9(29470-95-9)
三氯四氟丙烷	Trichlorotetrafluoropropane, HCFC-224	-	134237-38-0(127564-91-4)
二氯五氟丙烷; HCFC-225aa異構體; HCFC-225ba異構體; HCFC-225bb異構體; HCFC-225ca異構體; HCFC-225aa異構體; HCFC-225cb異構體; HCFC-225cc異構體; HCFC-225da異構體; HCFC-225ea異構體; HCFC-225eb異構體	Dichloropentafluoropropane, HCFC-225; 2,2-Dichloro-1,1,1,3,3-pentafluoropropane,HCFC-225aa; 2,3-Dichloro-1,1,1,2,3-pentafluoropropane,HCFC-225ba; 1,2-Dichloro-1,1,2,3,3-pentafluoropropane,HCFC-225bb; 3,3-Dichloro-1,1,1,2,2-pentafluoropropane,HCFC-225ca; 1,3-Dichloro-1,1,2,2,3-pentafluoropropane,HCFC-225cb; 1,1-Dichloro-1,2,2,3,3-pentafluoropropane,HCFC-225cc; 1,2-Dichloro-1,1,3,3,3-pentafluoropropane,HCFC-225da; 1,3-Dichloro-1,1,2,3,3-pentafluoropropane,HCFC-225ea; 1,1-Dichloro-1,2,3,3,3-pentafluoropropane,HCFC-225eb;	C ₃ HCl ₂ F ₅	127564-92-5;128903-21-9;422-48-0;422-44-6;422-56-0;507-55-1;13474-88-9;431-86-7;136013-79-1;111512-56-2
氯六氟丙烷	Chlorohexafluoropropane, HCFC-226	-	134308-72-8(28987-04-4)
七氯氟丙烷	Pentachlorofluoropropane, HCFC-231	-	134190-48-0;421-94-3
四氯氟丙烷	Tetrachlorodifluoropropane, HCFC-232; 1,1,3,3-Tetrachloro-2,2-difluoropropane	-	134237-39-1(127564-82-3); 1112-14-7
三氯三氟丙烷; HCFC-233異構體	Trichlorotrifluoropropane, HCFC-233; 1,1,3-Trichloro-1,2,2-trifluoropropane; 1,1,1-Trichloro-3,3,3-trifluoropropane	C ₃ H ₂ Cl ₃ F ₃	134237-40-4(61623-04-9); 421-99-8;7125-84-0
二氯四氟丙烷	Dichlorotetrafluoropropane, HCFC-234	-	127564-83-4
氯五氟丙烷; HCFC-235異構體	Chloropentafluoropropane, HCFC-235; 1-Chloro-1,2,2,3,3-pentafluoropropane; 1-Chloro-1,1,3,3,3-pentafluoropropane	C ₃ H ₂ ClF ₅	134237-41-5(108662-83-5); 679-99-2;460-92-4
四氯氟丙烷	Tetrachlorofluoropropane, HCFC-241	-	134190-49-1
三氯二氟丙烷	Trichlorodifluoropropane, HCFC-242	-	134237-42-6(127564-90-3)
二氯三氟丙烷; HCFC-243異構體; HCFC-243異構體; HCFC-243異構體	Dichlorotrifluoropropane, HCFC-243; 1,1-Dichloro-1,2,2-trifluoropropane, HCFC-243; 2,3-Dichloro-1,1,1-trifluoropropane, HCFC-243; 3,3-Dichloro-1,1,1-trifluoropropane, HCFC-243	C ₃ H ₂ Cl ₂ F ₃	134237-43-7(116890-51-8); 7125-99-7;338-75-0;460-69-5
氯四氟丙烷; HCFC-244異構體	Chlorotetrafluoropropane, HCFC-244; 1-Chloro-2,2,3,3-tetrafluoropropane, HCFC-244	-	134-85-6
三氯氟丙烷; HCFC-251異構體	Trichlorofluoropropane, HCFC-251; 1,1,3-Trichloro-1-fluoropropane, HCFC-251	C ₃ H ₄ Cl ₃ F	134190-51-5;818-99-5
二氯二氟丙烷	Dichlorodifluoropropane, HCFC-252	-	134190-52-6
氯三氟丙烷; HCFC-253fb異構體	Chlorotrifluoropropane, HCFC-253;	C ₃ H ₄ ClF ₃	134237-44-8(26588-23-8);4

