



綠色採購指南  
**Green Procurement Guidebook**

**(Version 15.0)**

虹光精密工業股份有限公司

**Avision Inc.**



修訂履歷 / Revision History

文件版本	改版日期	修改項目追蹤
Version 15.0	2021/1/28	<ol style="list-style-type: none"><li>1. 增加2項物質至環境管理物質清單C(SVHC第24次對應)</li><li>2. 延長部分RoHS排外項目豁免日期</li><li>1. Add 2 chemical substances to Substances List C(24th SVHC List)</li><li>2. Prolong specific RoHS exemption expiration date</li></ol>
Version 14.0	2020/10/12	<ol style="list-style-type: none"><li>1. 物質清單A增加PBBs/PBDEs限制濃度</li><li>2. 增加4項物質至環境管理物質清單C(SVHC第23次對應)</li><li>3. 物質清單D增加鹵化材料並將聚氯乙炔PVC、溴系阻燃劑BFRs、氯系阻燃劑CFRs併入。</li><li>4. 清單D刪除備註1</li><li>5. 增加物質清單D中的MCCPs限制濃度。</li><li>3. Add PBBs/PBDEs limit requirement into Substances List A</li><li>4. Add 4 chemical substances to Substances List C(23rd SVHC List)</li><li>5. Add Halogenated Materials to Substances List D and combine PVC,BFRs,CFRs.</li><li>6. Delete note 1 from Substances List D</li><li>7. Add remark of MCCPs in Substances List D</li></ol>

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## 1. 目的 Purpose

本技術標準是為了管理虹光精密股份有限公司(以下簡稱虹光)產品所使用的零部件和元件等中含有的環境管理物質之 (1)禁止使用物質、(2)計畫廢除物質、(3)適用除外項目之物質，以防止其混入虹光電子產品中，同時符合遵守法令、保護地球環境以及減輕對生態系統的影響等目的。

With regard to the “Environment-related Substances to be Controlled (‘Controlled Substances’)” contained in the parts and devices employed in Avision Inc. products, this Standard clarifies (1) banned substances, (2) substances to be phased out, and (3) exempted substances and their uses, in order to realize the following aims and objectives:

- 1) To prevent the above-mentioned substances from being used for Avision Inc. products;
- 2) To comply with related laws and regulations;
- 3) To reduce the influence of the above substances upon the ecosystem; and
- 4) To contribute to the preservation of the global environment.

## 2. 適用範圍 Scope

本技術標準適用於：虹光以及由虹光委託設計、製造的產品所包含的零部件、材料及其他物品。這些物件均必須符合本技術標準規定的標準/限定值。

Targets are the parts, materials, and other articles that are procured by the Avision Inc., or by third parties to which the Avision Inc. outsources the design and manufacture of its electronics products.

The targets need to satisfy the criteria/threshold levels specified in this Standard.

零部件和材料等的適用範圍：

Target parts and materials:

- 半成品(功能單元、模組、板元件(board assemblies)等的組裝零部件等)  
Semi-finished products (e.g. modules, functional units, board assemblies, and other assembly parts)
- 零(部)件(電氣零(部)件、機械零(部)件、半導體器件、印刷線路板、記憶體、包裝零部件和材料)、螺絲...  
Parts (electrical parts, mechanical parts, semiconductor devices, PCBs, recording media, packaging components and materials) and screws
- 產品採用的輔助材料(膠帶(adhesive tape)、焊接材料、粘結劑等)之組成材料等  
Materials constituting subsidiary parts and materials (e.g. adhesives, adhesive tapes, soldering materials, etc.)
- 印刷品(操作說明書、保證書、產品和零部件相關的補充資訊等)  
Printed materials (e.g. instruction manuals, warranty cards, additional product/parts information)



- 修理用零(部)件  
Repair parts (The application of some repair parts for products on the market shall be followed the instructions on the separately issued notice.)
- 電池  
Batteries

產品的適用範圍:

Scope applicable to products:

- 適用於在虹光銷售的所有商品（部件・材料・副資材・成品）的採購活動。  
Avision Inc. products that are designed and manufactured by the Avision Inc. for sale, loan, or distribution
- 虹光設計、生產銷售的成品中使用的部件、材料、副資材  
Avision Inc. products being sold and loaned or distributed with the Avision Inc. logos on them, whose design and/or manufacture are outsourced to third parties
- 第三者委托設計、生產的商品中使用的部件、材料、副資材  
Third parties' electronics products whose design and/or manufacture are outsourced to the Avision Inc. (except when the parts and materials are specified by the third parties)

### 3. 定義 Definition

- 1) **環境管理物質:** 包含在零部件和組件等的物質中，由虹光判斷對地球環境和人體存在著顯著影響的物質。

**“Environment-related Substances to be Controlled (“Controlled Substances”):**  
Among the substances contained in parts and devices, “Environment-related Substances to be Controlled (“Controlled Substances”)” are those which, according to Avision’s judgment, have significant environmental-impact on both humans and the global environment.

- 2) **含有:** 指無論是否有意圖地，通過添加、充填、混入、或者付著的形式，在產品的零部件、元件以及其所使用的材料中殘留的情況。

在加工過程中無意圖地向產品裏混入或者付著後殘留的情況也視為含有。但是，半導體設備等製造中的摻雜物（Dopant），即使有意圖的添加，實質上在半導體設備等裏殘存量極少的話，不作為「含有」。

**Contained:** “Contained” means that a substance remains in parts, devices, or their materials because of addition, filling, blend, or adhesion, whether intended or not. When a substance is unintentionally contained in, or added to a product in a processing process, this situation is also regarded as “Contained.” There are substances called Dopants (Doping Agents) that are intentionally added to manufacture semiconductor devices, etc. They are not treated as “Contained” if present in the devices in a very small amount.

- 3) **有意添加:** 為了達到特定的特性、外觀、和品質，通過有意圖的添加、填充、混入、和付著，使物質殘留在構成產品的零部件、設備以及其所使用的材料中的情況。

**Intentionally added:** “Intentionally added” means a situation where a substance is contained in the part, device, or its materials because of intentional addition, filling, blend, or adhesion, in order to provide a specific characteristic, appearance, or quality.

- 4) **含有濃度:** 指構成部件、材料等的均質材料中的含有濃度。

**Concentration:** Concentration refers to the amount of a chemical substance present in a given volume of a homogeneous material that constitutes a part or material.

- 5) **含有基準值:** 指構成部件、材料等的均質材料中的最大允許濃度。

**Concentration limit:** Concentration limit refers to the maximum concentration of a chemical substance allowed in a homogeneous material that constitutes a part or material.

- 6) **均質材料:** 指不能機械性分離出更多種不同性質材料的材料。例如，噴塗了的鐵部件，鐵和塗膜分別為均質材料。

**Homogeneous materials:** Homogeneous material means the material, which cannot be separated mechanically to more than one materials of different property. Take for example, if it is a painted steel product, each of the steel and the paint is considered to be a homogeneous material.

- 7) **SVHC:** EU REACH 法規規定的認可對象高度關注物質。

**SVHC:** SVHC is an acronym for **S**ubstances of **V**ery **H**igh **C**oncern. These are candidate chemical substances specified in the REACH Regulation.

- 8) **排外項目:** EU RoHS 指令中的排外項目 (豁免項目)。在本環境管理物質管理規定中也基本沿用這些豁免項目，按EU-RoHS 規定的排外項目 (豁免項目)實施。

**Exemptions:** The EU RoHS Directive exempts the applications for certain intended purpose. By following the EU RoHS Directive, exemption refers to the applications exempted under the EU RoHS Directive in this Environmental Substances Management.

- 9) **統一調查:** 各國法律法規的管理對象物質追加的時候，對既有商品 (部件、材料、副資材、成品) 對象，統一要求特定化學物質的含有量調查。

**Batch investigation:** Batch investigation refers to investigation that Avision requests its suppliers to complete in order to identify concentrations of certain chemical substances contained in existing articles (parts, materials, sub-materials, and products) when chemical substances are newly added to those currently regulated by domestic or overseas laws and regulations.

## 4. 對供應商的要求 Request to Suppliers

為了推進綠色採購過程，我們期望供應商能配合以下的要求。

In promoting our green procurement program, suppliers are requested for their cooperation as follows.



- 1) 遵守虹光綠色採購指南中的管理規定。  
Compliance with Avision Green Procurement Guidebook specification.
  - 2) 期許供應商理解虹光綠色採購指南中的管理規定，並建立和維持特定化學物質管理體制。  
Suppliers are expected to understand the Avision Green Procurement Guidebook specification and to establish and maintain a system that ensures proper management of certain chemical substances.
- 特定化學物質調查、迴避、管理、登錄  
Investigation, avoidance, control and registration of certain chemical substances

#### - 調查 Investigation

- 關於交付給虹光的所有商品（部件、材料、副資材、成品），請按照「虹光綠色採購指南」進行特定化學物質的調查、迴避、管理。  
Suppliers are requested to investigate, avoid, and control the use of certain chemical substances in all articles (parts, materials, sub-materials and products) supplied to the Avision Inc. in accordance with Avision Green Procurement Guidebook specification.
- 對於禁止使用的物質進行含有狀況調查，如果含有時請迅速迴避使用，避免混入超過含有基準值物質的管理。  
Investigate whether prohibited chemical substances are contained in any articles. If any such chemical substance is detected, immediately take actions to ensure that the content of such chemical substance does not exceed the concentration limit.
- 對於含有管理物質，請確認是否有意含有，如果含有時請調查其含有量並將上述調查的結果報告給敝司。  
Investigate whether controlled chemical substances are intentionally added to any articles. If such substances are contained in any articles, determine their content.

#### - 登錄 Registration

請將上述調查的結果報告於 15 個工作日內回覆給敝司，  
Notify Avision of the findings from the above investigation within 15 working days.

#### 新採用時的調查 New parts investigation :

請在敝司提出的「符合性聲明書」與「環境管理物質調查書」中填入調查結果及必要事項，蓋章後提交給敝司。

Please fill in and sign back the 「Declaration of Conformity Letter」 and 「Substances Survey Table」.

#### 統一調查 Batch investigation :

請在郵件發送的「環境管理物質調查書」中填入調查結果和必要事項，蓋章後一起提交回信給敝司。

Enter the findings as well as other required information in the Environment-related

## Substances Survey Table sent by mail

### 3) SVHC 重量登錄 Registration of SVHC mass data

如果部件的構成材料中 SVHC 含有量超過 1000ppm，請利用環境管理物質調查書回答部件中含有的 SVHC 重量(g)。

回答相應部件中含有的 SVHC 時，請將構成該部件的所有材料中含有的同一 SVHC 進行合計後回答總重量。

When materials used for a part contain any SVHC chemical substances exceeding 1,000 ppm, provide the mass (g) of the SVHC contained in the part via Environment-related Substances Survey Table. Enter the total mass of the SVHC contained in all of the materials used for the part.

### 4) 監察對應 Audits

為了確認供應商特定化學物質管理體制，敝司將定期地進行監察。

Regular audits may be conducted in order to verify and assess your management system for certain chemical substances.

### 5) 對敝司 X-Ray 檢測結果的對應 X-ray fluorescence analysis results

如果 Pb、Cd、Hg、Cr 等物質的檢測結果超出基準值時請迅速調查原因，並提出改善及後續預防措施，同時協助供應合格品。

如果總溴超出基準值時，請交易商協助確認 PBB/PBDE 的含有是否超出基準值。

Whenever concentration levels exceeding the limits specified by Avision for Pb, Cd, Hg, and Cr are detected, we will ask suppliers to immediately investigate the cause, provide improve and prevention method, also the compliant products. When the total concentration of bromines exceeds the limit specified by Avision, we will ask suppliers to verify that the concentration of PBB/PBDE is below the specified limit.

### 6) 推進環境保護活動 Environmental Initiatives

希望各交易商也能夠積極推進環境保護活動。透過建立環境管理體系，從以下方面持續減少伴隨事業活動的環境負荷，遵守法規及各國法律規範。

- 減少因事業生產所產生的大氣、水質、廢棄物、能源等負荷
- 實施產品的環境評估，提高納入部件、產品的能源、資源節約和再利用性，迴避及減少特定化學物質的含有、使用
- 在製造工序中禁用臭氧層破壞物質和法規規定的含氯有機溶劑

此外，懇請各交易商也能夠積極推進生物多樣性保護活動。

Suppliers are requested to promote environmental conservation activities with positive attitudes. It is requested particularly to establish an environmental management system in order to ensure legal compliance and to continuously reduce the environmental impact resulting from business activities from the following aspects.

- Reduction of impacts on the atmosphere, water, wastes, energy, etc. which arise from business activities.
- Implementation of the environmental assessment for product in order to improve the energy saving/resource saving/recyclability on the parts/products they supply and to avoid/reduce the inclusion/use of certain chemical substances contained in them
- Abolish chlorine-based organic solvents that deplete ozone and are restricted by law in a manufacturing process





In addition to the above, suppliers are also requested to actively pursue engagement in the area of biodiversity.

7) 衝突礦產

虹光精密工業股份有限公司不支援、不使用來自武裝衝突、非法採礦與低劣工作環境中採礦而來的金屬，供應商應協助調查其產品中含有金(Au)、鈹(Ta)、錫(Sn)、鎢(W)等金屬，並確認這些金屬的礦源為非衝突礦區。

Conflict Minerals

Avision Inc. expects our suppliers to comply with the Electronic Industry Code of Conduct and to only source materials from environmentally and socially responsible suppliers. Avision has taken actions to ensure that our suppliers comply with these expectations.

Please assist to investigation of their products containing gold (Au), tantalum (Ta), tin (Sn), tungsten (W) and other metals, and confirmed that the mineral source of these metals were not obtained from conflict zones.

5. 環境管理物質的管理標準

1) 環境禁用物質清單 A / Banned Environment-related Substances List A

此分類中的化學物質要求規定係參考以下法規

1. 「RoHS」的化學物質／化學物質群，係歐盟的RoHS 指令（DIRECTIVE 2011/65/EU及修訂指令(EU)2015/863）中受法規限制的化學物質／化學物質群。
2. 包裝材料指令 (94/62/EC)
3. 電池指令 (2006/66/EC)

Chemical substances/substance group listed below are restricted by laws and regulations worldwide.

1. 「RoHS」 Chemical substances/substance group, is based on European Union RoHS Directive ( DIRECTIVE 2011/65/EU and amending DIRECTIVE (EU) 2015/863 ) .
2. Packaging Directive (94/62/EC)
3. Battery Directive (2006/66/EC)

以下，列出有關的化學物質／化學物質群以及法規規定基準值。

禁用物質名稱 / Banned Substances		限制濃度
重金屬 Heavy Metal	鉛與其鉛化合物(Pb) Lead / Lead Compounds (Pb)	<1000ppm
	鎘與其鎘化合物(Cd) Cadmium / Cadmium Compounds (Cd)	<100ppm
	汞與其汞化合物(Hg) Mercury / Mercury Compounds (Hg)	<1000ppm
	六價鉻與其六價鉻化合物(Cr+6) Hexavalent Chromium / Hexavalent Chromium Compounds (Cr+6)	金屬件:不得檢出 非金屬件: <1000ppm
電池 Battery	汞與其汞化合物(Hg) Mercury / Mercury Compounds (Hg)	<1ppm

禁用物質名稱 / Banned Substances		限制濃度
	鎘與其鎘化合物(Cd) Cadmium / Cadmium Compounds (Cd)	<10ppm
	鉛與其鉛化合物(Pb) Lead / Lead Compounds (Pb)	<40ppm
包裝材料 Packaging	Pb+Cd+Hg+Cr <sup>+6</sup>	<100ppm
	DEHP+BBP+DBP+DIBP	<1000ppm
有機溴化合物 Brominate Organic compounds	聚溴聯苯類/聚溴聯苯醚類(PBBs/PBDEs) Polybrominated Biphenyls (PBBs) Polybrominated Diphenylethers (PBDEs)	<1000ppm 包裝、印刷電路板:禁止含有 In packaging, in printed circuit board (PCB): must not contained
	鄰苯二甲酸二(2-乙基己基)酯(DEHP) Bis(2-ethylhexyl) phthalate (DEHP)	<1000ppm
磷苯二甲酸酯類 Phthalates	鄰苯二甲酸丁酯苯甲酯 (BBP) Butyl benzyl phthalate (BBP)	<1000ppm
	鄰苯二甲酸二丁酯 (DBP) Dibutyl phthalate (DBP)	<1000ppm
	鄰苯二甲酸二異丁酯 (DIBP) Diisobutyl phthalate (DIBP)	<1000ppm

註 1: 有關化學物質/化學物質群的詳細信息, 請參照「化學物質/化學物質群的詳細清單」。

Note 1: For more detailed information, please refer to "RoHS" in "Appendix - Detail List of Environment-related Substances."

