RoHS & Halogen free & REACH
Compliance Declaration Letter (Part Maker)
RoHS & 無鹵素 & REACH 合規聲明書（零件製造者）

• RoHS & China RoHS Compliance Declaration

We hereby certify that our products MLCC, Chip-R, RF Device, Disc capacitors, Radial Leaded MLCC, Varistors and Inductors are compliant with European RoHS 2.0 Directive 2011/65/EU & the European Delegated Directive (EU)2015/863 all requirement and exemption conditions. (Please refer to the Note 1, 2.)

Our products MLCC, Chip-R are also compliant with China RoHS 2. (Please refer to Annex 1 for certificate.)

Note 1 : Thick film Chip-R WR/WF/WA/WT/WW/MR/MA/MF/SR/SF/SA/WK/MK series (except PN 12th "R" code, Jumper, Metal, Thin Film and the following series : WWxxC/WWxxP_V/WWxxW/WWxxT) contains Lead under the permission of RoHS exemption 7(C)-I : Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectrnic devices, or in a glass or ceramic matrix compound.

Note 2 : DISC LR series contains Lead under the permission of RoHS exemption 7(C)-II : Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher.

• RoHS & 中國 RoHS 合規聲明

我們特此證明我們的產品電容、電阻、RF 元件、圓板電容、獨石電容、壓敏電阻和電感器符合歐洲 RoHS 2.0 指令 2011/65 / EU & 歐盟授權指令 (EU)2015/863 的所有要求和豁免條件（請見備註 1, 2）。

我們的產品電容，電阻也符合中國 RoHS 2。（證書請參閱附件 1）

備註 1：厚膜電阻 WR/WF/WA/WT/WW/MR/MA/MF/SR/SF/SA/WK/MK 系列（除料號第 12 碼為 R 者、Jumper、Metal、Thin Film 及下列系列：WWxxC/WWxxP_V/WWxxW/WWxxT）含有鉛並使用 RoHS 豁免 7(C)-I：電氣和電子元件，含有玻璃中的鉛或介電陶瓷以外的陶瓷在電容器中，例如 壓電裝置，或玻璃或陶瓷基質化合物。

備註 2：圓板電容 LR 系列含有鉛並使用 RoHS 豁免 7(C)-II：電容器中的介電陶瓷中的鉛，額定電壓為 125 V AC 或 250 V DC 或更高。

Substance	中文名	Threshold 閾值
Lead (Pb)	鉛	0.1%(1000ppm)
Mercury (Hg)	汞	0.1%(1000ppm)
Cadmium (Cd)	鎘	0.01%(100ppm)
Hexavalent chromium (Cr VI)	六價鉻	0.1%(1000ppm)
Polybrominated biphenyls (PBB)	多溴聯苯	0.1%(1000ppm)
Polybrominated diphenyl ethers (PBDE)	多溴聯苯醚	0.1%(1000ppm)
Bis(2-ethylhexyl) phthalate (DEHP)	鄰苯二甲酸二（2-乙基己基）酯	0.1%(1000ppm)
Butyl benzyl phthalate (BBP)	鄰苯二甲酸甲苯基丁酯	0.1%(1000ppm)
Dibutyl phthalate (DBP)	鄰苯二甲酸二丁基酯	0.1%(1000ppm)
Diisobutyl phthalate (DIBP)	鄰苯二甲酸二異丁酯	0.1%(1000ppm)

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- ## Halogen free Compliance Declaration (Br<900ppm, Cl<900ppm, Br+Cl<1500ppm)

We hereby declare that MLCC, Chip-R, RF Device, Disc capacitors, Radial Leaded MLCC, Varistors (see Note 3 for except series) and Inductor parts delivered by us are compliant with Halogen free requirements.

Note 3 : Varistors TVZ series contains Br > 900 ppm.

- ## 無鹵素合規聲明 （溴<900ppm，氯<900ppm，溴+氯<1500ppm）

我們特此聲明，我們交付的電容、電阻、RF 元件、圓板電容、獨石電容、壓敏電阻（備註 3 除外）以及電感器部件均符合無鹵素要求。

備註 3：壓敏電阻 TVZ 系列含有 Br> 900 ppm。

- ## REACH Compliance Declaration (SVHC 27th - 224)

We hereby also declare that MLCC, Chip-R, RF Device, Disc capacitors, Radial Leaded MLCC, Varistors and Inductor parts manufactured by WALSIN are fully compliant with the related requirements of European Union Regulation (EC)1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) :

1. Under the structure of the REACH regulation, WALSIN is a manufacturer of "**ARTICLES**" to our EU customers (according to ECHA's guidance for articles, the electronic components shall be considered as articles). We do not manufacture "substances" or "preparations" and our articles do not involve the "intentional release of substances". Accordingly, we foresee no registration or pre-registration or Authorization requirement for the products we supplied.

2.With regard to the requirements of Article 33 of REACH : Duty to communicate Substances of Very High Concern (SVHC) information in articles. We declare that, except for Note 4, WALSIN's products and their corresponding packaging do not contain SVHC equal or above 0.1%. (please see notes 5 to 7 for additional instructions.) (For the SVHC candidate list released by ECHA on Jun 10, 2022, please refer to Annex 2.)

3.With regard to the requirements of Article 67 of REACH : A substance on its own, in a preparation or in an article, for which Annex XVII, contains a restriction shall not be manufactured, placed on the market or used unless it complies with the conditions of that restriction. We declare that none of the substances in the Conditions of restriction is present in WALSIN's products (and also package).

As REACH regulation is updated frequently, for the major changes afterwards, such as the addition of SVHC substances into Annex XIV, the addition of restricted substances in Annex XVII, WALSIN will evaluate the further revise in time and update this declaration to reflect these

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changes.

Annex XIV : https://echa.europa.eu/candidate-list-table

Annex XVII : https://echa.europa.eu/substances-restricted-under-reach
(http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R2235)

Note 4 : DISC LR series contains SVHC Lead tetroxide - Pb_3O_4 (CAS No. 1314-41-6) in its ceramic portion with the concentration less than 3% under the RoHS exemption 7(C)-II.

Note 5 : Some of Thick film Chip-R contain Diboron trioxide - B_2O_3 (CAS No. 1303-86-2) in raw materials, after a high-temperature process B_2O_3 and multiple constituents merge will transfer to glass, which is out of SVHC scope. Please refer to the JEITA's explanation (24JEITA Document No. 207), see Annex 3.