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 31 of 34

物質名 Name in Chinese	英文名 Substance Name in English	化學分子 Chemical Formula	CAS號碼 CAS. No.
	3-Chloro-1,1,1-trifluoropropane, HCFC-253fb		60-35-5
二氯氟丙烷; HCFC-261異構體	Dichlorofluoropropane, HCFC-261; 1,1-Dichloro-1-fluoropropane, HCFC-261	C ₃ H ₅ Cl ₂ F	134237-45-9(127404-11-9); 7799-56-6
氯二氟丙烷; HCFC-262異構體	Chlorodifluoropropane, HCFC-262; 2-Chloro-1,3-difluoropropane, HCFC-262; 1-Chloro-2,2-difluoropropane, HCFC-262ca		134190-53-7; 102738-79-4; 420-99-5
氯氟丙烷; HCFC-271異構體	Chlorofluoropropane, HCFC-271; 2-Chloro-2-fluoropropane, HCFC-271	C ₃ H ₆ ClF	134190-54-8; 420-44-0
溴甲烷	Bromomethane, Methyl bromide	CH ₃ Br	74-83-9
1,1,1-三氯乙烷; 1,1,2-三氯乙烷及其異構體	1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Methyl chloroform, TCA	C ₂ H ₃ Cl ₃	71-55-6; 79-00-5
1,1-二氯乙烯	1,1-Dichloroethylene, Vinylidene Chloride	C ₂ H ₂ Cl ₂	75-35-4
1,2-二氯乙烯	1,2-Dichloro-aethen	C ₂ H ₂ Cl ₂	540-59-0
二氯甲烷	Dichloromethane(Methylene chloride)	CH ₂ Cl ₂	75-09-2
二氯乙烷	Dichloroethane 1,2-	C ₂ H ₄ Cl ₂	107-06-2
1,1,1,2-四氯乙烷	1,1,1,2-Tetrachloroethane	C ₂ H ₂ Cl ₄	630-20-6
五氯乙烷	Pentachloroethane	C ₂ HCl ₅	76-01-7
三氯甲烷(氯仿)	Trichloromethane(Chloroform)	CHCl ₃	67-66-3
三氯乙烯	Trichloroethylene	C ₂ HCl ₃	79-01-6
1,1,1,2,2-五氯乙烷	1,1,1,2,2-Tetrachloroethane	C ₂ H ₂ Cl ₄	79-34-5
順-1,2-二氯乙烯	cis-1,2-dichloroethene	C ₂ H ₂ Cl ₂	156-59-2
1,3-二氯丙烯	1,3-Dichloropropylene	C ₃ H ₃ Cl ₂	542-75-6
二溴氟甲烷	Dibromofluoromethane	CHFBr ₂	-
溴二氟甲烷	Bromodifluoromethane	CHF ₂ Br	-
溴氟甲烷	Bromofluoromethane	CHFBr	-
四溴氟乙烷	Tetrabromofluoroethane	C ₂ HFBr ₄	-
三溴二氟乙烷	Tribromodifluoroethane	C ₂ HF ₂ Br ₃	-
二溴三氟乙烷	Dibromotrifluoroethane	C ₂ HF ₃ Br ₂	-
溴四氟乙烷	Bromotetrafluoroethane	C ₂ HF ₄ Br	-
三溴氟乙烷	Tribromofluoroethane	C ₂ H ₂ FBr ₃	-
二溴二氟乙烷	Dibromodifluoroethane	C ₂ H ₂ F ₂ Br ₂	-
溴三氟乙烷	Bromotrifluoroethane	C ₂ H ₂ F ₃ Br	-
二溴氟乙烷	Dibromofluoroethane	C ₂ H ₂ FBr ₂	-
溴二氟乙烷	Bromodifluoroethane	C ₂ H ₂ F ₂ Br	-
溴氟乙烷	Bromofluoroethane	C ₂ H ₄ FBr	-
六溴氟丙烷	Hexabromofluoropropane	C ₃ HFBr ₆	-
五溴二氟丙烷	Pentabromodifluoropropane	C ₃ HF ₂ Br ₅	-
四溴三氟丙烷	Tetrabromotrifluoropropane	C ₃ HF ₃ Br ₄	-
三溴四氟丙烷	Tribromotetrafluoropropane	C ₃ HF ₄ Br ₃	-
二溴五氟丙烷	Dibromopentafluoropropane	C ₃ HF ₅ Br ₂	-
溴六氟丙烷	Bromoheptafluoropropane	C ₃ HF ₆ Br	2252-78-0
五溴氟丙烷	Pentabromofluoropropane	C ₃ H ₂ FBr ₅	-
四溴二氟丙烷	Tetrabromodifluoropropane	C ₃ H ₂ F ₂ Br ₄	-
三溴三氟丙烷	Tribromotrifluoropropane	C ₃ H ₂ F ₃ Br ₃	-
二溴四氟丙烷	Dibromotetrafluoropropane	C ₃ H ₂ F ₄ Br ₂	-