註 2: 在 EU RoHS 指令 附件 III 設定了「豁免項目」。關於豁免項目的具體內容, 請參考「RoHS 指令除外條款」。

Note 2: The "exemptions" are specified in Annex III of the EU RoHS Directive. Refer to "6. EU RoHS Directive Exemptions" for the details of the exempted items.

## 2) 環境禁用物質清單 B / Banned Environment-related Substances List B

此分類中的化學物質要求規定係「RoHS」以外的化學物質/化學物質群, 係指各國的法律法規等 (歐盟的RoHS 指令除外) 所規定的規限使用的化學物質/化學物質群。

Chemical substances/substance group classified as "Prohibited substances excluding RoHS" are to comply with laws and regulations of each country worldwide. (Excluding EU RoHS Directive)

Below is the list of chemical substances/substance group and content standard values.

No.	物質名稱/Substances	CAS No.	限用濃度/ Content Standard Value
001	鉛與其鉛化合物 Lead and it's compounds	-	披覆熱固性或熱塑性樹脂的纜線電線含有量不得超過 300ppm (註 1) Less than or equal to 0.03% (300 ppm) for cable cords coated with thermosetting or thermoplastic resin (Note 1)
002	ODS; 臭氧層破壞物質 (蒙特羅議定書的受控物質) ODS; Ozone Depleting Substances (Only Class I and II substances regulated by the Montreal Protocol are subject to the regulation)	-	禁止含有 Must not contained

No.	物質名稱/Substances	CAS No.	限用濃度/ Content Standard Value
003	石棉類 Asbestos	-	禁止含有 Must not contained
004	生成部分芳香族胺的偶氮染料和顏料(註2) Azocolourants and Azodyes which form certain aromatic amines (Note 2)	-	非特意添加 Not intentionally added
005	PCB；多氯聯苯類 Polychlorinated Biphenyls(PCBs)	-	禁止含有 Must not contained
006	PCT；多氯三聯苯類 Polychlorinated Terphenyls(PCTs)	61788-33-8	禁止含有 Must not contained
007	PCN；聚氯萘 PCN；Polychlorinated Naphthalenes	-	禁止含有 Must not contained
008	放射性物質 Radioactive Substances	-	禁止含有 Must not contained
009	短鏈氯化石蠟 Short-chain chlorinated paraffins(SCCPs)	85535-84-8	禁止含有 Must not contained
010	TBT；三丁基錫類/ TPT；三苯基錫類 Tri-substituted organostannic compounds such as Tributyltin (TBT) compounds and Triphenyltin (TPT) compounds	-	禁止含有 Must not contained
011	TBTO；三丁基氧化錫 Tributyltin Oxide (TBTO)	56-35-9	禁止含有 Must not contained
012	PFOS；全氟辛烷磺酸及鹽類 PFOS (Perfluorooctane sulfonates) / i.e. C8F17SO2X [X=OH, Metal salt (O-M+), halide, amide and other derivatives including polymers]	-	禁止含有 Must not contained
013	DMF；二甲基甲酸胺 Dimethylfumarate (DMF)	624-49-7	禁止含有 Must not contained
014	2-(2'-羥基-3',5'-二叔丁基苯基)-苯並三唑 Phenol,2-(2H-benzotriazol-2-yl)-4,6- bis(1,1-dimethylethyl)	3846-71-7	禁止含有 Must not contained
015	DBT；二丁基錫化合物 Dibutyltin (DBT) compounds	-	在混合物或均質材料中含量不得超過 0.1 重量% (1000ppm) Less than or equal to 0.1% by weight with tin conversion per homogeneous material or a compound
016	DOT；二辛基錫化合物 Diocetyl tin (DOT) compounds	-	在均質材料中含量不得超過 0.1 重量% (1000ppm) Less than or equal to 0.1% by weight (1000ppm) with tin conversion per homogeneous material for target products

No.	物質名稱/Substances	CAS No.	限用濃度/ Content Standard Value
017	甲醛 Formaldehyde	50-00-0	非有意添加 Not intentionally added
018	HCB；六氯苯 Hexachlorobenzene (HCB)	118-74-1	禁止含有 Must not contained
019	PAHs: 多環芳香族化合物 Poly-cyclic Aromatic Hydrocarbon	-	請參閱註 3 Please refer to Note 3
020	PFOA: 全氟辛酸 Perfluorooctanic acid	335-67-1 3825-26-1 335-95-5 2395-00-8 335-93-3 335-66-0 376-27-2 3108-24-5	零部件 parts<25ppb
021	鄰苯二甲酸酯類 Phthalates	-	<1000ppm
022	六溴環十二烷 Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (HBCDD)	註 4	禁止含有 Must not contained
023	氟族溫室氣體(HFC, PFC, SF6) Fluorinated greenhouse gases (HFC, PFC, SF6)	-	非有意添加 Prohibited from intentional use
024	二苯胺 Benzenamine, N-phenyl-, Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST)	68921-45-9	非有意添加 * 橡膠製品除外 (不含橡膠輪胎) Not intentionally added * Rubber products are exempt (but not rubber tires)
025	聯苯胺基物質 Benzidine-Based Substances	-	禁止含有 Must not contained
026	2,4,6-三叔丁基苯酚 2,4,6-tri-tert-butylphenol	732-26-3	非有意添加 Not intentionally added
027	N,N'-聯甲苯-對苯二胺, N-甲苯基 -N'-二甲苯基對苯二胺, N,N'-二甲 基-對苯二胺 N,N'-ditolyl-p-phenylenediamine, N-tolyl-N'-xylyl-p-phenylenediamine and N,N'-dixylyl-p-phenylenediamine	-	非有意添加 Not intentionally added
028	三氯丙啶基氧化磷 Tris (1-aziridinyl) phosphine oxide (TEPA)	545-55-1	非有意添加 Not intentionally added
029	磷酸三(2,3-二溴丙基)酯 Tris-(2,3-Dibromopropyl) phosphate	126-72-7	非有意添加 Not intentionally added
030	持續性有機污染物 Persistent Organic Pollutants(POPs)	-	非有意添加 Not intentionally added
031	紅磷 Red phosphorus	7723-14-0	禁止含有 Must not contained

No.	物質名稱/Substances	CAS No.	限用濃度/ Content Standard Value
032	1,1,2-三氯乙烷 1,1,2-Trichloroethane	79-00-5	非特意添加 Not intentionally added
033	苯 Benzene	71-43-2	非特意添加，且在均質材料中含量不得超過 0.1 重量% (1000ppm)
034	二氯甲烷 Methylenechloride	75-09-2	禁止含有 Must not contained
035	三氯甲烷 Trichloromethane	67-66-3	禁止含有 Must not contained
036	溴丙烷 Bromopropane	106-94-5	禁止含有 Must not contained

註 1: 遵守《美國加州 1986 年安全飲用水及有毒物質法案 – Proposition 65 號》的規定，將披覆熱固性或熱塑性樹脂的纜線電線含有基準值定為 300ppm。

並且，如果虹光確認了作為《美國加州 Proposition 65 號提案》對象外（使用在消費者手不接觸的部位）的情況，含有基準值應為 0.1%（1000ppm）以下。

Note 1: Content standard value of lead/lead compounds

In order to comply with the regulation, Proposition 65, the content standard value for cable cords coated with thermosetting or thermoplastic resin shall be 300 ppm.

In case Avison Inc. confirms items which are not applied to Proposition 65 (not touchable to consumers), the content standard value shall be less than or equal to 0.1% (1000ppm).

註 2: 有害芳族胺一覽

Note 2: Restriction of Certain Azocolourants and Azodyes

特定胺名稱	Chemical substance name	CAS* Numbers
4-氨基聯苯	Biphenyl-4-ylamine	92-67-1
聯苯胺	Benzidine	92-87-5
4-氯鄰甲苯胺; 4-氯-2-甲基苯胺	4-Chloro-o-toluidine	95-69-2
2-萘胺	2-Naphthylamine	91-59-8
鄰氨基偶氮甲苯	o-Aminoazotoluene	97-56-3
2-氨基-4-硝基甲苯; 5-硝基鄰甲苯胺	5-Nitro-o-toluidine	99-55-8
4-氯苯胺	4-Chloroaniline	106-47-8
2,4-二氨基苯甲醚	4-Methoxy-m-phenylenediamine	615-05-4
4,4'-亞甲基二苯胺; 4,4'-二氨基二苯甲烷	4,4'-Methylenedianiline	101-77-9
3,3'-二氯聯苯胺	3,3'-dichlorobenzidine	91-94-1
3,3'-二甲氧基聯苯胺	3,3'-Dimethoxybenzidine	119-90-4
3,3'-二甲基聯苯胺	3,3'-Dimethylbenzidine	119-93-7
3,3'-二甲基-4,4'-二氨基二苯甲烷; 4,4'-二氨基-3,3'-二甲	4,4'-Methylenedi-o-toluidine	838-88-0
基二苯基甲烷	6-Methoxy-m-toluidine	120-71-8
5-甲基鄰茴香甲胺; 2-甲氧基-5-甲基苯胺	4,4'-Methylene-bis-(2-chloroaniline)	101-14-4
4,4'-二氨基-3,3'-二氯二苯甲烷	4,4'-Oxydianiline	101-80-4
4,4'-二氨基聯苯胺	4,4'-Thiodianiline	139-65-1
4,4'-二氨基二苯硫醚	o-Toluidine	95-53-4
鄰甲苯胺	4-Methyl-m-phenylenediamine	95-80-7

特定胺名稱	Chemical substance name	CAS* Numbers
2,4-二氨基甲苯; 4-甲基-間-苯二胺	2,4,5-Trimethylaniline	137-17-7
2,4,5-三甲基苯胺	o-Anisidine	90-04-0
鄰甲氧基苯胺	4-Amino azobenzene	60-09-3

「【偶氮染料清單】中包含的染料」所指的化學物質：  
The substances listed below are classified in the “aromatic amine”.

化學物質名 (英文)	CAS No.
A mixture of: disodium(6-(4-anisidino)-3-sulfonat o-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)(1-(5-chloro-2-oxido phenylazo)-2-naphtholato) chromate(1-); Trisodium bis(6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)chromate(1-)	Not allocated Component 1: CAS-No:118685-33-9 C <sub>39</sub> H <sub>23</sub> ClCr-N <sub>7</sub> O <sub>12</sub> S <sub>2</sub> Na  Component 2: C <sub>46</sub> H <sub>30</sub> CrN <sub>10</sub> -O <sub>20</sub> S <sub>2</sub> .3Na

註 3 /Note 3: PAHs: 多環芳香族化合物 Poly-cyclic Aromatic Hydrocarbon

	Category 1	Category 2	Category 3
	Materials with food contact or materials designated to be put in the mouth and toys designed for kids <36 months 與食物接觸之材料或三歲以下孩童會放入口中之物品與玩具	Materials with skin contact for more than 30 seconds and toys which do not fall in Category 1 塑料，經常性與皮膚接觸的部件，接觸時間會超過30秒的部件及category 1未規範之玩具	Materials with skin contact for maximal 30 seconds or with no skin contact 塑料，偶爾性接觸的部件，即與皮膚接觸時間少於30秒的部件，或與皮膚沒有接觸的部件
要求 A Requirement A	not detectable (<0.2 mg/kg)	1mg/kg	20 mg/kg
要求 B Requirement B	not detectable (<0.2 mg/kg)	10 mg/kg	200 mg/kg

Sum of the 18 PAH(EPA)				
要求 A Requirement A	要求 B Requirement B	Compound	Name	CAS No.
	○	Naphthalene	Nap	91-20-3
	○	Acenaphthylene	AcPy	208-96-8
	○	Acenaphthene	Acp	83-32-9
	○	Fluorene	Flu	86-73-7
	○	Phenanthrene	PA	85-01-8
	○	Anthracene	Ant	120-12-7
	○	Fluoranthene	FL	206-44-0
	○	Indeno [c,d] pyrene	IND	193-39-5
	○	Pyrene	Pyr	129-00-0
○	○	Benzo [j] fluoranthene	BjFA	205-82-3
○	○	Chrysene	CHR	218-01-9
○	○	Benzo [a] anthracene	BaA	56-55-3
○	○	Benzo [b] fluoranthene	BbF	205-99-2
○	○	Benzo [k] fluoranthene	BkF	207-08-9
○	○	Benzo [a] pyrene	BaP	50-32-8

○	○	Dibenzo 【a,h】 anthracene	DBA	53-70-3
○	○	Benzo 【g,h,i】 perylene	BghiP	191-24-2
○	○	2Benzo 【e】 pyrene	BeP	192-97-2

註 4：六溴環十二烷（HBCDD）的 CAS No.如下所示。 25637-99-4, 3194-55-6, 4736-49-6, 65701-47-5, 134237-50-6, 134237-51-7, 134237-52-8, 138257-17-7, 138257-18-8, 138257-19-9, 169102-57-2, 678970-15-5, 678970-16-6, 678970-17-7

Note 4: CAS No. of Hexabromocyclododecane (HBCDD) is as shown below. 25637-99-4, 3194-55-6, 4736-49-6, 65701-47-5, 134237-50-6, 134237-51-7, 134237-52-8, 138257-17-7, 138257-18-8, 138257-19-9, 169102-57-2, 678970-15-5, 678970-16-6, 678970-17-7

### 3) 環境管理物質清單 C / Environment-related Substances List C

雖然以下化學物質/化學物質群目前仍在很多領域使用，虹光將其作為將來有限制使用傾向的化學物質/化學物質群，定義在環境管理物質清單 C，對其在納入商品（部件、材料、副資材、成品）裡的含有量進行管理。

Although the following chemical substances/substance groups are currently used in many fields, Avision consider there is a possibility that these chemical substances be regulated in future. Therefore, they are specified as “*Environment-related Substances List C*”, to control inclusion of all articles (parts, materials, sub-materials and products), which supplied to the Avision Inc.

本清單由歐盟 REACH 法規 (REGULATION (EC) No 1907/2006 的『Substances of Very High Concern』(SVHC) 所規定的化學物質/化學物質群所組成，以下，列出有關 SVHC 的化學物質/化學物質群及含有基準值，在您提供的商品（部件、材料、副資材、成品）中，如果您供應的產品含有表列化學物質/化學物質群超過 0.1% (1000ppm)，請掌握並回報其含有濃度。

This list are according to REACH regulation of the EU (REGULATION (EC) No 1907/2006) Candidate List of 『Substances of Very High Concern』 (SVHC).

Below is the list of chemical substances/substance group of “SVHC” and their content standard values (answer standard).

In addition, in case content density amount of these substances/substance group exceed 0.1% by weight (1000ppm), SVHC mass is required to register.