Note 6 : Some of Thick film Chip-R contain Lead oxide - PbO (CAS No. 1317-36-8) in raw materials, after a high-temperature process PbO and multiple constituents merge will transfer to glass, which is out of SVHC scope. Please refer to the JEITA's explanation (24JEITA Document No. 247), see Annex 4.

Note 7 : Some test reports of our Thick film Chip-R product showing results with lead(CAS No. 7439-92-1) > 1000ppm, but there was not any metallic lead was added to all of raw materials and manufacturing processes, the result of lead concentration is from lead oxide in some raw materials, and lead oxide and multiple constituents merge will transfer to glass which is out of SVHC scope. Explained as Note6 & Annex 4.

• REACH 合規聲明（SVHC 27th – 224）

我們特此聲明，WALSIN 製造的電容、電阻、RF 元件、圓板電容、獨石電容、壓敏電阻以及電感器部件完全符合歐盟法規 (EC)1907/2006 關於化學品註冊，評估，授權和限制使用（REACH）：

1.根據 REACH 法規的結構，WALSIN 是**“物品”**製造商（根據 ECHA 的物品指南，電子元件應視為物品）。我們不製造“物質”或“配製品”，我們的物品不涉及“故意釋放物質”。因此，我們預計我們提供的產品不須要進行註冊或預註冊或授權要求。

2.關於 REACH 第 33 條的要求：我們有傳達物品中含有高度關注物質（SVHC）信息的義務。我們聲明，除備註 4 外，WALSIN 的產品及其相應包裝材料 SVHC 含量皆小於 0.1%（補充說明請見備註 5 ~ 7）。（ECHA 於 2022 年 6 月 10 日發布的 SVHC 候選清單，請參閱附件 2）

3.關於 REACH 第 67 條的要求：附件 XVII 中含有限制的物質本身，配製品或物品中的物質不得製造，投放市場或使用，除非其符合這種限制的條件。我們聲明 WALSIN 產品（以及包裝）中沒有限制條件中的物質。

由於 REACH 法規經常更新，對於之後發生的重大變化，例如在附錄十四中添加 SVHC 物質，在附錄十七中添加限制物質，WALSIN 將及時評估進一步的修訂並更新本聲明以反映這些變化。

附錄十四：https://echa.europa.eu/candidate-list-table

附錄十七：https://echa.europa.eu/substances-restricted-under-reach
(http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R2235)

備註 4：DISC LR 系列陶瓷部分含有 SVHC 四氧化三鉛 Pb_3O_4 (CAS No. 1314-41-6) 根據 RoHS 豁免 7(C)-II，濃度低於 4%。

備註 5：部分厚膜電阻的材料中所含 B_2O_3（CAS No.1303-86-2），經高溫製程將與多種成分融合轉換為玻璃，

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玻璃非屬 SVHC 範圍。說明請參閱 JEITA 24JEITA-電部企第 207 號解釋（附件 3）。

備註 6：部分厚膜電阻的材料中所含 PbO（CAS No.1317-36-8，經高溫製程將與多種成分融合轉換為玻璃，玻璃非屬 SVHC 範圍。說明請參閱 JEITA 24JEITA-電部企第 247 號解釋（附件 4）。

備註 7：我們的部分厚膜電阻測試報告含有鉛（CAS No.7439-92-1）> 1000ppm，但所有原材料和製造工藝中都沒有添加"鉛"，只有一些原料中含有氧化鉛。但它將與多種成分融合，轉移到 SVHC 範圍之外的玻璃。（說明請見備註 6 及附件 4）

We further declare that all the statements in this letter are true and accurate. We are also aware that we will be liable for any direct damage incurred by your company arising from our breach of any declarations in this letter. The amount of damage shall be determined by an irrevocable judgment of competent judicial or relevant authorities.

我們進一步聲明，本函中的所有陳述都是真實準確的。我們也知道，對於因違反本函件中的任何聲明而導致貴公司發生的任何直接損害，我們將承擔責任。損害賠償金額應由主管司法或有關當局的判決確定。

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Designation 職稱 : President 總經理

Date 日期 : 2022/06/28

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Annex 1 : Certificate of EU RoHS & China RoHS
附件 1：歐盟 RoHS 和中國 RoHS 證書

Certificate of EU RoHS 2.0 (2011/65/EU) - IECQ QC 080000 certification
歐盟 RoHS 2.0 認證（ 2011/65 / EU ）- IECQ QC 080000 認證

→Kaohsiung & Yang-Mei plant 高雄&楊梅工廠 ：

→Dongguan plant 東莞工廠:

→Suzhou plant 蘇州工廠:

→Guangzhou plant 廣州工廠:

Certificate of China RoHS 2 中國 RoHS 2 證書

→MLCC 電容 ：

→Chip-R 電阻 ：

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Annex 2: Candidate list of SVHC published by ECHA

附件 2：ECHA 發布的 SVHC 候選清單

No.	Substance name	中文名	CAS number	EC number
SVHC 27 (2022/06/10)				
224	N-(hydroxymethyl)acrylamide	N-(羥甲基)丙烯醯胺	924-42-5	213-103-2
SVHC 26 (2022/01/17)				
223	tris(2-methoxyethoxy)vinylsilane	三(2-甲氧基乙氧基)乙烯基矽烷	1067-53-4	213-934-0
222	S-(tricyclo(5.2.1.0'2,6)deca-3-en-8(or 9)-yl O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	硫-(三環[5.2.1.0'2,6]癸-3-烯-8(或 9)-基) 氧-(異丙基或異丁基或 2-乙基己基) 氧-(異丙基或異丁基或 2-乙基己基)二硫代磷酸酯	255881-94-8	401-850-9
221	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol	6,6'雙二叔丁基-2,2'-亞甲基雙對甲酚	119-47-1	204-327-1
220	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene] bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC) ●(3E)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one ●(1R,3E,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one ●(1S,3Z,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one ●(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one ●(1R,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one ●(1S,3E,4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one ●(1R,3Z,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptan-2-one	(±)-1,7,7-三甲基-3-[(4-甲基苯基)亞甲基]二環[2.2.1]庚烷-2-酮，包括各個異構體和/或其組合	--- 1782069-81-1 95342-41-9 852541-25-4 36861-47-9 741687-98-9 852541-30-1 852541-21-0	--- --- --- --- 253-242-6 --- --- ---
SVHC 25 (2021/07/08)				