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 32 of 34

物質名 Name in Chinese	英文名 Substance Name in English	化學分子 Chemical Formula	CAS號碼 CAS. No.
溴五氟丙烷	Bromopentafluoropropane	C ₃ H ₂ F ₅ Br	-
四溴氟丙烷	Tetrabromofluoropropane	C ₃ H ₂ FBr ₄	-
三溴二氟丙烷	Tribromodifluoropropane	C ₃ H ₂ F ₂ Br ₃	431-21-0
二溴三氟丙烷	Dibromotrifluoropropane	C ₃ H ₂ F ₃ Br ₂	-
溴四氟丙烷	Bromotetrafluoropropane	C ₃ H ₂ F ₄ Br	679-84-5
三溴氟丙烷	Tribromofluoropropane	C ₃ H ₂ FBr ₃	-
二溴二氟丙烷	Dibromodifluoropropane	C ₃ H ₂ F ₂ Br ₂	-
溴三氟丙烷	Bromotrifluoropropane	C ₃ H ₂ F ₃ Br	-
二溴氟丙烷	Dibromofluoropropane	C ₃ H ₂ FBr ₂	-
溴二氟丙烷	Bromodifluoropropane	C ₃ H ₂ F ₂ Br	-
溴氟丙烷	Bromofluoropropane	C ₃ H ₂ FBr	-
氯溴甲烷	Chlorobromomethane	CH ₂ BrCl	74-97-5
三氯一氟甲烷 C F C - 1 1	CFC-11; trichlorofluoromethane	CCl ₃ F	75-69-4
二氯二氟甲烷 C F C - 1 2	CFC-12; dichlorofluoromethane	CCl ₂ F ₂	75-71-8
三氯三氟乙烷 C F C - 1 1 3	CFC-113; trichlorofluoroethane; 1,1,2 Trichlorotrifluoroethane	C ₂ Cl ₃ F ₃	354-58-5; 76-13-1
四氯二氟乙烷 C F C - 1 1 4	CFC-114; dichlorotetrafluoroethane	C ₂ Cl ₂ F ₄	76-14-2
五氯氟乙烷 C F C - 1 1 5	CFC-115; chloropentafluoroethane	C ₂ ClF ₅	76-15-3
溴氯二氟甲烷(海龍1211)	Halon-1211; bromochlorodifluoromethane	CBrClF ₂	353-59-3
溴三氟甲烷(海龍1301)	Halon-1301; bromotrifluoromethane	CBrF ₃	75-63-8
二溴四氟乙烷(海龍2402)	Halon-2402; dibromotetrafluoroethane	C ₂ Br ₂ F ₄	124-73-2
氯三氟甲烷 C F C - 1 3	CFC-13; chlorotrifluoromethane	CClF ₃	75-72-9
五氯氟乙烷 C F C - 1 1 1	CFC-111; pentachlorofluoroethane	C ₂ Cl ₅ F	354-56-3
四氯二氟乙烷 C F C - 1 1 2	CFC-112; tetrachlorodifluoroethane	C ₂ Cl ₄ F ₂	76-12-0
七氯氟丙烷 C F C - 2 1 1	CFC-211; heptachlorofluoropropane	C ₃ Cl ₇ F	422-78-6; 135401-87-5
六氯二氟丙烷 C F C - 2 1 2	CFC-212; hexachlorodifluoropropane	C ₃ Cl ₆ F ₂	3182-26-1
五氯三氟丙烷 C F C - 2 1 3	CFC-213; pentachlorotrifluoropropane	C ₃ Cl ₅ F ₃	2354-06-5; 134237-31-3
四氯四氟丙烷 C F C - 2 1 4	CFC-214; tetrachlorotetrafluoropropane	C ₃ Cl ₄ F ₄	29255-31-0; 2268-46-4
三氯五氟丙烷 C F C - 2 1 5	Trichloropentafluoropropane(CFC215); 1,1,1-Trichloropentafluoropropane; 1,2,3-Trichloropentafluoropropane	C ₃ Cl ₃ F ₅	1599-41-3; 4259-43-2; 76-17-5
二氯六氟丙烷 C F C - 2 1 6	CFC-216; Dichlorohexafluoropropane	C ₃ Cl ₂ F ₆	661-97-2
氯七氟丙烷 C F C - 2 1 7	CFC-217; chloroheptafluoropropane	C ₃ ClF ₇	422-86-6
四氯甲烷; 四氯化碳	Carbon tetrachloride; Tetrachloromethane	CCl ₄	56-23-5
四氯乙烯	Tetrachloroethylene	C ₂ Cl ₄	127-18-4
二氯甲醚	Bis(chloromethyl) ether	C ₂ H ₄ Cl ₂ O	542-88-1
多氯酚及其鹽類	Polychlorinated phenols and their salts	-	-
氯乙烯(單體)	Vinyl chloride(monomer)	C ₂ HCl	75-01-4
溴丙烷	nPB(n-bromopropane ; 1-Bromopropane ; 2-Bromopropane ; 3-Bromopropane)	C ₃ H ₇ Br ; C ₃ H ₇ Br ; C ₃ H ₇ Br	106-94-5; 75-26-3; 106-95-6
4-硝基聯苯	4-Nitrobiphenyl	C ₁₂ H ₉ NO ₂	92-93-3
五氯苯酚鈉鹽	PCP sodium salt	C ₆ Cl ₅ NaO	131-52-2
α-六氯環己烷	α-Hexachlorocyclohexane	C ₆ HCl ₆	319-84-6
β-六氯化苯	Beta-hexachlorocyclohexane	C ₆ HCl ₆	319-85-7
六氯丁二烯	Hexachlorobutadiene	C ₆ Cl ₆	87-68-3