除本清單所列物質外，所有供應給虹光的產品（部件、材料、副資材、成品）亦應同時符合遵守 REACH 法規的相關規定，例如附錄十四(授權)、附錄十七(限制)

Moreover, except SVHC list, all articles (parts, materials, sub-materials and products)



should also comply with REACH regulations, exc. Annex XIV (Authorization), Annex XVII (Restriction)

版本	No.	Substances Name	中文名稱	CAS No.
R1	1	Anthracene	蒽	120-12-7
R1	2	4,4'-Diaminodiphenylmethane (MDA)	4,4' 二氨基二苯基甲烷	101-77-9
R1	3	Dibutyl phthalate (DBP)	鄰苯二甲酸二丁酯	84-74-2
R1	4	Cobalt dichloride	氯化鈷	7646-79-9
R1	5	Diarsenic pentaoxide	五氧化二砷	1303-28-2
R1	6	Diarsenic trioxide	三氧化二砷	1327-53-3
R1	7	Sodium dichromate	重鉻酸鈉·二倍結晶水	7789-12-0 and 10588-01-9
R1	8	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	二甲苯麝香	81-15-2
R1	9	Bis (2-ethylhexyl)phthalate (DEHP)	鄰苯二甲酸二(乙基己基)酯	117-81-7
R1	10	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified	六溴環十二烷	134237-50-6 134237-51-7 134237-52-8
R1	11	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	短鏈氯化石蠟	85535-84-8
R1	12	Bis(tributyltin)oxide (TBTO)	氧化雙三丁基錫	56-35-9
R1	13	Lead hydrogen arsenate	砷酸氫鉛	7784-40-9
R1	14	Triethyl arsenate	三乙基砷酸酯	15606-95-8
R1	15	Benzyl butyl phthalate (BBP)	鄰苯二甲酸丁酯苯甲酯	85-68-7
R2	16	Anthracene oil	蒽油	90640-80-5
R2	17	Anthracene oil, anthracene paste, distn. Lights	蒽油、蒽糊、輕油	91995-17-4
R2	18	Anthracene oil, anthracene paste, anthracene fraction	蒽油、蒽糊、蒽餾分	91995-15-2
R2	19	Anthracene oil, anthracene-low	蒽油、含蒽少量	90640-82-7
R2	20	Anthracene oil, anthracene paste	蒽油、蒽糊	90640-81-6
R2	21	Coal tar pitch, high temperature	煤焦油瀝青(高溫)	65996-93-2
R2	22	Acrylamide	丙烯醯胺	1979/6/1
R2	23	Aluminosilicate, Refractory Ceramic Fibres	矽酸鋁, 耐火陶瓷纖維	-
R2	24	Zirconia Aluminosilicate, Refractory Ceramic Fibres	鋁矽酸鋁, 耐火陶瓷纖維	-
R2	25	2,4-Dinitrotoluene	2,4-二硝基甲苯	121-14-2
R2	26	Diisobutyl phthalate (DIBP)	鄰苯二甲酸二異丁酯	84-69-5
R2	27	Lead chromate	鉻酸鉛	7758-97-6
R2	28	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
R2	29	Lead sulfochromate yellow (C.I. Pigment Yellow	黃色硫化鉻酸鉛	1344-37-2



版本	No.	Substances Name	中文名稱	CAS No.
		34)	(C.I.黃色 34)	
R2	30	Tris(2-chloroethyl)phosphate (TCEP)	三 2-(氯乙基)磷酸酯	115-96-8
R3	31	Trichloroethylene	三氯乙烯	79-01-6
R3	32	Boric acid	硼酸	10043-35-3 11113-50-1
R3	33	Disodium tetraborate, anhydrous	四硼酸鈉, 無水	1303-96-4 1330-43-4 12179-04-3
R3	34	Tetraboron disodium heptaoxide, hydrate	四硼酸鈉, 水合物	12267-73-1
R3	35	Sodium chromate	鉻酸鈉	7775-11-3
R3	36	Potassium chromate	鉻酸鉀	7789-00-6
R3	37	Ammonium dichromate	重鉻酸銨	7789-09-5
R3	38	Potassium dichromate	重鉻酸鉀	7778-50-9
R4	39	Cobalt(II) sulphate	硫酸鈷 (二價)	10124-43-3
R4	40	Cobalt(II) dinitrate	硝酸鈷 (二價)	10141-05-6
R4	41	Cobalt(II) carbonate	碳酸鈷 (二價)	513-79-1
R4	42	Cobalt(II) diacetate	醋酸鈷 (二價)	71-48-7
R4	43	2-Methoxyethanol	乙二醇單甲醚	109-86-4
R4	44	2-Ethoxyethanol	乙二醇單乙醚	110-80-5
R4	45	Chromium trioxide	三氧化鉻	1333-82-0
R4	46	Chromic acid / Dichromic acid	鉻酸 / 重鉻酸	7738-94-5 13530-68-2
R5	47	2-ethoxyethyl acetate	乙二醇乙醚乙酸酯	111-15-9
R5	48	strontium chromate	鉻酸銦	7789/6/2
R5	49	1,2-Benzenedicarboxylic acid, di-C7-11-branched and li near alkyl esters	鄰苯二甲酸二(C7-11 支鏈與直鏈)烷基酯 (DHNUP)	68515-42-4
R5	50	Hydrazine	聯氨	7803-57-8 302-01-2
R5	51	1-methyl-2-pyrrolidone	N-甲基吡咯烷酮	872-50-4
R5	52	1,2,3-trichloropropane	1,2,3-三氯丙烷	96-18-4
R5	53	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	鄰苯二甲酸二(C6-8 支鏈與直鏈)烷基酯, 富 C7 (DIHP)	71888-89-6
R6	54	Dichromium tris(chromate)	鉻酸鉻	24613-89-6
R6	55	Potassium hydroxyoctaoxodizincatedi-chromate	氫氧化鉻酸鋅鉀	11103-86-9
R6	56	Pentazinc chromate octahydroxide	C.I.顏料黃 36	49663-84-5
R6	57	Aluminosilicate Refractory Ceramic Fibres (RCF)	矽酸鋁, 耐火陶瓷纖維**	-
R6	58	Zirconia Aluminosilicate Refractory Ceramic Fibres (Zr-RCF)	氧化鋯矽酸, 耐火陶瓷纖維**	-
R6	59	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	甲醛和苯胺聚合物	25214-70-4
R6	60	Bis(2-methoxyethyl) phthalate	鄰苯二甲酸二甲氧乙酯	117-82-8
R6	61	2-Methoxyaniline; o-Anisidine	鄰甲氧基苯胺	90-04-0
R6	62	4-(1,1,3,3-tetramethylbutyl)phenol,	對特辛基苯酚	140-66-9

版本	No.	Substances Name	中文名稱	CAS No.
		(4-tert-Octylphenol)		
R6	63	1,2-Dichloroethane	1,2-二氯乙烷	107-06-2
R6	64	Bis(2-methoxyethyl) ether	二甘醇二甲醚	111-96-6
R6	65	Arsenic acid	砷酸	7778-39-4
R6	66	Calcium arsenate	砷酸鈣	7778-44-1
R6	67	Trilead diarsenate	砷酸鉛	3687-31-8
R6	68	N,N-dimethylacetamide (DMAC)	N,N-二甲基乙醯胺	127-19-5
R6	69	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	4,4'-二氯基-3,3'-二氯二苯 甲烷,	101-14-4
R6	70	Phenolphthalein	酚酞	1977/9/8
R6	71	Lead azide Lead diazide	疊氮化鉛	13424-46-9
R6	72	Lead styphnate	收斂酸鉛	15245-44-0
R6	73	Lead dipicrate	苦味酸鉛	6477-64-1
R7	74	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	三乙二醇二甲醚	112-49-2
R7	75	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	乙二醇二甲醚	110-71-4
R7	76	Diboron trioxide	三氧化二硼	1303-86-2
R7	77	Formamide	甲醯胺	75-12-7
R7	78	Lead(II) bis(methanesulfonate)	甲基磺酸鉛	17570-76-2
R7	79	1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3 H,5H)-trione (TGIC)	異氰尿酸三縮水甘油酯	2451-62-9
R7	80	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5 H)-trione (β-TGIC)	β 型異氰尿酸三縮水甘油 酯	59653-74-6
R7	81	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	4,4'-二(N,N-二甲胺基) 二 苯甲酮	90-94-8
R7	82	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	4,4'-亞甲基雙(N,N-二甲 胺)	101-61-1
R7	83	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	([4-[[4-苯胺基-1-萘 基][4-(二甲基胺基)苯基]亞 甲基]環己-2,5-二烯-1-亞 基]二甲基氯化銨 (C.I. 鹼性藍 26)	2580-56-5
R7	84	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dim ethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	[4-[4,4'-雙(二甲基胺基) 二 苯亞甲基] 環己-2,5-二烯 -1-亞基] 二甲基氯化銨 (C.I. 鹼性紫 3)	548-62-9
R7	85	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	(4,4'-雙(二甲基胺 基)-4''-(甲基胺基) 三苯 甲基醇)	561-41-1
R7	86	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	α,α-雙[4-(二甲基胺基) 苯 基]-4-(苯基胺基)-1-萘甲 醇	6786-83-0

版本	No.	Substances Name	中文名稱	CAS No.
			(C.I. 溶劑藍 4)	
R8	87	Pyrochlore, antimony lead yellow	顏料黃 41	8012-00-8
R8	88	6-methoxy-m-toluidine (p-cresidine)	2-甲氧基-5-甲基苯胺	120-71-8
R8	89	Henicosafuoroundecanoic acid	全氟十一烷酸	2058-94-8
R8	90	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	甲基六氫鄰苯二甲酸酐; 甲基六氫苯酐 4-甲基六氫苯酐	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9
R8	91	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]	六氫鄰苯二甲酸酐	85-42-7, 13149-00-3, 14166-21-3
R8	92	Dibutyltin dichloride (DBT)	二丁基二氯化錫 (DBT)	683-18-1
R8	93	Lead bis(tetrafluoroborate)	氟硼酸鉛	13814-96-5
R8	94	Lead dinitrate	硝酸鉛	10099-74-8
R8	95	Silicic acid, lead salt	矽酸鉛	11120-22-2
R8	96	4-Aminoazobenzene	4-氨基偶氮苯	60-09-3
R8	97	Lead titanium zirconium oxide	鈦酸鉛鋇	12626-81-2
R8	98	Lead monoxide (lead oxide)	一氧化鉛	1317-36-8
R8	99	o-Toluidine	鄰甲基苯胺	95-53-4
R8	100	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
R8	101	Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	摻雜鉛的矽酸鋇	68784-75-8
R8	102	Trilead bis(carbonate)dihydroxide	鹼式碳酸鉛	1319-46-6
R8	103	Furan	呋喃	110-00-9
R8	104	N,N-dimethylformamide	N,N-二甲基甲醯胺	68-12-2
R8	105	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	辛基酚聚醚-9, 包括界定明確的物質以及 UVCB 物質、聚合物及同系物	-
R8	106	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]	支鏈及直鏈壬基酚-包括含有 9 個碳烷基鏈之所有獨立同分異構體及所有含有含直鏈或支鏈之 9 個碳烷基鏈 UVCB 物質	-

版本	No.	Substances Name	中文名稱	CAS No.
R8	107	4,4'-methylenedi-o-toluidine	4,4'-二氨基-3,3'-二甲基二苯甲烷	838-88-0
R8	108	Diethyl sulphate	硫酸二乙酯	64-67-5
R8	109	Dimethyl sulphate	硫酸二甲酯	77-78-1
R8	110	Lead oxide sulfate	鹼式硫酸鉛	12036-76-9
R8	111	Lead titanium trioxide	鈦酸鉛	12060-00-3
R8	112	Acetic acid, lead salt, basic	鹼式乙酸鉛	51404-69-4
R8	113	[Phthalato(2-)]dioxotrilead	二鹽基鄰苯二甲酸鉛	69011-06-9
R8	114	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	十溴聯苯醚	1163-19-5
R8	115	N-methylacetamide	N-甲基乙酰胺	79-16-3
R8	116	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	地樂酚	88-85-7
R8	117	1,2-Diethoxyethane	乙二醇二乙醚	629-14-1
R8	118	Tetralead trioxide sulphate	三鹼式硫酸鉛	12202-17-4
R8	119	N-pentyl-isopentylphthalate	鄰苯二甲酸正戊基異戊基酯	776297-69-9
R8	120	Dioxobis(stearato)trilead	雙(十八酸基)二氧代三鉛	12578-12-0
R8	121	Tetraethyllead	四乙基鉛	78-00-2
R8	122	Pentalead tetraoxide sulphate	氧化鉛與硫酸鉛的複合物	12065-90-6
R8	123	Pentacosafuorotridecanoic acid	全氟十三酸	72629-94-8
R8	124	Tricosafuorododecanoic acid	全氟十二烷酸	307-55-1
R8	125	Heptacosafuorotetradecanoic acid	全氟代十四酸	376-06-7
R8	126	1-bromopropane (n-propyl bromide)	1-溴丙烷	106-94-5
R8	127	Methoxyacetic acid	甲氧基乙酸	625-45-6
R8	128	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	2,4-二氨基甲苯	95-80-7
R8	129	Methyloxirane (Propylene oxide)	1,2-環氧丙烷	75-56-9
R8	130	Trilead dioxide phosphonate	磷酸氧化鉛	12141-20-7
R8	131	o-aminoazotoluene	鄰氨基偶氮甲苯	97-56-3
R8	132	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	1,2-苯二羧二戊酯(支鏈和直鏈)	84777-06-0
R8	133	4,4'-oxydianiline and its salts	4,4'-二氨基二苯醚	101-80-4
R8	134	Orange lead (lead tetroxide)	四氧化三鉛	1314-41-6
R8	135	Biphenyl-4-ylamine	4-氨基聯苯	92-67-1
R8	136	Diisopentylphthalate	鄰苯二甲酸二異戊酯	605-50-5
R8	137	Fatty acids, C16-18, lead salts	C16-18-脂肪酸鉛鹽	91031-62-8
R8	138	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	偶氮二甲醯胺	123-77-3
R8	139	Sulfurous acid, lead salt, dibasic	亞硫酸鉛(II)	62229-08-7
R8	140	Lead cyanamidate	氨基氰鉛鹽	20837-86-9
R9	141	Cadmium	鎘	7440-43-9

版本	No.	Substances Name	中文名稱	CAS No.
R9	142	Cadmium oxide	氧化鎘	1306-19-0
R9	143	Ammonium pentadecafluorooctanoate (APFO)	全氟辛酸銨 (APFO)	3825-26-1
R9	144	Pentadecafluorooctanoic acid (PFOA)	全氟辛酸 (PFOA)	335-67-1
R9	145	Dipentyl phthalate (DPP)	鄰苯二甲酸二戊酯 (DPP)	131-18-0
R9	146	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	-
R10	147	Cadmium sulphide	硫化鎘	1306-23-6
R10	148	Dihexyl phthalate	鄰苯二甲酸二己酯	84-75-3
R10	149	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	C.I. 直接紅 28	573-58-0
R10	150	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)	C.I. 直接黑 38	1937-37-7
R10	151	Imidazolidine-2-thione; 2-imidazoline-2-thiol	亞乙基硫脲	96-45-7
R10	152	Lead di(acetate)	醋酸鉛	301-04-2
R10	153	Trixylyl phosphate	磷酸三(二甲苯)酯	25155-23-1
R11	154	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
R11	155	Sodium perborate; perboric acid, sodium salt	過硼酸鈉	-
R11	156	Sodium peroxometaborate	過氧偏硼酸鈉	7632/4/4
R11	157	Cadmium chloride	氯化鎘	10108-64-2
R12	158	Cadmium fluoride	氟化鎘	7790-79-6
R12	159	Cadmium sulphate	硫酸鎘	10124-36-4, 31119-53-6
R12	160	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
R12	161	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
R12	162	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	二正辛基-雙(2-乙基己基巰基乙酸酯)錫	15571-58-1
R12	163	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	二正辛基-雙(2-乙基己基巰基乙酸酯)錫和單辛基-三(2-乙基己基巰基乙酸酯)錫的反應物	-