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No.	Substance name	中文名	CAS number	EC number
219	Phenol, alkylation products (mainly in para position) with C12-rich branched alkyl chains from oligomerisation, covering any individual isomers and/ or combinations thereof (PDDP) ●phenol, 4-dodecyl-, branched ●4-isododecylphenol ●Phenol, 4-isododecyl ●Phenol, dodecyl-, branched ●phenol, (tetrapropenyl) derivatives ●Phenol, tetrapropylene	經由低聚合反應烷基化的苯酚產物(主要在對位位置)帶有 12 個碳的支鏈或直鏈，並涵蓋各種同分異構物及/或其各種組合	210555-94-5 27459-10-5 27147-75-7 121158-58-5 74499-35-7 57427-55-1	--- --- --- 310-154-3 --- ---
218	Orthoboric acid, sodium salt ●boric acid (H3BO3), sodium salt,hydrate ●Boric acid (H3BO3), disodium salt ●Trisodium orthoborate ●Boric acid, sodium salt ●Orthoboric acid, sodium salt ●Boric acid (H3BO3), sodium salt (1:1)	硼酸鈉鹽(群組)	25747-83-5 22454-04-2 14312-40-4 1333-73-9 13840-56-7 14890-53-0	--- --- 238-253-6 215-604-1 237-560-2 ---
217	Medium-chain chlorinated paraffins (MCCP) (UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17) ●Alkanes, C14-16, chloro ●Alkanes, C14-17, chloro ●di-, tri- and tetrachlorotetradecane ●Tetradecane, chloro derivs.	中鏈氯化石蠟[UVCB 物質包含大於或等於 80%的直鏈氯代烷烴，碳鏈長度在 C14 至 C17 範圍內]	1372804-76-6 85535-85-9 --- 198840-65-2	--- 287-477-0 950-299-5 ---
216	Glutaral	戊二醛	111-30-8	203-856-5
215	4,4'-(1-methylpropylidene)bisphenol	雙酚 B	77-40-7	201-025-1
214	2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers ●(2R)-3-(4-tert-butylphenyl)-2-methylpropanal ●2-(4-tert-butylbenzyl)propionaldehyde ●(2S)-3-(4-tert-butylphenyl)-2-methylpropanal	2-(4-叔丁基苄基)丙醛及其個別立體異構物	75166-31-3 80-54-6 75166-30-2	--- 201-289-8 ---
213	2,2-bis(bromomethyl)propane1,3-diol (BMP); 2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA); 2,3-dibromo-1-propanol (2,3-DBPA)	2,2-雙(溴甲基)-1,3-丙二醇 3-溴-2,2-雙(溴甲基)-1-丙醇 2,3-二溴-1-丙醇	3296-90-0 1522-92-5 36483-57-5 96-13-9	221-967-7 253-057-0 202-480-9

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No.	Substance name	中文名	CAS number	EC number
212	1,4-dioxane	1,4-二氧陸圜	123-91-1	204-661-8
	SVHC 24 (2021/01/19)			
211	Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	二月桂酸二辛基錫，錫烷，二辛基-，雙(椰油醯氧基)衍生物，以及任何其他錫烷，二辛基-，雙(脂肪醯氧基)衍生物。其中C12為脂肪醯氧基部分的主要碳原子數	--- 91648-39-4 3648-18-8	--- 293-901-5 222-883-3
210	Bis(2-(2-methoxyethoxy)ethyl)ether	雙(2-(2-甲氧基乙氧基)乙基)醚	143-24-8	205-594-7
	SVHC 23 (2020/06/25)			
209	Dibutylbis(pentane-2,4-dionato-O,O')tin	二正丁基雙(乙醯丙酮基)錫	22673-19-4	245-152-0
208	Butyl 4-hydroxybenzoate	4-羥基苯甲酸丁酯	94-26-8	202-318-7
207	2-methylimidazole	2-甲基咪唑	693-98-1	211-765-7
206	1-vinylimidazole	1-乙烯基咪唑	1072-63-5	214-012-0
	SVHC 22 (2020/01/16)			
205	Perfluorobutane sulfonic acid (PFBS) and its salts	全氟丁烷磺酸及其鹽類	---	---
204	Diisohexyl phthalate	二異己基鄰苯二甲酸酯	71850-09-4	276-090-2
203	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	2-甲基-1-[4-(甲基硫代)苯基]-2-(4-嗎啉基)-1-丙酮	71868-10-5	400-600-6
202	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	2-苄基-2-二甲基氨基-1-(4-嗎啉苯基)丁酮	119313-12-1	404-360-3
	SVHC 21 (2019/07/16)			
201	4-tert-butylphenol	4-叔丁基苯酚	98-54-4	202-679-0
200	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	2,3,3,3-四氟-2-(七氟丙氧基)丙酸，鹽類，及其醯鹵(涵蓋他們其個別和組合之同分異構物)	---	---
199	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	三(4-壬苯基,支鏈及直鏈)亞磷酸酯，含≥0.1%的支鏈及直鏈4-壬基酚	---	---
198	2-methoxyethyl acetate	2-甲烷氧基乙基乙酯	110-49-6	203-772-9
	SVHC 20 (2019/01/15)			
197	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1] heptan-2-one (3-benzylidene camphor; 3-BC)	1,7,7-三甲基-3-(苯亞甲基)雙環[2,2,1]庚烷-2-酮 (3-苯亞甲基樟腦)	15087-24-8	239-139-9
196	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	2,2-雙(4'-羥基苯基)-4-甲基戊烷	6807-17-6	401-720-1

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No.	Substance name	中文名	CAS number	EC number
195	Benzo[k]fluoranthene	苯並[k]熒蒽	205-916-6	205-916-6
194	Fluoranthene	熒蒽	206-44-0 93951-69-0	205-912-4
193	Phenanthrene	菲	85-01-8	201-581-5
192	Pyrene	芘	129-00-0 1718-52-1	204-927-3
SVHC 19 (2018/06/27)				
191	Terphenyl, hydrogenated	氫化三聯苯	61788-32-7	262-967-7
190	Octamethylcyclotetrasiloxane (D4)	八甲基環四矽氧烷	556-67-2	209-136-7
189	Lead	鉛	7439-92-1	231-100-4
188	Ethylenediamine (EDA)	乙二胺	107-15-3	203-468-6
187	Dodecamethylcyclohexasiloxane (D6)	十二甲基環六矽氧烷	540-97-6	208-762-8
186	Disodium octaborate	八硼酸二鈉	12008-41-2	234-541-0
185	Dicyclohexyl phthalate (DCHP)	鄰苯二甲酸二環己酯	84-61-7	201-545-9
184	Decamethylcyclopentasiloxane (D5)	十甲基環五矽氧烷	541-02-6	208-764-9
182	Benzo[ghi]perylene	苯并[g,h,I]苝	191-24-2	205-883-8
182	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride; TMA)	偏苯三酸酐	552-30-7	209-008-0
SVHC 18 (2018/01/16)				
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) (with ≥0.1% w/w 4-heptylphenol, branched and linear (4-HPbl))	1,3,4-噻二唑-2,5-二巯酮、甲醛與支鏈和直鏈4-庚基苯酚的反應產物(RP-HP) (含≥0.1%支鏈和直鏈4-庚基苯酚)	---	---

