

## Environment Hazardous Substances Compliance

Taiwan Semiconductor hereby declare that all of our product and packaging materials comply fully below directives and do not contain any of the following hazardous substances except as currently exempted RoHS directive (2011/65/EU) or as impurities.

Taiwan Semiconductor is committed to meeting our corporate responsibilities for protection of the environment.

### Hazardous Substance List

No.	Substance Name	CAS Number	Limit (ppm)
<b>RoHS directive (2011/65/EU)</b>			
1	Cadmium and cadmium compounds 鎘以及鎘化合物	7440-43-9	100
2	Lead and lead compounds 鉛以及鉛化合物 (Note1)	7439-92-1	1000
3	Mercury and mercury compounds 汞以及汞化合物	7439-97-6	1000
4	Hexavalent chromium compounds 六價鉻化合物	1333-82-0	1000
5	Polybrominated biphenyls (PBB) 多溴聯苯	-	1000
6	Polybrominated diphenylethers (PBDE) 多溴聯苯醚 (including decabromodiphenyl ether [DecaBDE]) 包含十溴聯苯醚	-	1000
7	Hexabromocyclododecane (HBCDD) 六溴環十二烷	25637-99-4	1000
8	Butyl benzyl phthalate (BBP) 鄰苯二甲酸甲苯基丁酯	85-68-7	1000
9	Dibutyl phthalate (DBP) 鄰苯二甲酸二丁酯	84-74-2	1000
10	Bis (2- ethylhexyl) phthalate (DEHP) 鄰苯二甲酸二(2-乙基己基)酯	117-81-7	1000
<b>PFOA/PFOS directive (2006/122/EC)</b>			
11	Perfluorooctanoic acid (PFOA) 全氟辛酸	335-67-1	1000
12	Perfluorooctane sulfonates (PFOS) 全氟辛烷硫磺酸	2795-39-3	1000
<b>SONY SS-00259 12<sup>th</sup> edition</b>			
13	Polychlorinated biphenyls (PCB) 多氯聯苯	1336-36-3	Banned 禁用
14	Polychlorinated naphthalenes (PCN) 多氯化萘	70776-03-3	Banned 禁用
15	Polychlorinated terphenyls (PCT) 多氯三聯苯	61788-33-8	Banned 禁用
16	Short-chain chlorinated paraffins (SCCP) 短鍊型氯代烷烴	-	1000

No.	Substance Name	CAS Number	Limit (ppm)
17	Polyvinyl chloride (PVC) and PVC blends 聚氯乙炔以及聚氯乙炔混合物	9002-86-2	Packaging materials, Heatshrink Binding, tube, Wood ,Plastic case /cover 包装材料,热缩套管,捆绑 带,木箱,塑料外壳 1000ppm
18	TRIS(2-CHLOROETHYL) PHOSPHATE (TCEP) 三(2-氯乙基)磷酸酯	115-96-8	900
19	Other chlorinated organic compounds 其他有機氯化物	-	900
20	Other brominated organic compounds 其他有機溴化合物	-	900
21	Trisubstituted organotin compounds (including tributyltin (TBT) 三丁基錫化合物 compounds and triphenyltin (TPT) compounds) 三苯基錫化合物	-	1000
22	Dibutyltin (DBT) compounds 二丁基錫化合物	-	1000
23	Diocetyl tin (DOT) compounds 二辛基錫化合物	-	1000
24	Asbestos 石棉	1332-21-4 132207-32-0 132207-33-1	Banned 禁用
25	Specific azo compounds 特定偶氮化合物	-	30
26	Formaldehyde 甲醛	50-00-0	Banned 禁用
27	Specific benzotriazole 特定苯并三氮唑	3846-71-7	Banned 禁用
28	Dimethyl fumarate (DMF) 富馬酸二甲酯	624-49-7	0.1
29	Beryllium oxide 氧化鈹	1304-56-9	Banned 禁用
30	Beryllium copper 鈹青銅	11108-64-8	Banned 禁用
31	Cobalt dichloride 二氯化鈷	7646-79-9	Banned 禁用
32	Diarsenic trioxide 三氧化二砷	1303-28-2	1000
33	Diarsenic pentaoxide 五氧化二砷	1327-53-3	1000
34	Hexabromocyclododecane (HBCDD) 六溴環十二烷	25637-99-4	1000