版本	No.	Substances Name	中文名稱	CAS No.
		ate (reaction mass of DOTE and MOTE)		
R13	164	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ 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 $\geq 0.3\%$	68515-51-5 68648-93-1
R13	165	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)]	-
R14	166	Nitrobenzene	硝基苯	98-95-3
R14	167	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	2-(5-氯-2H-苯並三唑-2-基)-4,6-二(1,1-二甲基乙基)苯酚(紫外線吸收劑327)	3864-99-1
R14	168	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	2-(2'-羥基-3'-仲丁基-5'-叔丁基苯基)苯並三唑(紫外線吸收劑350)	36437-37-3
R14	169	1,3-propanesultone	1,3-丙磺酸內酯	1120-71-4
R14	170	Perfluorononan-1-oic acid and its sodium and ammonium salts	全氟壬酸及其鈉鹽和銨鹽	375-95-1 21049-39-8 4149-60-4
R15	171	Benzo[def]chrysene (Benzo[a]pyrene)	苯並[def]屈(苯並[a]芘)	50-32-8
R16	172	4,4'-isopropylidenediphenol (bisphenol A; BPA)	雙酚A	80-05-7
R16	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]	支鏈或直鏈的4-庚基酚與其UVCB物質	-
R16	174	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	十九氟癸酸及其鈉鹽與銨鹽	335-76-2
R16	175	p-(1,1-dimethylpropyl)phenol	對-(1,1-二甲基丙基)酚	80-46-6
R17	176	Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	全氟己基磺酸及其鹽類	355-46-4
R18	177	Chrysene	屈	218-01-9
R18	178	Benz[a]anthracene	苯並[a]蔥	56-55-3
R18	179	Cadmium nitrate	硝酸鎘	10325-94-7
R18	180	Cadmium hydroxide	氫氧化鎘	21041-95-2
R18	181	Cadmium carbonate	碳酸鎘	513-78-0

版本	No.	Substances Name	中文名稱	CAS No.
R18	182	Dechlorane Plus (TM)	德克隆	-
R18	183	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear]	1,3,4-噻唑烷-2,5-二硫酮，甲醛及 4-庚基苯酚支鏈及直鏈反應物，(RP-HP) [含 $\geq 0.1\%$ w/w 支鏈及直鏈 4-庚基苯酚]	-
R19	184	Octamethylcyclotetrasiloxane (D4)	八甲基環四矽氧烷	556-67-2
R19	185	Decamethylcyclopentasiloxane (D5)	十甲基環五矽氧烷	541-02-6
R19	186	Dodecamethylcyclohexasiloxane (D6)	十二甲基環六矽氧烷	208-762-8
R19	187	Lead	鉛	7439-92-1
R19	188	Disodium octaborate	八硼酸二鈉	12008-41-2
R19	189	Benzo[ghi]perylene	苯并[g,h,i]芘	191-24-2
R19	190	Ethylenediamine (EDA)	乙二胺	107-15-3
R19	191	Terphenyl hydrogenated	氫化三聯苯	61788-32-7
R19	192	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride (trimellitic anhydride; TMA)	偏苯三酸酐	552-30-7
R19	193	Dicyclohexyl phthalate (DCHP)	鄰苯二甲酸二環己酯	84-61-7
R20	194	1,7,7-trimethyl-3-(phenylmethylene) bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor)	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
R20	195	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	2,2-雙(4'-羥基苯基)-4-甲基戊烷	6807-17-6
R20	196	Benzo[k]fluoranthene	苯并[k]芘	207-08-9
R20	197	Fluoranthene	芘	206-44-0 93951-69-0
R20	198	Phenanthrene	菲	85-01-8
R20	199	Pyrene	芘	129-00-0 1718-52-1
R21	200	2-methoxyethyl acetate	2-甲氧基乙酸乙酯	110-49-6
R21	201	Tris (4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)	三(4-壬基苯基，支鍊和直鍊)亞磷酸酯(TNPP) (4-壬基酚 4-NP，支鍊和直鍊濃度 $\geq 0.1\%$ 重量比)	-
R21	202	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，即其鹽類與鹵化醯類 (包括它們各自的異構物及其組合)	-
R21	203	4-tert-butylphenol	4-叔丁基苯酚	98-54-4
R22	204	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
R22	205	2-methyl-1-(4-methylthiophenyl)-2-morpholino propan-1-one	2-甲基-1-[4-(甲基硫代)苯基]-2-(4-嗎啉基)-1-丙酮	71868-10-5

版本	No.	Substances Name	中文名稱	CAS No.
R22	206	Diisohexyl phthalate	二異己基鄰苯二甲酸酯	71850-09-4
R22	207	Perfluorobutane sulfonic acid (PFBS) and its salts	全氟丁烷磺酸及其鹽類	-
R23	208	1-vinylimidazole	1-乙烯基咪唑	1072-63-5
R23	209	2-methylimidazole	2-甲基咪唑	693-98-1
R23	210	Butyl 4-hydroxybenzoate	4-羥基苯甲酸丁酯	94-26-8
R23	211	Dibutylbis(pentane-2,4-dionato-O,O')tin	二正丁基雙(乙醯丙酮基)錫	22673-19-4
R24	212	Bis(2-(2-methoxyethoxy) ethyl) ether	雙(2-(2-甲氧基乙氧基)乙基)醚	143-24-8
R24	213	Diocyltin 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	-

- R1: 第一次 SVHC / The first list of SVHC  
 R2: 第二次 SVHC / The second list of SVHC  
 R3: 第三次 SVHC / R3: The third list of SVHC  
 R4: 第四次 SVHC / R4: The fourth list of SVHC  
 R5: 第五次 SVHC / R5: The fifth list of SVHC  
 R6: 第六次 SVHC / R6: The sixth list of SVHC  
 R7: 第七次 SVHC / R7: The seventh list of SVHC  
 R8: 第八次 SVHC / R8: The eighth list of SVHC  
 R9: 第九次 SVHC / R9: The ninth list of SVHC  
 R10: 第十次 SVHC / R10: The tenth list of SVHC  
 R11: 第十一次 SVHC / R11: The eleventh list of SVHC  
 R12: 第十二次 SVHC / R12: The twelfth list of SVHC  
 R13: 第十三次 SVHC / R13: The thirteenth list of SVHC  
 R14: 第十四次 SVHC / R14: The fourteenth list of SVHC  
 R15: 第十五次 SVHC / R15: The fifteenth list of SVHC  
 R16: 第十六次 SVHC / R16: The sixteenth list of SVHC  
 R17: 第十七次 SVHC / R17: The seventeenth list of SVHC  
 R18: 第十八次 SVHC / R18: The eighteenth list of SVHC  
 R19: 第十九次 SVHC / R19: The nineteenth list of SVHC  
 R20: 第二十次 SVHC / R20: The twentieth list of SVHC  
 R21: 第二十一次 SVHC / R21: The twenty-first list of SVHC  
 R22: 第二十二次 SVHC / R22: The twenty-second list of SVHC  
 R23: 第二十三次 SVHC / R23: The twenty-third list of SVHC  
 R24: 第二十四次 SVHC / R24: The twenty-fourth list of SVHC

備註

Note:

- 關於矽酸鋁，耐火陶瓷纖維(A1-RCF) 及氧化鋯矽酸，耐火陶瓷纖維 (ZrA1-RCF) 2012 年 6 月 18 日歐盟當局發表公告，因第二次 SVHC 公布的 A1-RCF 及 ZrA1-RCF 包含在第六次 SVHC 公布的 A1-RCF 及 ZrA1-RCF，將前者合併於後者。

: How to treat No. 0022 Aluminosilicate Refractory Ceramic Fibres (2nd SVHC list) and No. 0023





Zirconia Aluminosilicate Refractory Ceramic Fibres (2nd SVHC list).

The European Chemical Agency officially announced on June 18, 2012 that Aluminosilicate Refractory Ceramic Fibres (AI-RCF) and Zirconia Aluminosilicate Refractory Ceramic Fibres (ZrAI-RCF) listed on the 2nd SVHC list are, respectively, included in AI-RCF and ZrAI-RCF listed on the 6th SVHC list; therefore, the former ones were to be consolidated with the latter ones.

Based on this announcement, the Avision Inc. will no longer require a response regarding these two chemical substances (Aluminosilicate Refractory Ceramic Fibres (2nd SVHC list) and Zirconia Aluminosilicate Refractory Ceramic Fibres (2nd SVHC list)).

2. REACH : <http://echa.europa.eu/>  
 附錄十四 (Annex XIV): <http://echa.europa.eu/web/guest/candidate-list-table>  
 附錄十七 (Annex XVII):  
<http://echa.europa.eu/web/guest/addressing-chemicals-of-concern/restrictions/list-of-restrictions>

#### 4) 環境管理物質清單 D / Environment-related Substances List D

下列物質沒有限制使用，各管理物質來源于法規或行業標準，，如果有意使用此清單中的化學物質/化學物質群，請掌握並回覆其含有之濃度。

The following substances are not currently restricted in any application. Each substance is based on law and regulation requirement or industrial standards.

Below is the list of Environment-related Substances List D.

No.	物質	Substances	CAS No.	Remarks
001	銻/銻化合物	Antimony/ Antimony Compounds	-	
002	砷/砷化合物	Arsenic/ Arsenic Compounds	-	
003	鈹/鈹化合物	Beryllium/ Beryllium Compounds	-	Beryllium Oxide:1000ppm
004	鎳及其化合物	Nickel/Nickel Compounds	-	
005	硒/硒化合物	Selenium/ Selenium Compounds	-	
006	高氯酸鹽化合物	Perchlorate Compounds	-	
007	四溴雙酚 A	Tetrabromobishphenol A (TBBPA)	79-94-7	
008	中鏈氯化石蠟(C=14~17)	MCCP's Alkanes, 14 – 17 Chloro	85535-85-9	限制使用在塑膠外殼 Restricted from use in plastics casings
009	磷化銦	Indium Phosphide (InP)	22398-80-7	
010	鹵化材料 (例如溴化阻燃劑 (BFR), 氯化阻燃劑 (CFR), 增塑劑和聚氯乙烯 (PVC))	Halogenated Materials (e.g. Brominated Flame Retardants (BFRs), Chlorinated Flame Retardants (CFRs), plasticizers, and Polyvinylchloride (PVC))	-	超過 25g 塑膠零件 : 禁止含有 plastic parts heavier than 25 grams : must not contained

## 附加文件 / Appendix - 化學物質/化學物質群的詳細清單 / Detail List of Environment-related Substances

### 1) 環境禁用物質清單 A / Banned Environment-related Substances List A

#### 鉛及鉛化合物 / Lead and Lead Compounds

中文名稱	Substances	CAS 號碼
鉛	Lead	7349-92-1
硫酸鉛 (二價), 硫酸鉛	Lead (II) sulfate, Lead Sulfate, Sulphuric acid, Lead silt	7446-14-2 15739-80-7
碳酸鉛	Lead (II) carbonate	598-63-0
鉻酸鉛	Lead (II) chromate	7758-97-6
鉬鉻酸鉛硫酸鹽 (C.I. 顏料紅 104)	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8
羥基碳酸鉛	Lead hydroxidcarbonate	1319-46-6
醋酸鉛(二價)	Lead (II) acetate	301-04-2
三水醋酸亞鉛 (二價)	Lead(II)acetate, tryhydrate	6080-56-4
磷酸鉛 (二價)	Lead(II) phosphate	7446-27-7
硒化鉛	Lead Selenide	12069-00-0
二氧化鉛, 氧化鉛, 氧化鉛(IV), 過氧化鉛	Lead (IV) oxide	1309-60-0
四氧化三鉛, 四氧化三鉛(二價, 四價)	Lead (II,IV) oxide	1314-41-6
硫化鉛 (二價)	Lead (II) sulfide	1314-87-0
氧化鉛(二價)	Lead (II) oxide	1317-36-8
碱式碳酸鉛	Lead (II) carbonate basic	1319-46-6
氫氧碳化鉛	Lead hydroxycarbonate	1344-36-1
磷酸鉛 (二價)	Lead (II) phosphate	7446-27-2
鉛鉻黃 (C.I. 顏料黃 34)	Lead chromate, chrome yellow	1344-37-2
鈦酸鉛	Lead Titanate	12060-00-3
硫酸鉛	Lead oxide sulfate	12202-17-4
硬脂酸鉛	Lead Stearate	1072-35-1
其他鉛化合物以及合金	Other lead compounds	-

#### 鎘及鎘化合物 / Cadmium and Cadmium Compounds

中文名稱	Substances	CAS 號碼
鎘	Cadmium	7440-43-9
氧化鎘	Cadmium oxide	1306-19-0
硫化鎘	Cadmium sulfide	1306-23-6
氯化鎘	Cadmium chloride	10108-64-2
硫酸鎘	Cadmium sulfate	10124-36-4

中文名稱	Substances	CAS 號碼
其他鎘化合物	Other cadmium compounds	

### 汞及汞化合物 / Mercury and Mercury Compounds

中文名稱	Substances	CAS 號碼
汞	Mercury	7439-97-6
氯化汞	Mercury chloride	33631-63-9
氯化汞 (二價)	Mercury (II) chloride	7487-94-7
硫酸汞	Mercury sulfate	7783-35-9
硝酸汞 (二價)	Mercury (II) nitrate	10045-94-0
氧化汞, 氧化汞(二價)	Mercury (II) oxide	21908-53-2
硫化汞	Mercury sulfide	1344-48-5
其他汞化合物	Other mercury compounds	-

### 六價鉻及六價鉻化合物 / Hexavalent Chromium and Hexavalent Chromium Compounds

中文名稱	Substances	CAS 號碼
氧化鉻	Chromium(VI)oxide; Chromium trioxide	1333-82-0
鉻酸鋇	Barium chromate	10294-40-3
鉻酸鈣	Calcium chromate	13765-19-0
鉻酸鉛	Lead (II) chromate	7758-97-6
鉬鉻酸鉛硫酸鹽 (C.I. 顏料紅 104)	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8
鉛鉻黃 (C.I. 顏料黃 34)	Lead chromate, chrome yellow	1344-37-2
鉻酸鈉	Sodium chromate	7775-11-3
重鉻酸鈉	Sodium dichromate; Sodium bichromate	10588-01-9
鉻酸鋇	Strontium chromate	7789-06-2
重鉻酸鉀	Potassium dichromate ;potassium bichromate	7778-50-9
鉻酸鉀	Potassium chromate	7789-00-6
鉻酸鋅	Zinc chromate	13530-65-9
其他六價鉻化合物	Other hexavalent Chromium compounds	-

### 多溴聯苯 (PBB 類) / Polybrominated Biphenyls (PBBs)

中文名稱	Substances	CAS 號碼
多溴聯苯類	Polybrominated Biphenyls	59536-65-1
二溴聯苯及其醚類	Dibromobiphenyl	92-86-4
2-溴聯苯及其醚類	2-Bromobiphenyl	2052/7/5
3-溴聯苯及其醚類	3-Bromobiphenyl	2113-57-7
4-溴聯苯及其醚類	4-Bromobiphenyl	92-66-0
三溴聯苯	Tribromobiphenyl	59080-34-1
四溴聯苯及其醚類	Tetrabromobiphenyl	40088-45-7

中文名稱	Substances	CAS 號碼
五溴聯苯	Pentabromobidphenyl	56307-79-0
六溴聯苯及其醚類	Hexabromobiphenyl	59080-40-9
六溴聯苯及其醚類	Hexabromo-1,1'-biphenyl	36355-01-8
六溴聯苯及其醚類 FF-1	Firemaster FF-1	67774-32-7
七溴聯苯	Heptabromobiphenyl	35194-78-6
八溴聯苯及其醚類	Octabromobiphenyl	61288-13-9
九溴-1,1'-聯苯	Nonabromo-1,1'-biphenyl	27753-52-2
十溴聯苯及其醚類	Decabromobiphenyl	13654-09-6