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No.	Substance name	中文名	CAS number	EC number
180	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) (covering any of its individual anti- and syn-isomers or any combination thereof) ●(1S,2S,5R,6R,9S,10S,13R,14R)-1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.1^{6,9}.0^{2,13}.0^{5,10}]octadeca-7,15-diene ●1,6,7,8,9,14,15,16,17,17,18,18-dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ●(1S,2S,5S,6S,9R,10R,13R,14R)-1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.1^{6,9}.0^{2,13}.0^{5,10}]octadeca-7,15-diene ●rel-(1R,4S,4aS,6aR,7R,10S,10aS,12aR)-1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-1,4:7,10-dimethanodibenzo[a,e]cyclooctene ●rel-(1R,4S,4aS,6aS,7S,10R,10aR,12aR)-1,2,3,4,7,8,9,10,13,13,14,14-dodecachloro-1,4,4a,5,6,6a,7,10,10a,11,12,12a-dodecahydro-1,4:7,10-dimethanodibenzo[a,e]cyclooctene	1,6,7,8,9,14,15,16,17,17,18,18-十二氯五環[12.2.1.16,9.02,13.05,10]十八碳-7,15-二烯 ("Dechlorane Plus"TM) [含有其任何單獨的反式和順式異構體或其任何組合]	--- 135821-03-3 13560-89-9 135821-74-8 --- ---	--- --- 236-948-9 --- --- ---
179	Chrysene	䓛	218-01-9 1719-03-5	205-923-4
178	Cadmium nitrate	硝酸鎘	10022-68-1 10325-94-7	233-710-6
177	Cadmium hydroxide	氫氧化鎘	21041-95-2	244-168-5
176	Cadmium carbonate	碳酸鎘	513-78-0	208-168-9
175	Benz[a]anthracene	苯并[a]蒽	56-55-3 1718-53-2	200-280-6
SVHC 17 (2017/07/07)				
174	Perfluorohexane-1-sulphonic acid and its salts	全氟己基磺酸及其鹽類	---	---
SVHC 16 (2017/01/12)				

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No.	Substance name	中文名	CAS number	EC number
173	4-Heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	4-庚基苯酚, 支鏈及直鏈包括含有7個碳烷基鏈的所有獨立的同分異構體和所有含有線性或分支 7 個碳烷基鏈的 UVCB 物質	---	---
172	*p*-(1,1-dimethylpropyl)phenol	對(1,1-二甲基丙基)苯酚	80-46-6	201-280-9
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	十九氟癸酸及其鈉和銨鹽	335-76-2 3830-45-3 3108-42-7	206-400-3 --- 221-470-5
170	4,4'-isopropylidenediphenol (bisphenol A; BPA)	雙酚 A	80-05-7	201-245-8
	SVHC 15 (2016/06/20)			
169	Benzo[def]chrysene (Benzo[a]pyrene)	苯並[def]屈 (苯並[a]芘)	50-32-8	200-028-5
	SVHC 14 (2015/12/18)			
168	Perfluorononan-1-oic acid (2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-Heptadecafluorononanoic acid and its sodium and ammonium salts	全氟壬酸及其鈉鹽和氨鹽	375-95-1 21049-39-8 4149-60-4	206-801-3
167	Nitrobenzene	硝基苯	98-95-3	202-716-0
166	2-(2H-Benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenol (UV-350)	UV-350	36437-37-3	253-037-1
165	2,4-Di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	UV-327	3864-99-1	223-383-8
164	1,3-Propanesultone	1,3-丙烷磺內酯	1120-71-4	214-317-9
	SVHC 13 (2015/06/15)			
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	5-仲丁基-2-（2,4-二甲基環丁-3-烯-1-基）-5-甲基-1,3-二惡烷[1]，5-仲丁基-2-(4,6-二甲基環己-3-烯-1-基）-5-甲基-1,3-二惡烷[2] [覆蓋任何[1]和[2]或者其任意組合的單獨的異構體 (卡拉花醛及其同分易構物)	---	---

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No.	Substance name	中文名	CAS number	EC number
162	≥0.3%1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	鄰苯二甲酸二(C6-C6)烷基酯：(癸基，己基，辛基)酯與 1，2-鄰苯二甲酸的複合物且鄰苯二甲酸二己酯含量	68515-51-5 68648-93-1	271-094-0 272-013-1
SVHC 12 (2014/12/17)				
161	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	二正辛基-双(2-乙基己基巯基乙酸酯) 錫和單辛基-三(2-乙基己基巯基乙酸酯) 錫的反應物	---	---
160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	二正辛基-双(2-乙基己基巯基乙酸酯) 錫	15571-58-1	239-622-4
159	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	2-(2’-羥基-3’,5’-二-叔-戊基苯基)-苯並三唑 (紫外線吸收劑 328)	25973-55-1	247-384-8
158	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	2-(2-羥基-3’,5’-二-叔-丁基苯基)-苯並三唑(紫外線吸收劑 320)	3846-71-7	223-346-6
157	Cadmium sulphate	硫酸鎘	10124-36-4; 31119-53-6	233-331-6
156	Cadmium fluoride	氟化鎘	7790-79-6	232-222-0
SVHC 11 (2014/06/16)				
155	Sodium peroxometaborate	過氧偏硼酸鈉	7632-04-4	231-556-4
154	Sodium perborate; perboric acid, sodium salt	過硼酸鈉;過硼酸鈉鹽	---	239-172-9; 234-390-0
153	Cadmium chloride	氯化鎘	10108-64-2	233-296-7
152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	鄰苯二甲酸二己酯(支鏈和直鏈)	68515-50-4	271-093-5
SVHC 10 (2013/12/16)				
151	Trixylyl phosphate	磷酸三(二甲苯)酯	25155-23-1	246-677-8
150	Lead di(acetate)	醋酸鉛	301-04-2	206-104-4
149	Imidazolidine-2-thione (2-imidazoline-2-thiol)	亞乙基硫脲	96-45-7	202-506-9
148	Dihexyl phthalate	鄰苯二甲酸二己酯	84-75-3	201-559-5