No.	Substance Name	CAS Number	Limit (ppm)
35	Specific phthalates 特定鄰苯二甲酸鹽 (DEHP, DBP, BBP, DIBP, DINP, DIDP, DNOP, DNHP, DIHP, DHNUP, DMEP, DIPP, 支链与直链的邻苯二甲酸二戊酯, 邻苯二甲酸正戊基异戊基酯)	117-81-7 84-74-2 85-68-7 84-69-5 28553-12-0 68515-48-0 26761-40-0 68515-49-1 117-84-0 84-75-3 71888-89-6 68515-42-4 117-82-8 605-50-5 84777-06-0 776297-69-9	1000
36	Hydrofluorocarbon (HFC) 氫氟碳化合物, Perfluorocarbon (PFC) 全氟化碳	-	Banned 禁用
37	Ozone depleting substances (ODS) 臭氧層破壞物質	-	Banned 禁用
38	Boric acid, specific sodium borates 硼酸、特定硼酸钠	-	1000
39	4-(1,1,3,3-tetramethylbutyl) phenol 4-(1,1,3,3-四甲基丁基)苯酚	140-66-9	1000
40	Bis(2-methoxyethyl) ether 二乙二醇二甲醚	111-96-6	1000
41	N,N-dimethylacetamide(DMAC) N,N-二甲基乙酰胺	127-19-5	1000
42	Ethylene glycol dimethyl ether (EGDME) 乙二醇二甲醚	110-71-4	1000
43	Perchlorates 高氯酸盐	-	0.006
<b>Halogen 鹵素 (IEC 61249-2-21 definition)</b>			
44	Total Bromine (Br) 總溴	10097-32-2	900
45	Total Chlorine (Cl) 總氯	22537-15-1	900
46	Br+Cl 總溴+總氯	-	1500
<b>Packaging and Packaging Waste directive (94/62/EC)</b>			
47	Packaging 包裝材 (Pb+Cd+Hg+Cr+6)	-	100
<b>PAHs directive</b>			
48	Sum of 18 PAHs (多環芳香烴)	-	200

No.	Substance Name	CAS Number	Limit (ppm)
<b>Other Hazardous Substances</b>			
49	Phosphorus/Red Phosphorus 磷/紅磷	7723-14-0	1000
50	Nickel 鎳	7440-02-0	Declarable 宣告
51	Sb2O3 三氧化二銻	1309-64-4	1000
52	Total Fluorine (F) 總氟	14762-94-8	Declarable 宣告
53	Total Iodine (I) 總碘	14362-44-8	Declarable 宣告
54	Radioactive Substance 放射性物質	-	Banned 禁用

Notes:

1. Accord with the exempt clause 符合 RoHS 排外條款:

1.1 7a. Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead)

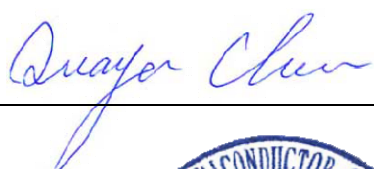
7a. 高熔點焊料中的鉛(例如, 含鉛重量為 85%或以上的鉛基合金焊料)

1.2 7(C)-I. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound.

7(C)-I. 電子電氣元件中玻璃或陶瓷中的鉛(例如壓電電子裝置), 或玻璃或陶瓷複合材料中的鉛

2. Halogen (F / Cl / Br / I ) only direct against Halogen free products.

Quayer Chen  
 QRA Director  
 Quality Reliability Assurance  
 Taiwan Semiconductor Co., Ltd.  
 14-January-2014

Signature: 



### Environment Hazardous Substances Compliance

Updated at	Updated by	Comment
22-April-2010	Owen	Included the substance lists included in most recent RoHS directive 2002/95/EC dated 1 July 2006 & PFOA/PFOS directive 2006/122/EC dated 12-December-2006 & SONY SS-00259 9th edition dated 1 March 2010.
26-July-2010	Sunnie	1. Included the substance list mentioned in last Packaging and Packaging Waste directive 94/62/EC,2004/12/EC dated 11 February 2004. 2. Add newly Note: Halogen (F / Cl / Br / I ) only direct against Halogen free products.
30-December-2010	Sunnie	Delete the repeated item: 23. Perfluorooctane sulfonates (PFOS) 全氟辛烷磺酸(及其鹽)
25-September-2012	Sunnie	1. Update Laws and regulations RoHS directive 2002/95/EC to RoHS directive 2011/65/Eu, SONY SS-00259 9th edition to SONY SS-00259 11th edition 2. Add hazardous substances item; CAS Number and Limit.
14-January-2014	Sunnie	1. Modify contents of the declaration 2. Update Laws and regulations SONY SS-00259 11th edition to SONY SS-00259 12th edition. 3. Hazardous Substance List added the directive regulations.