### 多溴二苯醚類(PBDE 類) / Polybrominated Diphenylethers (PBDEs)

中文名稱	Substances	CAS 號碼
溴聯苯醚	Bromobiphenyl ether	101-55-3
二溴聯苯醚	Dibromobiphenyl ether	2050-47-7
三溴聯苯醚	Tribromobiphenyl ether	49690-94-0
四溴聯苯醚	Tetrabromobiphenyl ether	40088-47-9
五溴聯苯醚 (注:市場銷售的 PeBDPO 是包含各種溴化聯苯環氧的複雜反應混合物)	Pentabromobidphenyl ether (note:Commerciallyavailable PeBDPO is a complex reactionmixturecontaining a variety of brominated diphenyloxides.)	32534-81-9 (用於商用標牌 PeBDPO 的 CAS No.)
六溴聯苯醚	Hexabromobiphenyl ether	36483-60-0
七溴聯苯醚	Heptabromobiphenyl ether	68928-80-3
八溴聯苯醚	Octabromobiphenyl ether	32536-52-0
九溴聯苯醚	Nonabromobiphenyl ether	63936-56-1
十溴聯苯醚	Decabromobiphenyl ether	1163-19-5

## 2) 環境禁用物質清單 B / Banned Environment-related Substances List B

### ● 002 ODSs ; 臭氧層破壞物質 (蒙特羅議定書的受控物質) / Ozone Depleting Substances (The controlled substances in Montreal Protocol)

蒙特羅議定書 附件 A 第 I 類 / Montreal Protocol Annex A Group I			
化學式	中文名稱	Substances	CAS 號碼
CFC13	三氯氟甲烷 (CFC-11)	Trichlorofluoromethane (CFC-11)	75-69-4
CF2Cl2	二氯二氟甲烷 (CFC12)	Dichlorodifluoromethane (CFC-12)	75-71-8
C2F3Cl3	三氯三氟乙烷 (CFC113)	Trichlorotrifluoroethane (CFC-113)	354-58-5
	1,1,2 三氯-1,2,2 三氟乙烷 (CFC-113)	1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	76-13-1
	1,1,1-三氯-2,2,2-三氟乙烷 (CFC-113)	1,1,1-Trichloro-2,2,2-trifluoroethane (CFC-113)	354-58-5
C2F4Cl2	二氯四氟乙烷 (CFC114)	Dichlorotetrafluoroethane (CFC-114)	76-14-2
C2F5Cl	一氯五氟乙烷 (CFC115)	Monochloropentafluoroethane (CFC-115)	76-15-3
蒙特羅議定書 附件 A 第 II 類 / Montreal Protocol Annex A Group II			
化學式	中文名稱	Substances	CAS 號碼
CF2BrCl	溴氯二氟甲烷 (Halon1211)	Bromochlorodifluoromethane (halon-1211)	353-59-3

CF3Br	溴三氟甲烷 (Halon1301)	Bromotrifluoromethane (halon-1301)	75-63-8
C2F4Br2	二溴四氟乙烷 (Halon2402)	Dibromotetrafluoroethane (halon-2402)	124-73-2
<b>蒙特羅議定書 附件 B 第 I 類 / Montreal Protocol Annex B Group I</b>			
化學式	中文名稱	Substances	CAS 號碼
CF3Cl	三氯氟甲烷 (CFC13)	Chlorotrifluoromethane (CFC-13)	75-72-9
C2FCl5	一氟五氯乙烷 (CFC111)	Pentachlorofluoroethane (CFC-111)	354-56-3
C2F2Cl4	四氯二氟乙烷 (CFC112)	Tetrachlorodifluoroethane (CFC-112)	76-12-0
	1,1,2,2-四氯-1,2-二氟乙烷 (CFC-112)	1,1,2,2-Tetrachloro-1,2-difluoroethane (CFC-112)	76-12-0
	1,1,1,2-四氯-2,2-二氟乙烷 (CFC-112a)	1,1,1,2-Tetrachloro-2,2-difluoroethane (CFC-112a)	76-11-9
C3FC17	七氯氟丙烷 (CFC211)	Hexachlorofluoropropane (CFC-211)	422-78-6
	1,1,1,2,2,3,3-七氯-3-氟丙烷 (CFC-211aa)	1,1,1,2,2,3,3-Hexachloro-3-fluoropropane (CFC-211aa)	135401-87-5
	1,1,1,2,3,3,3-七氯-2-氟丙烷 (CFC-211ba)	1,1,1,2,3,3,3-Hexachloro-2-fluoropropane (CFC-211ba)	422-78-6 422-81-1
C3F2Cl6	六氯二氟丙烷 (CFC212)	Hexachlorodifluoropropane (CFC-212)	3182-26-1
C3F3Cl5	五氯三氟丙烷 (CFC213)	Pentachlorotrifluoropropane (CFC-213)	2354-06-5 134237-31-3
C3F4Cl4	四氯四氟丙烷 (CFC214)	Tetrachlorotetrafluoropropane (CFC-214)	29255-31-0
	1,2,2,3-四氯-1,1,1,3-四氟丙烷 (CFC-214aa)	1,2,2,3-Tetrachloro-1,1,1,3-tetrafluoropropane (CFC-214aa)	2268-46-4
	1,1,1,3-四氯-2,2,3,3-四氟丙烷 (CFC-214cb)	1,1,1,3-Tetrachloro-2,2,3,3-tetrafluoropropane (CFC-214cb)	-
C3F5Cl3	三氯五氟丙烷 (CFC215)	Trichloropentafluoropropane	1599-41-3
	1,2,2-三氯五氟丙烷 (CFC-215aa)	1,2,2-Trichloropentafluoropropane	1599-41-3
	1,2,3-三氯五氟丙烷 (CFC-215ba)	1,2,3-Trichloropentafluoropropane	76-17-5
	1,1,2-三氯五氟丙烷 (CFC-215bb)	1,1,2-Trichloropentafluoropropane	-
	1,1,3-三氯五氟丙烷 (CFC-215ca)	1,1,3-Trichloropentafluoropropane	-
	1,1,1-三氯五氟丙烷 (CFC-215cb)	1,1,1-Trichloropentafluoropropane	4259-43-2
C3F6Cl2	二氯六氟丙烷 (CFC216)	Dichlorohexafluoropropane (CFC-216)	661-97-2
C3F7Cl	一氯七氟丙烷 (CFC217)	Monochloroheptafluoropropane (CFC-217)	422-86-6
<b>蒙特羅議定書 附件 B 第 II 類 / Montreal Protocol Annex B Group II</b>			
化學式	中文名稱	Substances	CAS 號碼
CCl4	四氯化碳 (四氯甲烷)	Carbon Tetrachloride (Tetrachloromethane)	56-23-5
<b>蒙特羅議定書 附件 B 第 III 類 / Montreal Protocol Annex B Group III</b>			
化學式	中文名稱	Substances	CAS 號碼
C2H3Cl3	1,1,1-三氯乙烷 (三氯乙烷) 及其異構體, 但 1,1,2-三氯乙烷除外	1,1,1-Trichloroethane (methyl chloroform) Except 1,1,2-trichloroethane	71-55-6
<b>蒙特羅議定書 附件 C 第 I 類 / Montreal Protocol Annex C Group I</b>			
化學式	中文名稱	Substances	CAS 號碼
CHFCl2	二氯氟甲烷 (HCFC21)	Dichlorofluoromethane (HCFC-21)	75-43-4
CHF2Cl	氯二氟甲烷 (HCFC22)	Chlorodifluoromethane (HCFC-22)	75-45-6
CH2FCl	氯氟甲烷 (HCFC31)	Chlorofluoromethane (HCFC-31)	593-70-4
C2HFCl4	四氯氟乙烷 (HCFC121)	Tetrachlorofluoroethane (HCFC-121)	134237-32-4
	1,1,2,2-四氯-1-氟乙烷 (HCFC-121)	1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)	354-14-3
	1,1,1,2-四氯-2-氟乙烷 (HCFC121a)	1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)	354-11-0
C2HF2Cl3	三氯二氟乙烷 (HCFC122)	Trichlorodifluoroethane (HCFC-122)	41834-16-6
	1,2,2-三氯-1,1-二氟乙烷 (HCFC-122)	1,2,2-Trichloro-1,1-difluoroethane (HCFC-122)	354-21-2
	1,1,2-三氯-1,2-二氟乙烷 (HCFC-122a)	1,1,2-Trichloro-1,2-difluoroethane (HCFC-122a)	354-15-4
	1,1,1-三氯-2,2-二氟乙烷 (HCFC-122b)	1,1,1-Trichloro-2,2-difluoroethane (HCFC-122b)	354-12-1
C2HF3Cl2	二氯三氟乙烷 (HCFC123)	Dichlorotrifluoroethane (HCFC-123)	34077-87-7
	1,1-二氯-2,2,2-三氟乙烷 (HCFC-123)	2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	306-83-2
	1,2-二氯-1,1,2-三氟乙烷 (HCFC-123a)	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)	354-23-4
	二氯-1,1,2-三氟乙烷	Dichloro-1,1,2-trifluoroethane	90454-18-5
	1,1-二氯-1,2,2-三氟乙烷 (HCFC-123b)	1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b)	812-04-4
C2HF4Cl	氯四氟乙烷 (HCFC124)	Chlorotetrafluoroethane (HCFC-124)	63938-10-3
	2-氯-1,1,1,2-四氟乙烷 (HCFC-124)	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)	2837-89-0 354-25-6

	1-氯-1,1,2,2-四氟乙烷 (HCFC 124a)	1-Chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	
C2H2FCI3	三氯氟乙烷 (HCFC131) 1,1,2-三氯-2-氟乙烷 (HCFC-131) 1,1,2-三氯-1-氟乙烷 (HCFC-131a) 1,1,1-三氯-2-氟乙烷 (HCFC131b)	Trichlorofluoroethane (HCFC131) 1,1,2-Trichloro-2-fluoroethane (HCFC-131) 1,1,2-Trichloro-1-fluoroethane (HCFC-131a) 1,1,1-Trichloro-2-fluoroethane (HCFC-131b)	27154-33-2 (134237-34-6) 359-28-4 811-95-0 2366-36-1
C2H2F2CI2	二氯二氟乙烷 (HCFC132) 1,2-二氯-1,2-二氟乙烷 (HCFC-132) 1,1-二氯-2,2-二氟乙烷 (HCFC-132a) 1,2-二氯-1,1-二氟乙烷 (HCFC 132b) 1,1-二氯-1,2-二氟乙烷 (HFCF 132c)	Dichlorodifluoroethane (HCFC-132) 1,2-Dichloro-1,2-difluoroethane (HCFC-132) 1,1-Dichloro-2,2-difluoroethane (CFC-132a) 1,2-Dichloro-1,1-difluoroethane (HCFC 132b) 1,1-Dichloro-1,2-difluoroethane (HFCF 132c)	25915-78-0 431-06-1 471-43-2 1649-08-7 1842-05-3
C2H2F3CI	氯三氟乙烷 (HCFC133) 1-氯-1,2,2-三氟乙烷 (HCFC-133) 2-氯--1,1,1-三氟乙烷 (HCFC-133a) 1-氯--1,1,2-三氟乙烷 (HCFC-133b)	Chlorotrifluoroethane (HCFC-133) 1-Chloro-1,2,2-trifluoroethane (HCFC-133) 2-Chloro-1,1,1-trifluoroethane (HCFC-133a) 1-Chloro-1,1,2-trifluoroethane (HCFC-133b)	1330-45-6 431-07-2 1330-45-6 75-88-7 421-04-5
C2H3FCI2	二氯氟乙烷 (HCFC141) 1,2-二氯-1-氟乙烷 (HCFC-141) 1,1-二氯-2-氟乙烷 (HCFC-141a) 1,1-二氯-1-氟乙烷 (HCFC-141b)	Dichlorofluoroethane (HCFC-141) 1,2-Dichloro-1-fluoroethane (HCFC-141) 1,1-Dichloro-2-fluoroethane (HCFC-141a) 1,1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6 (25167-88-8) 430-57-9 430-53-5 1717-00-6
C2H3F2CI	氯二氟乙烷 (HCFC142) 2-氯-1,1-二氟乙烷 (HCFC-142) 1-氯-1,2-二氟乙烷 (HCFC142a) 1-氯-1,1-二氟乙烷 (HCFC-142b)	Chlorodifluoroethane 2-Chloro-1,1-difluoroethane 1-Chloro-1,2-difluoroethane 2-Chloro-1,1-difluoroethane	25497-29-4 338-65-8 338-64-7 75-68-3
C2H4FCI	氯氟乙烷 (HCFC-151) 1-氯-2-氟乙烷 (HCFC-151) 1-氯-1-氟乙烷 (HCFC-151a)	Chlorofluoroethane (HCFC-151) 1-Chloro-2-fluoroethane (HCFC-151) 1-Chloro-1-fluoroethane (HCFC-151a)	110587-14-9 762-50-5 1615-75-4
C3HFCI6	六氯氟丙烷 (HCFC221) 1,1,1,2,2,3-六氯-3-氟丙烷 (HCFC-221ab)	Hexachlorofluoropropane 1,1,1,2,2,3-Hexachloro-3-fluoropropane	134237-35-7 422-26-4
C3HF2CI5	五氯二氟丙烷 (HCFC222) 1,1,1,3,3-五氯-2,2-二氟丙烷 (HCFC-222ca) 1,2,2,3,3-五氯-1,1-二氟丙烷 (HCFC-222aa)	Pentachlorodifluoropropane (HCFC-222) 1,1,1,3,3-Pentachloro-2,2-difluoropropane (HCFC-222ca) 1,2,2,3,3-Pentachloro-1,1-difluoropropane (HCFC-222aa)	134237-36-8 422-49-1 422-30-0
C3HF3CI4	四氯三氟丙烷 (HCFC223) 1,1,3,3-四氯-1,2,2-三氟丙烷 (HCFC-223ca) 1,1,1,3-四氯-2,2,3-三氟丙烷 (HCFC-223cb)	Tetrachlorotrifluoropropane 1,1,3,3-Tetrachloro-1,2,2-trifluoropropane 1,1,1,3-Tetrachloro-2,2,3-trifluoropropane	134237-37-9 422-52-6 422-50-4
C3HF4CI3	三氯四氟丙烷 (HCFC224) 1,3,3-三氯-1,1,2,2-四氟丙烷 (HCFC-224ca) 1,1,3-三氯-1,2,2,3-四氟丙烷 (HCFC-224cb) 1,1,1-三氯-2,2,3,3-四氟丙烷 (HCFC-224cc)	Trichlorotetrafluoropropane (HCFC-224) 1,3,3-Trichloro-1,1,2,2-tetrafluoropropane (HCFC-224ca) 1,1,3-Trichloro-1,2,2,3-tetrafluoropropane (HCFC-224cb) 1,1,1-Trichloro-2,2,3,3-tetrafluoropropane (HCFC-224cc)	134237-38-0 422-54-8 422-53-7 422-51-5
C3HF5CI2	二氯五氟丙烷 (HCFC225) 2,2-二氯-1,1,1,3,3-五氟丙烷 (HCFC-225aa) 2,3-二氯-1,1,1,2,3-五氟丙烷 (HCFC-225ba) 1,2-二氯-1,1,2,3,3-五氟丙烷 (HCFC-225bb) 3,3-二氯-1,1,1,2,2-五氟丙烷 (HCFC-225ca) 1,3-二氯-1,1,2,2,3-五氟丙烷 (HCFC-225cb) 1,1-二氯-1,2,2,3,3-五氟丙烷 (HCFC-225cc) 1,2-二氯-1,1,3,3,3-五氟丙烷 (HCFC-225da) 1,3-二氯-1,1,2,3,3-五氟丙烷 (HCFC-225ea) 1,1-二氯-1,2,3,3,3-五氟丙烷 (HCFC-225eb)	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 (HCF-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)	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
C3HF6CI	氯六氟丙烷 (HCFC226) 2-氯-1,1,1,3,3,3-氟丙烷 (HCFC-226da)	Chlorohexafluoropropane (HCFC226) 2-Chloro-1,1,1,3,3,3-hexafluoropropane (HCFC226da)	134308-72-8 431-87-8
C3H2FCI5	五氯氟丙烷 (HCFC231) 1,1,1,2,3-五氯-2-氟丙烷 (HCFC-231bb)	Pentachlorofluoropropane (HCFC-231) 1,1,1,2,3-Pentachloro-2-fluoropropane (HCFC-231bb)	134190-48-0 421-94-3
C3H2F2CI4	四氯二氟丙烷 (HCFC232) 1,1,1,3-四氯-3,3-二氟丙烷 (HCFC-232fc)	Tetrachlorodifluoropropane (HCFC-232) 1,1,1,3-Tetrachloro-3,3-difluoropropane (HCFC-232fc)	134237-39-1 460-89-9