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No.	Substance name	中文名	CAS number	EC number
147	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	直接黑 38	1937-37-7	217-710-3
146	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	直接紅 28	573-58-0	209-358-4
145	Cadmium sulphide	氧化鎘	1306-23-6	215-147-8
	SVHC 9 (2013/06/20)			
144	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	分支或線性的乙氧化壬基酚，包括含有 9 個碳烷基鏈的所有獨立的同分異構體和所有含有線性或分支 9 個碳烷基鏈的 UVCB 物質	---	---
143	Dipentyl phthalate (DPP)	鄰苯二甲酸二戊酯	131-18-0	205-017-9
142	Pentadecafluorooctanoic acid (PFOA)	全氟辛酸	335-67-1	206-397-9
141	Ammonium pentadecafluorooctanoate (APFO)	全氟辛酸銨	3825-26-1	223-320-4
140	Cadmium oxide	氧化鎘	1306-19-0	215-146-2
139	Cadmium	鎘	7440-43-9	231-152-8
	SVHC 8 (2012/12/19)			
138	N-methylacetamide	N-甲基乙醯胺	79-16-3	201-182-6
137	o-Toluidine; 2-Aminotoluene	鄰-甲苯胺	95-53-4	202-429-0
136	o-aminoazotoluene	鄰-胺基偶氮甲苯	97-56-3	202-591-2
135	Biphenyl-4-ylamine	4-胺基聯苯	92-67-1	202-177-1
134	6-methoxy-m-toluidine (p-cresidine)	6-甲氧基-間-甲苯胺	120-71-8	204-419-1
133	4-methyl-m-phenylenediamine (2,4-toluene-diamine)	4-甲基-間-苯二胺 (2,4-二胺基甲苯)	95-80-7	202-453-1
132	4-Aminoazobenzene; 4-Phenylazoaniline	4-胺基偶氮苯	60-09-3	200-453-6
131	4,4'-oxydianiline and its salts	4,4'-氧二苯胺及其鹽類	101-80-4	202-977-0
130	4,4'-methylenedi-o-toluidine	4,4'-亞甲基二-鄰-甲苯胺	838-88-0	212-658-8
129	Dinoseb	達諾殺	88-85-7	201-861-7

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No.	Substance name	中文名	CAS number	EC number
128	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	3-乙基-2-甲基-2-(3-甲基丁基)噁唑烷	143860-04-2	421-150-7
127	Dimethyl sulphate	硫酸二甲酯	77-78-1	201-058-1
126	Diethyl sulphate	硫酸二乙酯	64-67-5	200-589-6
125	Furan	呋喃	110-00-9	203-727-3
124	Trilead dioxide phosphonate	二鹼式亞磷酸鉛	12141-20-7	235-252-2
123	Tetralead trioxide sulphate	三鹼式硫酸鉛	12202-17-4	235-380-9
122	Tetraethyllead	四乙基鉛	78-00-2	201-075-4
121	Sulfurous acid, lead salt, dibasic	亞硫酸鉛	62229-08-7	263-467-1
120	Pyrochlore, antimony lead yellow	燒綠石銻鉛黃	8012-00-8	232-382-1
119	Pentalead tetraoxide sulphate	硫酸四氧化五鉛	12065-90-6	235-067-7
118	Lead dinitrate	硝酸鉛	10099-74-8	233-245-9
117	Lead cynamidate	氰胺化鉛	20837-86-9	244-073-9
116	Fatty acids, C16-18, lead salts	C16-18-脂肪酸鉛鹽	91031-62-8	292-966-7
115	Dioxobis(stearato)trilead	雙(十八酸基)二氧三鉛	12578-12-0	235-702-8
114	[Phthalato(2-)]dioxotrilead (dibasic lead phthalate)	二鹼式鄰苯二甲酸鉛	69011-06-9	273-688-5
113	Lead oxide sulfate (basic lead sulfate)	鹼式硫酸鉛	12036-76-9	234-853-7
112	Acetic acid, lead salt, basic	鹼式乙酸鉛	51404-69-4	257-175-3
111	1,2-Diethoxyethane	乙二醇二乙醚	629-14-1	211-076-1
110	n-pentyl-isopentylphthalate	鄰苯二甲酸正戊基異戊基酯	---	933-378-9
109	Diisopentylphthalate (DIPP)	鄰苯二甲酸二異戊酯	605-50-5	210-088-4
108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	支鏈和直鏈 1,2-苯二甲酸二戊酯	84777-06-0	284-032-2
107	Propylene oxide; 1,2-epoxypropane; methyloxirane	環氧丙烷	75-56-9	200-879-2
106	1-bromopropane; n-propyl bromide	1-溴丙烷	106-94-5	203-445-0
105	Silicic acid, barium salt, lead-doped	摻雜鉛的矽酸鋇	68784-75-8	272-271-5
104	Silicic acid, lead salt	矽酸鉛	11120-22-2	234-363-3
103	Lead Titanium Zirconium Oxide	鋯鈦鉛氧化物	12626-81-2	235-727-4
102	Lead titanium trioxide	鈦酸鉛(Ⅱ)	12060-00-3	235-038-9
101	Basic lead carbonate (trilead bis(carbonate)dihydroxide)	鹼式碳酸鉛	1319-46-6	215-290-6
100	Lead bis(tetrafluoroborate)	二(四氟硼酸)鉛	13814-96-5	237-486-0
99	Lead tetroxide (orange lead)	四氧化三鉛(鉛丹)	1314-41-6	215-235-6
98	Lead oxide (lead monoxide)	一氧化鉛	1317-36-8	215-267-0
97	Dibutyltin dichloride (DBT)	二氯化二丁錫	683-18-1	211-670-0

