

Environment Hazardous Substances Compliance

Taiwan Semiconductor hereby certifies compliance to RoHS directive 2011/65/EU; PFOA/PFOS directive 2006/122/EC; SONY SS-00259 11th edition and Packaging and Packaging Waste directive 94/62/EC,2004/12/EC. The identified hazardous substances are not used in Taiwan Semiconductor products, manufacturing process and packaging materials.

Hazardous Substance List

No.	Substance Name	CAS Number	Limit (ppm)
1	Cadmium and cadmium compounds 鎘以及鎘化合物	7440-43-9	20
2	Lead and lead compounds 鉛以及鉛化合物 (Note1)	7439-92-1	100
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	Polychlorinated biphenyls (PCB) 多氯聯苯	1336-36-3	Banned 禁用
8	Polychlorinated naphthalenes (PCN) 多氯化萘	70776-03-3	Banned 禁用
9	Polychlorinated terphenyls (PCT) 多氯三聯苯	61788-33-8	Banned 禁用
10	Short-chain chlorinated paraffins (SCCP) 短鍊型氯代烷烴	-	1000
11	Polyvinyl chloride (PVC) and PVC blends 聚氯乙稀以及聚氯乙稀混合物	9002-86-2	Packagingmaterials, Heatshrink Binding, tube,Wood ,Plastic case /cover 包装材料,热缩套管,捆绑 帶,木箱,塑料外殼 1000ppm
12	TRIS(2-CHLOROETHYL) PHOSPHATE (TCEP) 三(2-氯乙基)磷酸酯	115-96-8	900
13	Other chlorinated organic compounds 其他有機氯化物	-	900
14	Other brominated organic compounds 其他有機溴化合物	-	900
15	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

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No.	Substance Name	CAS Number	Limit (ppm)
16	Dibutyltin (DBT) compounds 二丁基錫化合物	-	1000
17	Diocetyl tin (DOT) compounds 二辛基錫化合物	-	1000
18	Asbestos 石棉	1332-21-4 132207-32-0 132207-33-1	Banned 禁用
19	Specific azo compounds 特定偶氮化合物	-	30
20	Formaldehyde 甲醛	50-00-0	Banned 禁用
21	Specific benzotriazole 特定苯并三氮唑	3846-71-7	Banned 禁用
22	Dimethyl fumarate (DMF) 富馬酸二甲酯	624-49-7	0.1
23	Beryllium oxide 氧化鈹	1304-56-9	Banned 禁用
24	Beryllium copper 鈹青銅	11108-64-8	Banned 禁用
25	Cobalt dichloride 二氯化鈷	7646-79-9	Banned 禁用
26	Diarsenic trioxide 三氧化二砷 Diarsenic pentaoxide 五氧化二砷	1303-28-2 1327-53-3	1000
27	Hexabromocyclododecane (HBCDD) 六溴環十二烷	25637-99-4	1000
28	Specific phthalates (DEHP, DBP, BBP, DIBP, DINP, DIDP, DNOP, DNHP, DIHP, DMEP) 特定鄰苯二甲酸鹽	-	1000
29	Hydrofluorocarbon (HFC) 氫氟碳化合物, Perfluorocarbon (PFC) 全氟化碳	-	Banned 禁用
30	Ozone depleting substances (ODS) 臭氧層破壞物質	-	Banned 禁用
31	Perfluorooctane sulfonates (PFOS) 全氟辛烷磺酸	2795-39-3	1000
32	Perfluorooctanoic acid (PFOA) 全氟辛酸	335-67-1	1000
33	Boric acid, specific sodium borates 硼酸、特定硼酸鈉	-	1000
34	4-(1,1,3,3-tetramethylbutyl) phenol 4-(1,1,3,3-四甲基丁基)苯酚	140-66-9	1000
35	Bis(2-methoxyethyl) ether 二乙二醇二甲醚	111-96-6	1000
36	N,N-dimethylacetamide(DMAC) N,N-二甲基乙酰胺	127-19-5	1000
37	Radioactive Substance 放射性物質	-	Banned 禁用
38	Halogen(Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)) 鹵素(氟,氯,溴,碘) (Note2)	14762-94-8 22537-15-1 10097-32-2 14362-44-8	Br,Cl<900 Br+Cl<1500
39	Packaging 包裝材 (Pb+Cd+Hg+Cr+6)	-	100

Notes:

1. Accord with the exempt clause:

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

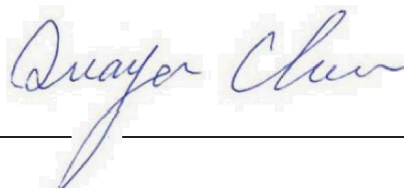
1.2 7(C)-I. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

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

Taiwan Semiconductor will continue to monitor developments of RoHS directive 2011/65/EU; PFOA/PFOS directive 2006/122/EC; SONY SS-00259 11th edition and Packaging and Packaging Waste directive 94/62/EC,2004/12/EC. hazardous substances. Taiwan Semiconductor is committed to meeting our corporate responsibilities for protection of the environment.

Quayer Chen
QRA Director
Quality Reliability Assurance
Taiwan Semiconductor Co., Ltd.

Signature: _____



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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.