C3H2F3Cl3	三氯三氟丙烷 (HCFC233) 1,1,1-三氯-3,3,3-三氟丙烷 (HCFC-233fb)	Trichlorotrifluoropropane (HCFC-233) 1,1,1-Trichloro-3,3,3-trifluoropropane (HCFC-233fb)	134237-40-4 7125-83-9
C3H2F4Cl2	二氯四氟丙烷 (HCFC234) 1,2-二氯-1,2,3,3-四氟丙烷 (HCFC-234db)	Dichlorotetrafluoropropane (HCFC-234) 1,2-Dichloro-1,2,3,3-tetrafluoropropane (HCFC-234db)	127564-83-4 425-94-5
C3H2F5Cl	氯五氟丙烷 (HCFC235) 1-氯五-1,1,3,3,3-氟丙烷 (HCFC-235fa)	Chloropentafluoropropane (HCFC-235) 1-Chloro-1,1,3,3,3-pentafluoropropane (HCFC-235fa)	134237-41-5 460-92-4
C3H3FC14	四氯氟丙烷 (HCFC241) 1,1,2,3-四氯-1-氟丙烷 (HCFC-241db)	Tetrachlorofluoropropane (HCFC-241) 1,1,2,3-Tetrachloro-1-fluoropropane (HCFC-241)	134190-49-1 666-27-3
C3H3F2Cl3	三氯二氟丙烷 (HCFC242) 1,3,3-三氯-1,1-二氟丙烷 (HCFC-242fa)	Trichlorodifluoropropane (HCFC-242) 1,3,3-Trichloro-1,1-difluoropropane (HCFC-242)	134237-42-6 460-63-9
C3H3F3Cl2	二氯三氟丙烷 (HCFC243) 1,1-二氯 1,2,2-三氟丙烷 (HCFC-243cc) 2,3-二氯 1,1,1-三氟丙烷 (HCFC-243db) 3,3-二氯 1,1,1-三氟丙烷 (HCFC-243fa)	Dichlorotrifluoropropane (HCFC-243) 1,1-dichloro-1,2,2-trifluoropropane (HCFC-243cc) 2,3-dichloro-1,1,1-trifluoropropane (HCFC-243db) 3,3-Dichloro-1,1,1-trifluoropropane (HCFC-243fa)	134237-43-7 7125-99-7 338-75-0 460-69-5
C3H3F4Cl	氯四氟丙烷 (HCFC244) 3-氯四-1,1,2,2-氟丙烷 (HCFC-244ca) 1-氯四-1,1,2,2-氟丙烷 (HCFC-244cc)	Chlorotetrafluoropropane (HCFC-244) 3-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244ca) 1-Chloro-1,1,2,2-tetrafluoropropane (HCFC-244cc)	134190-50-4 679-85-6 421-75-0
C3H4FC13	三氯氟丙烷 (HCFC251) 1,1,3-三氯-1-氟丙烷 (HCFC-251fb) 1,1,2-三氯-1-氟丙烷 (HCFC-251dc)	Trichlorofluoropropane (HCFC-251) 1,1,3-Trichloro-1-fluoropropane (HCFC-251 fb) 1,1,2-Trichloro-1-fluoropropane (HCFC-251 dc)	134190-51-5 818-99-5 421-41-0
C3H4F2Cl2	二氯二氟丙烷 (HCFC252) 1,3-二氯-1,1-二氟丙烷 (HCFC-252fb)	Dichlorodifluoropropane (HCFC-252) 1,3-Dichloro-1,1-difluoropropane (HCFC-252 fb)	134190-52-6 819-00-1
C3H4F3Cl	氯三氟丙烷 (HCFC253) 3-氯-1,1,1-三氟丙烷 (HCFC253fb)	Chlorotrifluoropropane (HCFC-253) 3-Chloro-1,1,1-trifluoropropane (HCFC-253 fb)	134237-44-8 460-35-5
C3H5FC12	氯三氟丙烷 (HCFC261) 1,1-氯三-1-氟丙烷 (HCFC-261fc) 1,2-氯三-2-氟丙烷 (HCFC-261ba)	Dichlorofluoropropane (HCFC-261) 1,1-Dichloro-1-fluoropropane (HCFC-261 fc) 1,2-Dichloro-2-fluoropropane (HCFC-261 ba)	134237-45-9 7799-56-6 420-97-3
C3H5F2Cl	二氯氟丙烷 (HCFC-262) 1-二氯-2,2-氟丙烷 (HCFC-262ca) 2-二氯-1,3-氟丙烷 (HCFC-262da) 1-二氯-1,1-氟丙烷 (HCFC-262fc)	Chlorodifluoropropane (HCFC-262) 1-Chloro-2,2-difluoropropane (HCFC-262 ca) 2-Chloro-1,3-difluoropropane (HCFC-262 da) 1-Chloro-1,1-difluoropropane (HCFC-262 fc)	134190-53-7 420-99-5 102738-79-4 421-02-3
C3H6FC1	氯二氟丙烷 (HCFC-271) 2-氯-2-氟丙烷 (HCFC-271ba) 1-氯-1-氟丙烷 (HCFC-271fb)	Chlorofluoropropane (HCFC- 271) 2-Chloro-2-fluoropropane (HCFC- 271 ba) 1-Chloro-1-fluoropropane (HCFC- 271 fb)	134190-54-8 420-44-0 430-55-7

## 蒙特羅議定書 附件 C 第 II 類 / Montreal Protocol Annex C Group II

化學式	中文名稱	Substances	CAS 號碼
CH2Br2	二溴氟甲烷 (HBFC-21 B2)	Dibromofluoromethane (HBFC-21 B2)	1868-53-7
CHF2Br	溴二氟甲烷及异构体 (HBFC-22B1)	Bromodifluoromethane (HBFC-22B1)	1511-62-2
CH2FBr	溴氟甲烷 (HBFC-31B1)	Bromodifluoromethane (HBFC-31B1)	373-52-4
C2HFBr4	四溴氟乙烷 (HBFC-121 B4)	Tetrabromofluoroethane (HBFC-121 B4)	306-80-9
C2HF2Br3	三溴二氟乙烷 (HBFC-122 B3)	Tribromodifluoroethane (HBFC-122 B3)	-
C2HF3Br2	二溴三氟乙烷 (HBFC-123 B2)	Dibromotrifluoroethane (HBFC-123 B2)	354-04-1
C2HF4Br	溴四氟乙烷 (HBFC-124B1)	Bromotetrafluoroethane (HBFC-124B1)	124-72-1
C2H2FBr3	三溴氟乙烷 (HBFC-131 B3)	Tribromofluoroethane (HBFC-131 B3)	-
C2H2F2Br2	二溴二氟乙烷 (HBFC-132 B2)	Dibromodifluoroethane (HBFC-132 B2)	75-82-1
C2H2F3Br	溴三氟乙烷 (HBFC-133)	Bromotrifluoroethane (HBFC-133B1)	421-06-7
C2H3FBr2	二溴氟乙烷 (HBFC-141 B2)	Dibromofluoroethane (HBFC-141 B2)	358-97-4
C2H3F2Br	溴二氟乙烷 (HBFC-142B1)	Bromodifluoroethane (HBFC-142B1)	420-47-3
C2H4FBr	溴氟乙烷 (HBFC-151B1)	Bromofluoroethane (HBFC-151B1)	762-49-2
C3HFBr6	六溴氟丙烷 (HBFC-221B6)	Hexabromofluoropropane (HBFC-221 B6)	-

C3HF2Br5	五溴二氟丙烷 (HBFC-222 B5)	Pentabromodifluoropropane (HBFC-222 B5)	-
C3HF3Br4	四溴三氟丙烷 (HBFC-223 B4)	Tetrabromotrifluoropropane (HBFC-223 B4)	-
C3HF4Br3	三溴四氟丙烷 (HBFC-224 B3)	Tribromotetrafluoropropane (HBFC-224 B3)	-
C3HF5Br2	二溴五氟丙烷 (HBFC-225 B2)	Dibromopentafluoropropane (HBFC-225 B2)	431-78-7
C3HF6Br	溴六氟丙烷 (HBFC-226)	Bromohexafluoropropane (HBFC-226B1)	2252-78-0
C3H2FBr5	五溴氟丙烷 (HBFC-231 B5)	Pentabromofluoropropane (HBFC-231 B5)	-
C3H2F2Br4	四溴二氟丙烷 (HBFC-232 B4)	Tetrabromodifluoropropane (HBFC-232 B4)	-
C3H2F3Br3	三溴三氟丙烷 (HBFC-233 B3)	Tribromotrifluoropropane (HBFC-233 B3)	-
C3H2F4Br2	二溴四氟丙烷 (HBFC-234 B2)	Dibromotetrafluoropropane (HBFC-234 B2)	-
C3H2F5Br	溴五氟丙烷 (HBFC-235B1)	Bromopentafluoropropane (HBFC-235B1)	460-88-8
C3H3FBr4	四溴氟丙烷 (HBFC-241 B4)	Tetrabromofluoropropane (HBFC-241 B4)	-
C3H3F2Br3	三溴二氟丙烷 (HBFC-242 B3)	Tribromodifluoropropane (HBFC-242 B3)	70192-80-2
C3H3F3Br2	二溴三氟丙烷 (HBFC-243 B2)	Dibromotrifluoropropane (HBFC-243 B2)	431-21-0
C3H3F4Br	溴四氟丙烷 (HBFC-244)	Bromotetrafluoropropane (HBFC-244B1)	679-84-5
C3H4FBr3	三溴氟丙烷 (HBFC-251 B3)	Tribromofluoropropane (HBFC-251 B3)	75372-14-4
C3H4F2Br2	二溴二氟丙烷 (HBFC-252 B2)	Dibromodifluoropropane (HBFC-252 B2)	460-25-3
C3H4F3Br	溴三氟丙烷 (HBFC-253B1)	Bromotrifluoropropane (HBFC-253B1)	421-46-5
C3H5FBr2	二溴氟丙烷 (HBFC-261 B2)	Dibromofluoropropane (HBFC-261 B2)	51584-26-0
C3H5F2Br	溴二氟丙烷 (HBFC-262)	Bromodifluoropropane (HBFC-262B1)	-
C3H6FBr	溴氟丙烷 (HBFC-271B1)	Bromofluoropropane (HBFC-271B1)	1871-72-3

### 蒙特羅議定書 附件 C 第 III 類 / Montreal Protocol Annex C Group III

化學式	中文名稱	Substances	CAS 號碼
CH2BrCl	溴氯甲烷 (halon-1011)	Bromochloromethane (halon-1011)	74-97-5

### 蒙特羅議定書 附件 E / Montreal Protocol Annex E

CH3Br	溴甲烷	Methylbromide	74-83-9
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### ● 003 石棉類 / Asbestos

中文名稱	Substances	CAS 號碼
石棉	Asbestos	1332-21-4
陽起石	Actinolite	77536-66-4
鐵石棉	Amosite	12172-73-5
直閃石	Anthophyllite	77536-67-5
溫石棉	Chrysotile	12001-29-5
藍石棉	Crocidolite	12001-28-4
透閃石	Tremolite	77536-68-6

### ● 005 多氯聯苯類 / Polychlorinated Biphenyls (PCBs)

中文名稱	Substances	CAS 號碼
多氯聯苯類	Polychlorinated Biphenyls	1336-36-3
多氯聯苯 (Aroclor)	Aroclor	12767-79-2
氯二苯基 (多氯聯苯 1260)	Chlorodiphenyl (Aroclor 1260)	11096-82-5
Kanechlor 500	Kanechlor 500	27323-18-8
多氯聯苯 1254	Aroclor 1254	11097-69-1
甲基四氯二苯基甲烷 (Ugilec 141)	Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6



甲基二氯二苯基甲烷 (Ugilec 121, Ugilec 21)	Monomethyl-dichloro-diphenyl methane (Ugilec 121,Ugilec 21)	81161-70-8
甲基二溴二苯基甲烷 (DBBT)	Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8

● **007 PCN ; 聚氯萘/ Polychlorinated Naphthalenes**

中文名稱	Substances	CAS 號碼
聚氯化萘	Polychlorinated Naphthalene	70776-03-3
,2-二氯萘 1,3-二氯萘 1,4-二氯萘 1,5-二氯萘 1,6-二氯萘 1,7-二氯萘 1,8-二氯萘 2,3-二氯萘 2,6-二氯萘 2,7-二氯萘 二氯萘	1,2-Dichloronaphthalene 1,3-Dichloronaphthalene 1,4-Dichloronaphthalene 1,5-Dichloronaphthalene 1,6-Dichloronaphthalene 1,7-Dichloronaphthalene 1,8-Dichloronaphthalene 2,3-Dichloronaphthalene 2,6-Dichloronaphthalene 2,7-Dichloronaphthalene Dichloronaphthalene	2050-69-3. 2198-75-6. 1825-31-6. 1825-30-5 2050-72-8 2050-73-9 2050-74-0 2050-75-1 2065-70-5 2198-77-8 28699-88-9
其他多氯化萘	Other polychlorinated Naphthalenes	-

● **008 放射性物質 / Radioactive Substances**

中文名稱	Substances	CAS 號碼
鈾	Uranium	7440-61-1
釷	Plutonium	7440-07-5
氡	Radon	10043-92-2
錒	Americium	7440-35-9
釷	Thorium	7440-29-1
銫	Cesium	7440-46-2
銣	Strontium	7440-24-6
其他放射性物質	Other radioactive substances	-

● **010 TBT ; 三丁基錫類/ TPT ; 三苯基錫類 Tri-substituted organostannic compounds such as Tributyltin (TBT) compounds and Triphenyltin (TPT) compounds**

TBT ; 三丁基錫化合物 / Tributyltin (TBT) compounds		
中文名稱	Substances	CAS 號碼
三丁基錫甲基丙烯酸鹽	Tributyltin methacrylate	2155-70-6
雙(三丁基錫) 富馬酸鹽	Bis(tributyltin) fumarate	6454-35-9
三丁基錫氟化物	Tributyltin fluoride	1983-10-4
雙(三丁基錫) 2,3-二溴丁二酸鹽	Bis(tributyltin)2,3-Dibromosuccinate	31732-71-5
三丁基錫乙酸鹽	Tributyltin acetate	56-36-0
雙(三丁基錫) 苯二甲酸鹽	Bis(tributyltin) phthalate	4782-29-0
烷基=丙烯酸酯樹脂, 甲基=異丁烯酸鹽, 及三丁基錫=異丁烯酸鹽的共聚物 (烷基; C=8)	Copolymer of alkyl acrylate,methyl Methacrylate and tributyltin methacrylate (alkyl; C=8)	-
三丁基錫=磺酸鹽	Tributyltin sulfamate	6517-25-5
三丁基氯化錫	Tributyltin chloride	1461-22-9