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Manual Procedure WI Spec. Engineering Doc Company Regulation

Confidential Level A B C

Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 33 of 34

CONFIDENTIAL

機密文件，嚴禁複印

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.



Title: Environmental Restricted Substance Control Standard
環境限用物質管制標準

Established Dept: 品保單位 QA

Doc. No: SQS1-0001

Rev.: J

Page: 34 of 34

<附錄四> 建議檢測方法說明 Appendix 4. Recommend test method

檢測項目 Substance	儀器設備 Test equipment	檢測方法/說明 Test method
鎘及其化合物 (Cd) (Cadmium and its compounds)	ICP-OES/ICP-AES/ICP-MS/ AAS	IEC 62321/EN 1122/EPA 3052
鉛及其化合物 (Pb) (Lead and its compounds)	ICP-OES/ICP-AES/ICP-MS/ AAS	IEC 62321/EPA 3052
汞及其化合物 (Hg) (Mercury and its compounds)	ICP-OES/ICP-AES/ICP-MS/ AAS	IEC 62321/EPA 3052
六價鉻化合物 (Cr ⁶⁺) (Hexavalent Chromium Compounds)	UV-VIS	IEC 62321/ISO 3613/EPA 3060A
有機錫化合物 (Organic Tin Compounds) (Tributyltin & Triphenyltin Compounds)	GC-FPD	Modify NIEAT503.30B
多溴聯苯/多溴聯苯醚 (PBB/PBDE)	GC-MS/LC-MS	IEC 62321/EPA 3540C/EPA 3541/EPA 3546
多氯聯苯 (PCBs) (Polychlorinated biphenyls)	GC-MS	Modify by US EPA 8082
多氯化萘 (PCN) (Polychlorinated naphthalene category)	GC-MS	Modify by US EPA 8082
氯化石蠟 (Chlorinated Paraffins) (C ₁₀ ~C ₁₃)	GC-MS	Modify by US EPA 8082
石棉 (Asbestos)	GC-FTIR / SEM-EDS	--
	Differential-phase Photo-microscope	--
偶氮化合物 (Azo Compounds)	GC-MS	35 LMBG 82.02.2 35/ 35 LMBG 82.02.4
甲醛 (Formaldehyde)	GC-FTIR / GC-MS	US EPA TO-142.3 EN120 (only for wood)
多氯三苯 (PCT) (Polychlorinated Triphenyl)	GC-MS	Modify by US EPA 8082
聚氯乙烯及其混合物 (PVC) (Polyvinyl chloride and PVC blends)	GC-MS	Modify by US EPA 8082
CFCs / HCFCs / HBFC / PFC / CHC	GC-FTIR/GC-MS /GC-FID	--
全氟辛烷磺酸(PFOS/A) (Perfluorooctane sulfonates/acid)	LC-MS/MS	Modify by US EPA 3540C
鹵素(Halogen)	IC	EN 14582B/IEC 61189-2

本資料內容為智晶光電專有之財產，非由書面許可，不准透露或使用本檔，亦不准複製或轉變成任何其他形式使用。

The content of document is the exclusive property of WiseChip Semiconductor Inc. and shall not be distributed or reproduced, or disclosed in whole or in part without prior permission of WiseChip Semiconductor Inc.