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No.	Substance name	中文名	CAS number	EC number
96	N,N-dimethylformamide; dimethyl formamide	二甲基甲醯胺	68-12-2	200-679-5
95	Methoxy acetic acid	甲氧基乙酸	625-45-6	210-894-6
94	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated - [covering well-defined substances and UVCB substances, polymers and homologues]	乙氧化 4-(1,1,3,3-四甲基丁基)苯酚.涵蓋明確定義物質及 UVCB 物質、聚合物及同系物	---	---
93	4-Nonylphenol, branched and linear - [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	支鏈和直鏈-4-壬基酚，有烷基直鏈及/或支鏈以 9 個碳共價於酚的對位，含蓋所有由單一或多種異構物組合的明確定義物質及 UVCB 物質	---	---
92	Hexahydromethylphathalic anhydride, Hexahydro-4-methylphathalic anhydride, Hexahydro-1-methylphathalic anhydride, Hexahydro-3-methylphathalic anhydride	甲基六氫鄰苯二甲酐, 4-甲基六氫鄰苯二甲酐, 1-甲基六氫鄰苯二甲酐, 3-甲基六氫鄰苯二甲酐	25550-51-0 19438-60-9 48122-14-1 57110-29-9	247-094-1 243-072-0 256-356-4 260-566-1
91	Cyclohexane-1,2-dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA)	六氫鄰苯二甲酐	85-42-7 13149-00-3 14166-21-3	201-604-9 236-086-3 238-009-9
90	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	1,1'-偶氮雙甲醯胺	123-77-3	204-650-8
89	Heptacosafluorotetradecanoic acid	全氟十四酸	376-06-7	206-803-4
88	Henicosafluoroundecanoic acid	全氟十一酸	2058-94-8	218-165-4
87	Tricosafluorododecanoic acid	全氟十二酸	307-55-1	206-203-2
86	Pentacosafluorotridecanoic acid	全氟十三酸	72629-94-8	276-745-2
85	Bis(pentabromophenyl) ether (DecaBDE)	十溴二苯醚	1163-19-5	214-604-9
SVHC 7 (2012/06/18)				
84	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol	[4,4’-二[(二甲氨基)苯基]-4”-甲氨基苯甲醇]	561-41-1	209-218-2
83	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	C.I.溶劑藍 4	6786-83-0	229-851-8
82	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)	C.I.鹼性藍 26	2580-56-5	219-943-6

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No.	Substance name	中文名	CAS number	EC number
81	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	C.I.鹼性紫 3	548-62-9	208-953-6
80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	4,4'-(对二甲氨基)二苯基甲烷（米氏鹼）	101-61-1	202-959-2
79	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	[4,4'-二(N,N-二甲氨基)二苯甲酮（米氏酮）]	90-94-8	202-027-5
78	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	異氰尿酸 β-三縮水甘油酯	59653-74-6	423-400-0
77	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	異氰尿酸三縮水甘油酯	2451-62-9	219-514-3
76	Lead(II) bis(methanesulfonate)	甲基磺酸鉛	17570-76-2	401-750-5
75	Formamide	甲醯胺	75-12-7	200-842-0
74	Diboron trioxide	三氧化二硼	1303-86-2	215-125-8
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	乙二醇二甲醚	110-71-4	203-794-9
72	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	三甘醇二甲醚	112-49-2	203-977-3
	SVHC 6 (2011/12/19)			
71	Lead dipicrate	二苦味酸鉛	6477-64-1	229-335-2
70	Lead styphnate	史蒂芬酸鉛 (2,4,6-三硝基苯二酚鉛)	15245-44-0	239-290-0
69	Lead azide / Lead diazide	疊氮化鉛	13424-46-9	236-542-1
68	Phenolphthalein	酚酞	77-09-8	201-004-7
67	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	4,4'-亞甲雙(2-氯苯胺) 或稱 2,2'-二氯-4,4'-亞甲基二苯胺	101-14-4	202-918-9
66	N,N-dimethylacetamide (DMAC)	N,N-二甲基乙醯胺	127-19-5	204-826-4
65	Trilead diarsenate	砷酸鉛	3687-31-8	222-979-5
64	Calcium arsenate	砷酸钙	7778-44-1	231-904-5
63	Arsenic acid	砷酸	7778-39-4	231-901-9
62	Bis(2-methoxyethyl) ether	二乙二醇二甲醚	111-96-6	203-924-4
61	1,2-dichloroethane	1,2-二氯乙烷	107-06-2	203-458-1
60	4-(1,1,3,3-tetramethylbutyl)phenol	4-三級辛基苯酚	140-66-9	205-426-2

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No.	Substance name	中文名	CAS number	EC number
59	2-Methoxyaniline; o-Anisidine	鄰-甲氧苯胺	90-04-0	201-963-1
58	Bis(2-methoxyethyl) phthalate	鄰苯二甲酸二(2-甲氧基乙)酯	117-82-8	204-212-6
57	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	甲醛與苯胺寡聚反應的產物(工業級MDA)	25214-70-4	500-036-1
56	Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF)	氧化鋯矽酸鋁耐火陶瓷纖維	---	---
55	Aluminosilicate Refractory Ceramic Fibres (RCF)	矽酸鋁耐火陶瓷纖維	---	---
54	Pentazinc chromate octahydroxide	鉻酸五鋅八氫氧化物	49663-84-5	256-418-0
53	Potassium hydroxyoctaoxodizincatedi-chromate	氫氧化鉻酸鋅鉀	11103-86-9	234-329-8
52	Dichromium tris(chromate)	鉻酸鉻	24613-89-6	246-356-2
	SVHC 5 (2011/06/20)			
51	Strontium chromate	鉻酸鍶	7789-06-2	232-142-6
50	Hydrazine	聯胺或水合聯胺	7803-57-8 302-01-2	206-114-9
49	2-Ethoxyethyl acetate	乙二醇乙醚醋酸酯	111-15-9	203-839-2
48	1-Methyl-2-pyrrolidone	1-甲基吡咯烷酮	872-50-4	212-828-1
47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	鄰苯二甲酸二(C7-11支鏈與直鏈)烷基酯	68515-42-4	271-084-6
46	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	鄰苯二甲酸二-C6-8-支鏈庚酯	71888-89-6	276-158-1
45	1,2,3-Trichloropropane	1,2,3-三氯丙烷	96-18-4	202-486-1
	SVHC 4 (2010/12/15)			
44	Cobalt(II) diacetate	醋酸鈷（二價）	71-48-7	200-755-8
43	Cobalt(II) sulphate	硫酸鈷（二價）	10124-43-3	233-334-2
42	Cobalt(II) dinitrate	硝酸鈷（二價）	10141-05-6	233-402-1
41	Cobalt (II) carbonate	碳酸鈷（二價）	513-79-1	208-169-4
40	Chromium trioxide	三氧化鉻	1333-82-0	215-607-8
39	Acids generated from chromium trioxide and their oligomers. Group containing: Chromic acid, Dichromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid	從三氧化鉻生成的酸類與其它寡體：	---	---
	Chromic acid	鉻酸	7738-94-5	231-801-5;
	Dichromic acid	重鉻酸	13530-68-2	236-881-5
	Oligomers of chromic acid and dichromic acid	鉻酸與重鉻酸的其它寡體	---	---