三丁基錫 =環戊烷羧酸鹽和類似化合物 (三丁基錫萘酸鹽) 的混合物	Mixture of tributyl tin cyclopentanecarboxylate and its analogs (tributyl tin naphthenate)	-
三丁基錫=1,2,3,4,4a,4b,5,6,10, 10a-十氫-7-異丙基 -1,4a-二甲基 -1-菲羧酸鹽及其類似化合物 (三丁基錫酪氨酸鹽) 的混合物	Mixture of tributyl tin 1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl -1,4a-dimethyl-1-phenanthrenecarboxylate and its analogs (tributyltinrosin salt)	-
其他三丁基錫類	Other Tributyl Tins)	-

## TPT；三苯基錫化合物 / Triphenyltin (TPT) compounds

中文名稱	Substances	CAS 號碼
三苯基錫 N,N'-二甲基二硫代氨基甲酸鹽(二甲基二硫代氨基甲酸三苯基錫)	Triphenyl tin N,N'- Dimethyldithiocarbamate	1803-12-9
三苯基錫氟化物 (氟化三苯基錫)	Triphenyl tin fluoride (fentin fluoride)	379-52-2
三苯基錫乙酸鹽	Triphenyl tin acetate	900-95-8
氯化三苯基錫	Triphenyl tin chloride	639-58-7
羥基三苯基錫	Triphenyl tin hydroxide	76-87-9
三苯基錫脂肪酸鹽 (C=9~11)	Triphenyl tin fatty acid salts (C=9-11)	18380-71-7
三苯基錫氯代乙酸鹽	Triphenyl tin chloroacetate	7094-94-2
其他三苯基錫	Other Triphenyl Tins	-

## 三置換有機錫化合物 / Tri-substituted organostannic compounds

中文名稱	Substances	CAS 號碼
其他的三置換有機錫化合物	Other Tri-substituted organostannic compounds	-

## ● 012 PFOS；全氟辛烷磺酸及鹽類 / PFOS (Perfluorooctane sulfonates)

中文名稱	Substances	CAS 號碼
PFOS 全氟辛基磺酸胺	Heptadecafluorooctanesulphonamide	754-91-6
全氟辛烷磺酸	Heptadecafluorooctane-1-sulphonic acid	1763-23-1
全氟辛烷磺酸鉀鹽	Potassiumheptadecafluorooctane-1-sulphonate	2795-39-3
全氟辛烷磺酸鋰鹽	Lithiumheptadecafluorooctanesulphonate	29457-72-5
五氟乙基十氟環己磺酸鉀鹽	Potassium decafluoro(pentafluoroethyl)cyclohexanesulphonate	67584-42-3
二(三氟甲基)九氟環己烷磺酸鉀	Potassium nonafluorobis(trifluoromethyl)cyclohexanesulphonate	68156-01-4

## ● 015 DBT；二丁基錫化合物 / Dibutyltin (DBT) compounds

中文名稱	Substances	CAS 號碼
二丁基氧化錫	Dibutyltin oxide	818-08-6
二醋酸二丁基錫	Dibutyltin diacetate	1067-33-0
二月桂酸二丁基錫	Dibutyltin dilaurate	77-58-7
馬來酸二丁基錫	Dibutyltin maleate	16091-18-2
二丁基二氯化錫 (DBTC)	Dibutyltin dichloride (DBTC)	683-18-1
二丁基氫氧化硼 (DBB)	Dibutyltin hydrogen borate (DBB)	75113-37-0
其他二丁基錫化合物	Other Dibutyl Tins	-

● 016 DOT；二辛基錫化合物 / Dioctyltin (DOT) compounds

中文名稱	Substances	CAS 號碼
氧化二辛基錫	Dioctyltin oxide	870-08-6
二月桂酸二辛基錫 (DOTL)	Dioctyltin dilaurates (DOTL)	3648-18-8
馬來酸二辛基錫	Dioctyltin maleate	16091-18-2
二辛基二氯化錫	Dioctyltin dichloride	3542-36-7
2,2-[(二辛基亞錫)雙(硫代)]雙乙酸二異辛酯	Di(n-octyl)tinbis(isooctylthioglycolate)	26401-97-8
其他二辛基錫化合物	Other Dioctyl tins	-

● 021 鄰苯二甲酸酯類 / Phthalates

中文名稱	Substances	CAS 號碼
鄰苯二甲酸二異癸酯 (DIDP)	Diisodecyl phthalate (DIDP)	26761-40-0
鄰苯二甲酸二異壬酯 (DINP)	Diisononyl phthalate (DINP)	28553-12-0
鄰苯二甲酸二(2-甲氧基)乙酯 (DMEP)	Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8
鄰苯二甲酸二辛酯 (DnOP)	Di-n-octyl phthalate (DnOP)	117-84-0

● 023 氟族溫室氣體(HFC, PFC, SF6) / Fluorinated greenhouse gases (HFC, PFC, SF6)

PFC 類 / PFCs		
中文名稱	Substances	CAS 號碼
四氟化碳(四氟甲烷)	Carbon tetrafluoride (Perfluoromethane)	75-73-0
全氟乙烷(六氟乙烷)	Perfluoroethane (Hexafluoroethane)	76-16-4
八氟丙烷	Perfluoropropane (Octafluoropropane)	76-19-7
十氟丁烷	Perfluorobutane (Decafluorobutane)	355-25-9
十二氟戊烷	Perfluoropentane (Dodecafluoropentane)	678-26-2
十四氟己烷	Perfluorohexane (Tetradecafluorohexane)	355-42-0
八氟環丁烷	Perfluorocyclobutane	115-25-3
六氟化硫 (SF6)	Sulfur Hexafluoride (SF6)	2551-62-4

HFC 類 / HFCs		
中文名稱	Substances	CAS 號碼
三氟甲烷(HFC-23)	Trifluoromethane (HFC-23)	75-46-7
二氟甲烷(HFC-32)	Difluoromethane (HFC-32)	75-10-5
氟甲烷(HFC-41)	Methyl fluoride (HFC-41)	593-53-3
2H,3H-全氟戊烷(HFC-43-10mee)	2H,3H-Decafluoropentane (HFC-43-10mee)	138495-42-8
五氟乙烷(HFC-125)	Pentafluoroethane (HFC-125)	354-33-6

HFC 類 / HFCs		
中文名稱	Substances	CAS 號碼
1,1,1,2-四氟乙烷(HFC-134)	1,1,1,2-Tetrafluoroethane (HFC-134)	359-35-3
1,1,1,2-四氟乙烷(HFC-134a)	1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2
二氟乙烷	Difluoroethane	25497-28-3

中文名稱	Substances	CAS 號碼
1,1-二氟乙烷(HFC-152a)	1,1-Difluoroethane (HFC-152a)	75-37-6
1,2-二氟乙烷	1,2-Difluoroethane	624-72-6
三氟乙烷	Trifluoroethane	27987-06-0
1,1,2-三氟乙烷 (HFC-143)	1,1,2-Trifluoroethane (HFC-143)	430-66-0
1,1,1-三氟乙烷(HFC-143a)	1,1,1-Trifluoroethane (HFC-143a)	420-46-2
七氟丙烷 (HFC-227ea)	2H-Heptafluoropropane (HFC-227ea)	431-89-0
1,1,1,2,2,3,3-七氟丙烷	1,1,1,2,2,3,3-Heptafluoropropane	2252-84-8
1,1,2,2,3-六氟丙烷(HFC-236cb)	1,1,1,2,2,3-Hexafluoro-propane(HFC-236cb)	677-56-5
1,1,1,2,3,3-六氟丙烷(HFC-236ea)	1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	431-63-0
六氟丙烷	Hexafluoropropane	27070-61-7
1,1,1,3,3,3-六氟丙烷(HFC-236fa)	1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1
1,1,2,2,3-五氟丙烷 (HFC-245ca)	1,1,2,2,3-Pentafluoropropane (HFC-245ca)	679-86-7
1,1,1,3,3-五氟丙烷 (HFC-245fa)	1,1,1,3,3-Pentafluoropropane (HFC-245fa)	460-73-1
1,1,1,2,2-五氟丙烷	1,1,1,2,2-Pentafluoropropane	1814-88-6
1,1,1,3,3-五氟丙烷 (HFC-365mfc)	1,1,1,3,3-Pentafluorobutane (HFC-365mfc)	406-58-6

● 025 聯苯胺基物質/ Benzidine-based substances

中文名稱	Substances	CAS 號碼
4,4'-二氨基-2,2'-二甲基聯苯二鹽酸鹽	[1,1'-Biphenyl]-4,4'-diamine, dihydrochloride	531-85-1
直接紅 44	1-Naphthalenesulfonic acid, 8,8'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis[7-hydroxy-, disodium salt (C.I. Direct Red 44)	2302-97-8
靑啞黑 BH	2,7-Naphthalenedisulfonic acid, 5-amino-3-[[4'-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo][1,1'-biphenyl]-4-yl]azo]-4-hydroxy-, trisodium salt (C.I. Direct Blue 2)	2429-73-4
直接橙 8	Benzoic acid, 5-[[4'-[(1-amino-4-sulfo-2-naphthalenyl)azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, disodium salt (C.I. Direct Orange 8)	2429-79-0
直接棕 31	Benzoic acid, 5-[[4'-[[2,6-diamino-3-[[8-hydroxy-3,6-disulfo-7-[(4-sulfo-1-naphthalenyl)azo]-2-naphthalenyl]azo]-5-methylphenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, tetrasodium salt (C.I. Direct Brown 31)	2429-81-4
直接棕 2	Benzoic acid, 5-[[4'-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, disodium salt (C.I. Direct Brown 2)	2429-82-5
直接黑 4	2,7-Naphthalenedisulfonic acid, 4-amino-3-[[4'-[(2,4-diamino-5-methylphenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)-, disodium salt (Direct Black 4)	2429-83-6
直接紅 1	Benzoic acid, 5-[[4'-[(2-amino-8-hydroxy-6-sulfo-1-naphthalenyl)azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, disodium salt (C.I. Direct Red 1)	2429-84-7
直接棕 2	Benzoic acid, 5-[[4'-[[2,6-diamino-3-methyl-5-[(4-sulfophenyl)azo]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, disodium salt (C.I. Direct Brown 1:2)	2586-58-5
直接藍 6	2,7-Naphthalenedisulfonic acid, 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis[5-amino-4-hydroxy-, tetrasodium salt (C.I. Direct Blue 6)]	2602-46-2
直接棕 6	Benzoic acid, 5-[[4'-[[2,4-dihydroxy-3-[(4-sulfophenyl)azo]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, disodium salt (C.I. Direct Brown 6)	2893-80-3
直接紅 37	1,3-Naphthalenedisulfonic acid, 8-[[4'-[(4-ethoxyphenyl)azo][1,1'-biphenyl]-4-yl]azo]-7-hydroxy-, disodium salt (C.I. Direct Red 37)	3530-19-6
酸性紅 85	1,3-Naphthalenedisulfonic acid, 7-hydroxy-8-[[4'-[[4-[(4-methylphenyl) sulfonyl]oxy]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-, disodium salt (C.I. Acid Red 85)	3567-65-5

中文名稱	Substances	CAS 號碼
直接綠 1	2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[[4'-[(4-hydroxyphenyl)azo][1,1'-biphenyl]-4-yl]azo]-6-(phenylazo)-, disodium salt (C.I. Direct Green 1)	3626-28-6
直接棕 1	Benzoic acid, 5-[[4'-[[2,4-diamino-5-[(4-sulfophenyl)azo]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, disodium salt (C.I. Direct Brown 1)	3811-71-0
直接綠 6	2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-6-[[4'-[(4-hydroxyphenyl)azo][1,1'-biphenyl]-4-yl]azo]-3-[(4-nitrophenyl)azo]-, disodium salt (C.I. Direct Green 6)	4335-09-5
酸性黑 94	2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[[4'-[[4-hydroxy-2-[(2-methylphenyl)amino]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-6-[(4-sulfophenyl)azo]-, trisodium salt(C.I. Acid Black 94)	6358-80-1
直接棕 27	Benzoic acid, 5-[[4'-[[4-[(4-amino-7-sulfo-1-naphthalenyl)azo]-6-sulfo-1-naphthalenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-, trisodium salt (C.I. Direct Brow 27)	6360-29-8
直接棕 154	Benzoic acid, 5-[[4'-[[2,6-diamino-3-methyl-5-[(4-sulfophenyl)azo]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxy-3-methyl-, disodium salt (C.I. Direct Brown 154)	6360-54-9
直接棕 74	Benzoic acid, 3,3'-[[3,7-disulfo-1,5-naphthalenediyl]bis[azo(6-hydroxy-3,1-phenylene)azo[6(or7)-sulfo-4,1-naphthalenediyl]azo[1,1'-biphenyl]-4,4'-diylazo]]bis[6-hydroxy-, hexasodium salt (C.I. Direct Brown 74)	8014-91-3
直接棕 95	Cuprate(2-), [5-[[4'-[[2,6-dihydroxy-3-[(2-hydroxy-5-sulfophenyl)azo]phenyl]azo][1,1'-biphenyl]-4-yl]azo]-2-hydroxybenzoato(4-)]-, disodium salt (C.I. Direct Brown 95)	16071-86-6

● 030持續性有機污染物 Persistent Organic Pollutants (POPs)

中文名稱	Substances	CAS 號碼
阿特靈	Aldrin	-
可氣丹	Chlordanes	-
十氯酮	Chlordecone	-
滴滴涕	DDT Chlorophenothane	-
地特靈	Dieldrin	-
安殺芬	Endosulfan	115-29-7 959-98-8 33213-65-9
安特靈	Endrin	-
六氯丁二烯	Hexachlorobutadiene	87-68-3
三氯殺蟎醇	Kelthane	-
滅蟻靈	Mirex	-
五氯苯	Pentachlorobenzene	-
毒殺芬	Toxaphene	-
α-六氯環己烷	α-Hexachlorocyclohexane	-
β-六氯環己烷	β-Hexachlorocyclohexane	-
γ-六氯環己烷	γ-Hexachlorocyclohexane	-
五氯酚, 或五氯酚鹽或五氯酚酯	Pentachlorophenol, Pentachlorophenolsalts, Pentachlorophenolesters	-

### 3) 環境管理物質清單 D / Environment-related Substances List D

#### ● 銻及銻化合物 / Antimony and Antimony Compounds

中文名稱	Substances	CAS 號碼
銻 (金屬性)	Antimony (metallic)	7440-36-0
三氧化銻	Antimony trioxide	1309-64-4
五氧化二銻	Antimony pentoxide	1314-60-9
三氯化銻	Antimony trichloride	10025-91-9
銻酸鈉	Sodium antimonate	15432-85-6
其他銻化物	Other antimony compounds	-

#### ● 砷及砷化合物 / Arsenic and Arsenic Compounds

中文名稱	Substances	CAS 號碼
砷	Arsenic	7440-38-2
砷化鎵	Gallium arsenide	1303-00-0
砷酸鈣	Calcium arsenate	7778-44-1
亞砷酸鈣	Calcium arsenite	27152-57-4
五氧化二砷	Arsenic pentoxide	1303-28-2
三氧化二砷	Arsenic trioxide	1327-53-3
亞砷酸鉀	Potassium arsenite	10124-50-2
砷酸鉀	Potassium arsenate	7784-41-0
砷酸鉛	Lead arsenate	3687-31-8
其他砷化合物	Other arsenic compounds	-

#### ● 鈹及鈹化合物 / Beryllium and Beryllium Compounds

中文名稱	Substances	CAS 號碼
鈹	Beryllium	7440-41-7
鈹鋁合金	Beryllium-aluminum alloy	12770-50-2
氯化鈹	Beryllium chloride	7787-47-5
氟化鈹	Beryllium fluoride	7787-49-7
氫氧化鈹	Beryllium hydroxide	13327-32-7
氧化鈹	Beryllium oxide	1304-56-9
磷酸鈹	Beryllium phosphate	13598-15-7
硫酸鈹	Beryllium sulfate	13510-49-1
硫酸鈹四水合物	Beryllium sulfate tetrahydrate	7787-56-6
鈹礦石	Beryl ore	1302-52-9
其他鈹化合物	Other beryllium compounds	-

● **鎳及鎳化合物/ Nickel and Nickel Compounds**

中文名稱	Substances	CAS 號碼
鎳	Nickel	7440-02-0
氧化鎳	Nickel (II) oxide	1313-99-1
氯化鎳	Nickel (II) chloride	7718-54-9
六水合氯化鎳	Nickel (II) chloride, hexahydrate	7791-20-0
硫酸鎳	Nickel (II) sulfate	7786-81-4
六水硫酸鎳	Nickel (II) sulfate, hexahydrate	10101-97-0
硫酸鎳七水合物	Nickel (II) sulfate, heptahydrate	10101-98-1
鈦鎳黃	Antimony nickel titanium oxide yellow	8007-18-9
	Nickel niobium titanium yellow	68611-43-8
鈷鈦鎳	Obalt titanate green spinel	68186-85-6

● **硒及硒化合物 / Selenium and Selenium Compounds**

中文名稱	Substances	CAS 號碼
硒	Selenium	7782-49-2
硒化氫	Hydrogen selenide	7783-07-5
硒化鈉	Sodium selenide	1313-85-5
氧化硒	Selenium dioxide	7446-08-4
硒酸鈉	Sodium selenate	10112-94-4
乙烷硒化物	Dimethyl selenide	593-79-3
二氧化硒	Selenium oxide	12640-89-0
其他硒化合物	Other selenium compounds	-

● **高氯酸鹽化合物 / Perchlorate Compounds**

中文名稱	Substances	CAS 號碼
過氯酸銨	Ammonium perchlorate	7790-98-9
高氯酸鉀	Potassium perchlorate	7778-74-7
高氯酸鈉	Sodium perchlorate	7601-89-0
高氯酸鋰	Lithium perchlorate	7791-03-9
高氯酸鋰 (三水)	Lithium perchlorate, trihydrate	13453-78-6
其他高氯酸鹽化合物	Other perchlorate compounds	-

● **鹵化材料 (例如溴化阻燃劑 (BFR), 氯化阻燃劑 (CFR), 增塑劑和聚氯乙烯 (PVC) / Halogenated Materials (e.g. Brominated Flame Retardants (BFRs), Chlorinated Flame Retardants (CFRs), plasticizers, and Polyvinylchloride (PVC))**

中文名稱	Substances	CAS 號碼
ISO1043-4 編號 FR(14) [脂肪族/脂環式含溴化合物] 符合此表示方法的溴化阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]	-

中文名稱	Substances	CAS 號碼
ISO1043-4 編號 FR(15) [脂肪族/脂環式含溴化合物和銻化合物的結合物] 符合此表示方法的溴化阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]	-
ISO1043-4 編號 FR(16) [芳香族含溴化合物(溴化二苯及溴化二苯醚除外)] 符合此表示方法的溴化阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenylether and biphenyls]	-
ISO1043-4 編號 FR(17) [芳香族含溴化合物(溴化二苯及溴化二苯醚除外)和銻化合物的結合物] 符合此表示方法的溴化阻燃劑	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]	-
ISO1043-4 編號 FR(22) [脂肪族/脂環式氯化及溴化物] 符合此表示方法的溴化阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]	-
ISO1043-4 編號 FR(42) [含溴有機磷化合物] 符合此表示方法的溴化阻燃劑	Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorus compounds]	-
聚(2,6-二溴次苯基環氧)	Poly(2,6-dibromo-phenylene oxide)	69882-11-7
四十溴-p-二苯氧苯	Tetra-decabromo-diphenoxy-benzene	58965-66-5
1,2-雙(2,4,6-三溴苯氧基)乙烷	1,2-Bis(2,4,6-tribromo-phenoxy) ethane	37853-59-1
3,5,3',5'-四溴雙酚 A (TBBA)	3,5,3',5'-Tetrabromo-bisphenol A (TBBA)	79-94-7
TBBA (結構未特定)	TBBA, unspecified	30496-13-0
TBBA (表氯醇低聚物)	TBBA-epichlorhydrin oligomer	40039-93-8
TBBA (TBBA-環氧甘油醚低聚物)	TBBA-TBBA-diglycidyl-ether oligomer	70682-74-5
TBBA (碳酸低聚物)	TBBA carbonate oligomer	28906-13-0
BC-52 四溴雙酚 A (TBBA 碳酸低聚物, 苯氧端帽)	TBBA carbonate oligomer, phenoxy end capped	94334-64-2
BC-58 四溴雙酚 A (TBBA 碳酸低聚物, 2,4,6-三溴酚終止)	TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated	71342-77-3
TBBA 雙酚 A 碳醯氯聚合物	TBBA-bisphenol A-phosgene polymer	32844-27-2
溴化環氧樹脂, 三溴酚端帽	Brominated epoxy resin end-capped with tribromophenol	139638-58-7
溴化環氧樹脂, 三溴酚端帽	Brominated epoxy resin end-capped with tribromophenol	135229-48-0
TBBA-(2,3-二溴丙醚)	TBBA-(2,3-dibromo-propyl-ether)	21850-44-2
TBBA 雙-(2-羥乙醚)	TBBA bis-(2-hydroxy-ethyl-ether)	4162-45-2
TBBA 雙(烯丙醚)	TBBA-bis-(allyl-ether)	25327-89-3
TBBA 二甲基醚	TBBA-dimethyl-ether	37853-61-5
四溴雙酚 S	Tetrabromo-bisphenol S	39635-79-5
TBBS 雙-(2,3-二溴丙醚)	TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1



中文名稱	Substances	CAS 號碼
2,4-二溴酚	2,4-Dibromo-phenol	615-58-7
2,4,6-三溴酚	2,4,6-tribromo-phenol	118-79-6
五溴酚	Pentabromo-phenol	608-71-9
2,4,6-三溴苯烯丙醚	2,4,6-Tribromo-phenyl-alltl-ether	3278-89-5
三溴苯烯丙醚 (結構未特定)	Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
雙(甲基)四溴鄰苯二甲酸酯	Bis(methyl)tetrabromo-phthalate	55481-60-2
四溴鄰苯二甲酸雙(2-乙基己基)	Bis(2-ethylhexyl)tetrabromo-phthalate	26040-51-7
2-羥基-丙基-2-(2-羥基-乙氧基)-乙基-TBP	2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP	20566-35-2
TBPA, 乙二醇-氧化丙烯酯	TBPA, glycol-and propylene-oxide esters	75790-69-1
N,N'-乙烯-雙-(四溴-酞醯亞胺)	N, N'-Ethylene -bis-(tetrabromo-phthalimide)	32588-76-4
乙烯-雙(5,6 二溴降冰片烷-2,3-乙二胺)	Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)	52907-07-0
2,3-二溴-2-丁烯-1,4-二醇	2,3-Dibromo-2-butene-1,4-diol	3234-02-4
二溴新戊烷基乙二醇	Dibromo-neopentyl-glycol	3296-90-0
2,3-雙溴丙醇	Dibromo-propanol	96-13-9
三溴新戊烷基乙醇	Tribromo-neopentyl-alcohol	36483-57-5
聚三溴苯乙烯	Poly tribromo-styrene	57137-10-7
三溴苯乙烯	Tribromo-styrene	61368-34-1
二溴苯乙烯, PP 接枝物	Dibromo-styrene grafted PP	171091-06-8
聚二溴苯乙烯	Poly-dibromo-styrene	31780-26-4
溴化/氯化石蠟類	Bromo-/Chloro-paraffins	68955-41-9
溴化/氯化 $\alpha$ 烯烴	Bromo-/Chloro-alpha-olefin	82600-56-4
溴代乙烯	Vinylbromide	593-60-2
三(2,3-二溴丙基)異氰尿酸酯	Tris-(2,3-dibromo-propyl)-isocyanurate	52434-90-9
三(2,4-二溴苯)磷酸鹽	Tris(2,4-Dibromo-phenyl) phosphate	49690-63-3
三(三溴-新戊烷基)磷酸鹽	Tris(tribromo-neopentyl) phosphate	19186-97-1
氯、溴化磷酸酯	Chlorinated and brominated phosphate ester	125997-20-8
五溴甲苯	Pentabromo-toluene	87-83-2
五溴-溴化苄	Pentabromo-benzyl bromide	38521-51-6
溴化 1,3-丁二烯均聚物	1,3-Butadiene homopolymer, brominated	68441-46-3
五溴苄基丙烯酸酯單體	Pentabromo-benzyl-acrylate, monomer	59447-55-1
五溴苄基丙烯酸酯聚合物	Pentabromo-benzyl-acrylate, polymer	59447-57-3
十溴二苯乙烷	Decabromo-diphenyl-ethane	84852-53-9
三溴雙苯順丁烯二醯亞胺	Tribromo-bisphenyl-maleinimide	59789-51-4
四溴環辛烷	Tetrabromo-chyclo-octane	31454-48-5

中文名稱	Substances	CAS 號碼
1,2-二溴-4-(1,2-二溴甲基)環己烷	1,2-Dibromo-4-(1,2 dibromo-methyl)-cyclo-hexane	3322-93-8
TBPA Na 鹽	TBPA Na salt	25357-79-3
四溴鄰苯二甲酸酐	Tetrabromo phthalic-anhydride	632-79-1
八溴-1,1,3-三甲基-1-苯基茛滿 (FR-1808)	Octabromo-1,1,3-trimethyl-1-phenylindan (FR-1808)	155613-93-7
溴化三甲基苯丙種異構體	Brominated trimethylphenyl-lindane	59789-51-4
1,2,5,6,9,10-六溴環十二烷 (HBCD)	Hexabromo-cyclo-dodecane (HBCD), unspecified	3194-55-6
其他溴系阻燃劑	Other Brominated Flame Retardants	-
中文名稱	Substances	CAS 號碼
聚氯乙烯 (PVC)	Polyvinyl chloride (PVC)	9002-86-2
中文名稱	Substances	CAS 號碼
2,2-二(氯甲基)-1,3-丙二醇 双[双(2-氯乙基)磷酸酯]	2,2-Bis(chloromethyl)-1,3-propanediol bis[bis(2-chloroethyl)phosphate]	38051-10-4
磷酸三(1-氯-2-丙基)酯	Tris(1-chloro-2-propyl) phosphate	13674-84-5
其他氯化系阻燃劑	Other Chlorinated Flame Retardants	-

## RoHS 指令排外條款

排外項目		適用範圍及日期
3	特殊用途之冷陰極螢光燈 (CCFL) 及外部電極螢光燈 (EEFL)，所使用的汞含量不得超過 (每個燈管):	除外條款到期後: 1000ppm
3(a)	較短長度 (≤ 500 mm)	3.5 mg
3(b)	中等長度 (> 500 mm and ≤ 1 500 mm)	5 mg
3(c)	較長長度 (> 1 500 mm)	13 mg
5(b)	螢光管中所含的鉛不得超過其重量之 0.2%	
6(a)-I	鉛用於加工用途之鋼材，含量最高可達 0.35%，用於批量熱浸鍍鋅鋼材，含鉛量最高可達 0.2%	到期日至 2021 年 7 月 21 日
6(b)-I	來源為回收含鉛鋁廢料時，其鉛含量最高可達 0.4%	到期日至 2021 年 7 月 21 日
6(b)-II	鉛用於加工用途之鋁合金，含量最高可達 0.4%	到期日至 2021 年 5 月 18 日
6(c)	銅合金中所含的鉛，最高可達 4%	到期日至 2021 年 7 月 21 日
7(a)	高熔點類之錐錫可含鉛 (如鉛為基底的合金，其鉛含量大於 85%)	到期日至 2021 年 7 月 21 日
7(c)-I	鉛用於電器及電子元件中之玻璃或陶瓷 (介電陶瓷電容除外電元件或者玻璃/陶瓷複合材料)	到期日至 2021 年 7 月 21 日
7(c)-II	額定電壓為 125 V AC or 250 V DC 或者更高之介電陶瓷電容中所含的鉛	到期日至 2021 年 7 月 21 日
8(b)-I	鎘及其化合物可用於電子接點。 - 斷路器 Circuit Breaker - 熱感控制器 thermal sensing controls - 馬達過熱保護裝置	到期日至 2021 年 7 月 21 日

排外項目		適用範圍及日期
	(不包含密封式過熱保護裝置) thermal motor protectors - 交流電開關額定值為當交流電壓為 250V 或更高時，電流達到 6A 或 更高。當交流電壓為 125V 或更高時，電流達到 12A 或 更高。 - 當直流電壓為 18 V 或以上時，直流電開關額定電流為 20 A 或更高。 - 用於電源頻率≥200Hz 的開關。	
13(a)	光學應用之玻璃中可含鉛。	到期日至 2021 年 7 月 21 日
13(b)-III	用於反射率標準釉料中的鉛和鎘。	到期日至 2021 年 7 月 21 日
15a	用於積體電路覆晶封裝流程中，為連接半導體晶片及載體間，以完成電力連結的鋅錫可含鉛。 - 大於或等於 90nm 半導體技術製程。 - 單個晶圓尺寸大於或等於 300 mm <sup>2</sup> 的半導體技術製程。 - 以大於或等於 300 mm <sup>2</sup> 的晶圓堆疊封裝(stacked die packages)或大於或等於 300 mm <sup>2</sup> 的矽載板 (silicon interposers)。	到期日至 2021 年 7 月 21 日

## RoHS Directive for exemptions

Exemption		Scope and dates of applicability
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	When exemption expires: 1000ppm
3(a)	Short length ( $\leq 500$ mm)	3,5 mg
3(b)	Medium length ( $> 500$ mm and $\leq 1\ 500$ mm)	5 mg
3(c)	Long length ( $> 1\ 500$ mm)	13 mg
5(b)	Lead in glass of fluorescent tubes not exceeding 0.2 % by weight	
6(a)-I	Lead as an alloying element in steel for machining purposes containing up to 0.35 % lead by weight and in batch hot dip galvanized steel components containing up to 0.2% lead by weight.	Expires on 21 July 2021
6(b)-I	Lead as an alloying element in aluminium containing up to 0.4 % lead by weight, provided it stems from lead-bearing aluminium scrap recycling.	Expires on 21 July 2021
6(b)-II	Lead as an alloying element in aluminium for machining purposes with a lead content up to 0.4% by weight.	Expires on 18 May 2021
6(c)	Copper alloy containing up to 4 % lead by weight	Expires on 21 July 2021
7(a)	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)	Expires on 21 July 2021



Exemption		Scope and dates of applicability
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	Expires on 21 July 2021
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Expires on 21 July 2021
8(b)-I	Cadmium and its compounds in electrical contacts used in: - circuit breakers, - thermal sensing controls, - thermal motor protectors (excluding hermetic thermal motor protectors), - AC switches rated at: - 6 A and more at 250 V AC and more, or - 12 A and more at 125 V AC and more, - DC switches rated at 20 A and more at 18 V DC and more, - switches for use at voltage supply frequency $\geq 200$ Hz	Expires on 21 July 2021
13(a)	Lead in white glasses used for optical applications	Expires on 21 July 2021
13(b)-III	Cadmium and lead in glazes used for reflectance standards.	Expires on 21 July 2021
15(a)	Lead in solders to complete a viable electrical connection between the semiconductor die and carrier within integrated circuit flip chip packages where at least one of the following criteria applies: <ul style="list-style-type: none"> <li>• a semiconductor technology node of 90 nm or larger;</li> <li>• a single die of 300 mm<sup>2</sup> or larger in any semiconductor technology node;</li> <li>• stacked die packages with die of 300 mm<sup>2</sup> or larger, or silicon interposers of 300 mm<sup>2</sup> or larger.</li> </ul>	Expires on 21 July 2021