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No.	Substance name	中文名	CAS number	EC number
38	2-Methoxyethanol	乙二醇甲醚	109-86-4	203-713-7
37	2-Ethoxyethanol	乙二醇乙醚	110-80-5	203-804-1
		SVHC 3 (2010/06/18)		
36	Trichloroethylene	三氯乙烯	79-01-6	201-167-4
35	Tetraboron disodium heptaoxide, hydrate	水合七氧四硼酸二鈉	12267-73-1	235-541-3
34	Sodium chromate	鉻酸鈉	7775-11-3	231-889-5
33	Potassium dichromate	重鉻酸鉀	7778-50-9	231-906-6
32	Potassium chromate	鉻酸鉀	7789-00-6	232-140-5
31	Disodium tetraborate, anhydrous	無水四硼酸二鈉	1303-96-4 1330-43-4 12179-04-3	215-540-4
30	Boric acid	硼酸	10043-35-3 11113-50-1	233-139-2 234-343-4
29	Ammonium dichromate	重鉻酸銨	2151163.0 (7789-09-5)	232-143-1
		SVHC 2 (2010/01/13)		
28	Acrylamide	丙烯醯胺	79-06-1	201-173-7
27	Tris(2-chloroethyl)phosphate	三 2-(氯乙基)磷酸酯	115-96-8	204-118-5
26	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	黃色硫化鉻酸鉛 (C.I.黃色 34)	1344-37-2	215-693-7
25	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	紅色鉬鉻酸鉛硫酸鹽 (C.I.紅色 104)	12656-85-8	235-759-9
24	Lead chromate	鉻酸鉛	7758-97-6	231-846-0
23	Diisobutyl phthalate(DIBP)	鄰苯二甲酸二異丁酯	84-69-5	201-553-2
22	2,4-Dinitrotoluene	2,4-二硝基甲苯	121-14-2	204-450-0
21	Pitch, coal tar, high temperature	煤瀝青,高溫	65996-93-2	266-028-2
20	Anthracene oil, anthracene paste	蒽油，蒽糊	90640-81-6	292-603-2
19	Anthracene oil, anthracene -low	蒽油，含蒽量少	90640-82-7	292-604-8
18	Anthracene oil, anthracene paste, anthracene fraction	蒽油,蒽糊,蒽餾分離液	91995-15-2	295-275-9
17	Anthracene oil, anthracene paste, distn. Lights	蒽油,蒽糊,輕油	91995-17-4	295-278-5
16	Anthracene oil	蒽油	90640-80-5	292-602-7
		SVHC 1 (2008/10/28)		
15	Triethyl arsenate	三乙基砷酸酯	15606-95-8	427-700-2
14	Lead hydrogen arsenate	砷酸氫鉛	7784-40-9	232-064-2
13	Bis(tributyltin)oxide (TBTO)	氧化三丁錫	56-35-9	200-268-0

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No.	Substance name	中文名	CAS number	EC number
12	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	短鏈氯化石蠟	85535-84-8	287-476-5
11	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	六溴環十二烷	25637-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	247-148-4 221-695-9
10	Benzyl butyl phthalate (BBP)	鄰苯二甲酸丁酯苯甲酯	85-68-7	201-622-7
9	Bis (2-ethyl(hexyl)phthalate) (DEHP)	鄰苯二甲酸二(2-乙基已基)酯	117-81-7	204-211-0
8	Dibutyl phthalate	鄰苯二甲酸二丁酯 DBP	84-74-2	201-557-4
7	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	5-叔丁基-2,4,6-三硝基間二甲苯	81-15-2	201-329-4
6	Sodium dichromate	重鉻酸鈉・二倍結晶水	7789-12-0 10588-01-9	234-190-3
5	Diarsenic trioxide	三氧化二砷	1327-53-3	215-481-4
4	Diarsenic pentaoxide	五氧化二砷	1303-28-2	215-116-9
3	Cobalt dichloride	氯化鈷	7646-79-9	231-589-4
2	4,4'-Diaminodiphenylmethane (MDA)	4,4'-二氨基二苯甲烷	101-77-9	202-974-4
1	Anthracene	蒽	120-12-7	204-371-1

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Annex 3 : B_2O_3 (CAS No. 1303-86-2) JEITA's explanation

附件 3：B_2O_3（CAS No.1303-86-2）JEITA 的說明

24JEITA-電部企第 207 号
December 12, 2012

Japan Electronics and Information Technology Industries Association
Electronic Components Board
Electronic Components Engineering Committee
Electronic Components Environment Subcommittee

About the industry's position relating to diboron trioxide (B_2O_3), newly listed in the Seventh SVHC under the EU-REACH Regulation

Diboron trioxide (B_2O_3), CAS No. 1303-86-2, which is used in raw materials for glass or ceramics (hereinafter the "glass/ceramics"), has been newly listed in the Seventh SVHC (announced June 18, 2012) under the European Union's REACH Regulation ((EC) No 1907/2006). We present below the electronic components industry's position relating to the transmission of information on diboron trioxide (B_2O_3).

1. Methods of indicating diboron trioxide (B_2O_3) (CAS No. 1303-86-2)

In the field of electronic components, diboron trioxide (B_2O_3) is a substance which is widely used as a raw material for glass/ceramics of protective films, resistive bodies, electrodes, and others.

Chemical compounds in raw materials, however, first become a solid solution, and then, form glass/ceramics, which are multi-constituent substances (UVCB). It is difficult to assign a specific CAS Registry Number, keyed to the substance composition, to a UVCB substance like glass, which assumes an amorphous state with no identifiable crystal system, and ceramics, which do not always have the ingredients in fixed proportions.

In general, UVCB substances like glass/ceramics cannot be identified with a specific CAS Number. Instead, it has been an established practice to express the constituent substances as oxides (diboron trioxides (B_2O_3), for example) and then describe the final UVCB as a mixture of such oxides. We consider it important to note the fact that the oxides themselves are not included in a UVCB although the UVCB is identified with the oxides.

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Reference URL:

- Position of the Environmental Technology Board, the Glass Industry Conference of Japan
  http://www.gic.jp/techno/REACH.html (Only Japanese)
- JEITA Guidelines for Indicating Ceramic
  http://home.jeita.or.jp/ecb/ceramic.html (Only Japanese)

2. About replies to Certificate for Non-Inclusion of SVHC and others

Since diboron trioxide (B_2O_3) itself is not formed in glass/ceramics of a finished electronic component for the reason given in foregoing section No. 1, we recommend replying that it is "Not Included."

3. About transmission of information on chemical substances included in products

Notwithstanding foregoing section No.2, we, in many cases, still specifically list diboron trioxide (B_2O_3) as a constituent as in the past in the information we transmit on an electronic component. The reasons are given in items (1) and (2) below. Please, however, for the reason given in section No. 1, interpret such a listing as "not classified as an SVHC substance."

We specifically list diboron trioxide (B_2O_3) in the information on chemical substances included in a product for the following reasons:

(1) Glass of a multi-constituent substance (UVCB) has no CAS Number previously registered in entry of data into IMDS. The inclusion rates of all substances included in each constituent material must add up to 100% (with less than 10% of wild card compounds) for the particular constituent material.
Reference to the oxides to describe glass is recommended in the IMDS Recommendation.

(2) Diboron trioxide (B_2O_3) has always been disclosed in the past as "a constituent of an intentionally-added raw material" as required to complete organizational or industry formats other than IMDS.

For the reasons as shown in the foregoing, reference to the constituent oxide compounds is a recognized method to describe UVCB substances. We consider this method as most

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appropriate to use in the information to be transmitted relating to the UVCB substances.

The gist of our position as given here is that we will represent boron present in molded articles as "diboron trioxide (B_2O_3)" in the information to be transmitted but that "diboron trioxide (B_2O_3)" so listed does not refer to an SVHC.

4. Future action

Diboron trioxide (B_2O_3) is universally used in electronic components. There are currently numerous electronic components that cannot use alternative glass/ceramics containing no diboron trioxide (B_2O_3).

We will meet the laws and regulations and take action on the transmission of information in line with the trends of the automotive, electric, electronic, and other industries.

Footnotes:

- SVHC: Substances of Very High Concern. They are substances having the property of causing significant harm to human health or environment, and are selected to be added to REACH Annex XIV or the Candidate List referenced in Annex XIV.
- UVCB: Substances of Unknown or Variable composition, Complex reaction products or Biological materials.
- IMDS: International Material Data System. It is a system for collecting information on, and the substances included in, constituent materials of automobiles.
- Wild card compound: A fictitious compound (as used in reports related to an unspecified compound; or as used to conceal a highly confidential substance) that is used in IMDS as a matter of convenience.

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Annex 4 : PbO (CAS No. 1317-36-8) JEITA's explanation

附件 4：PbO（CAS No.1317-36-8）JEITA 的說明

4 March, 2013

Joint Position of Associations inside the Electrical Industry's Value Chain

View about SVHC*) in Glass concerning the EU-REACH Regulation
= Including the Handling of the Lead Oxides and Complex Oxides Containing Lead
Added in the 8th Revision of the SVHC Candidate List =

Lead oxides and Complex Oxides containing Lead, which are well known as constituents of glass, were added in the 8th Revision of the SVHC Candidate List of the EU REACH Regulation ((EC) No 1907/2006) (published on 19 December, 2012).
We present below the view of the Electronic Components Industry concerning the notification and information transmission duties based on the REACH Regulation for those constituents when included in glass.

1. View of the Electronic Components Industry concerning SVHCs

The Electronic Components Industry understands and cooperates with the EU standpoint aiming at the management and transmission of substance risk information. It shall be noted that, in the REACH Regulation, substances called SVHC are specified as candidate substances for "authorization" based on Article 59 (1), and are not regarded as banned substances.

The REACH Regulation establishes requirements on notification of SVHCs to ECHA (European Chemicals Agency) in accordance with Article 7 (2) et seqq. and information transmission of SVHCs to downstream users and consumers in accordance with Article 33, for articles imported or manufactured within the area of the EU Member States. However, in the case of glass with a complex structure and composition including multiple constituents, a particular SVHC used as constituent can become a part of the glass matrix. In this case to determine whether it is still correspondent to an SVHC or becoming part of a new compound due to chemical and physical reactions, it is imperative to establish standardized judgment criteria.

2. View Concerning Glass in Electronic Components

In the REACH Regulation, according to EU Official Journal "Commission Regulation (EC) No. 987/2008", glass is one substance and not a mixture of several substances.
On the other hand, in order to communicate information on glass, when considering from its chemical structure that glass is a solid solution of several metallic oxides in an amorphous state for which a crystal system cannot be specified, it has become common to communicate information on composition of glass (e.g. within the International Material Data System of the automotive industry) in a more easy way apart from its real chemical structure as a list of constituent metallic oxides. This information does not imply that the listed oxides themselves exist as constituents of the glass.

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*) SVHC Substance of Very high Concern
see also : http://echa.europa.eu/addressing-chemicals-of-concern/authorisation/substances-of-very-high-concern-identification

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Nevertheless, there are cases when an SVHC may exist within a glass without being solved into a solid solution. In such cases, it shall be interpreted as a mixture of glass and that particular SVHC.

3. View Concerning Lead Oxides and Complex Oxides Containing Lead Added in the 8th Revision of the SVHC Candidate List

Based on the judgment criteria shown by the view concerning glass in general from the previous item, we present our view concerning the handling of notification and information transmission based on the REACH Regulation for lead oxides and complex oxides containing lead.

3.1. Handling of Lead Oxide (PbO, Pb_3O_4)) Noted as Constituent of Glass

Chemical characteristics including risk to environment and human beings of lead oxides (PbO, Pb_3O_4) as substances as such are not comparable in properties when finally integrated into the glass matrix. This glass matrix is not a Substance of Very High Concern (SVHC). Manufacturers/importers are not obliged to communicate information on the substance mentioned above according to Article 33 (1) and in accordance to Art. 7 (2) et seqq. of the REACH Regulation.

Japan Electronics Information and Technology Industries Association
Technical Committee
Subcommittee on Electronic Components
Subcommittee on Electronic Components Environmental Technology
(24JEITA-電部企第 247 号)

ZVEI – Zentralverband Elektrotechnik- und Elektronikindustrie e.V.
(German electrical and electronic manufacturers' association)
Electronic Components and System

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