

## GENERAL SPECIFICATION FOR THE ENVIRONMENT (GSE)

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## 1. Purpose

- 1.1. This specification establishes Agilent Technologies' (Agilent's) general requirements for purchased parts, components, materials and products that are incorporated into Agilent products.
- 1.2. The requirements described in this specification represent restrictions imposed on Agilent's end products, which need to be reflected in the materials that constitute those products. The restrictions related to Agilent products may be different than those imposed on the individual parts and components, and in some cases, exceed regulatory requirements.

## 2. Scope

- 1.1. This specification provides Agilent's general requirements for restricting or prohibiting certain substances as constituents of parts, components, and materials in products and packaging purchased by Agilent worldwide.
- 1.2. If a supplier believes that components or assemblies they are supplying to Agilent do not conform to the General Specification for the Environment (GSE), they should send an e-mail to [gse\\_inquiry@agilent.com](mailto:gse_inquiry@agilent.com) and copy their Agilent Buyer. The e-mail should detail the specific non-conformity and the Agilent/manufacturer part numbers affected.
- 1.3. Excepting Ozone Depleting Substances (ODS), this specification does not apply to substances used in the process of manufacturing parts, component materials, or products sold to Agilent.
- 1.4. This specification also provides Agilent's general requirements for transport or recycling/disposal marking and labeling, and classification or registration requirements for Agilent purchased parts, components, materials and products.
- 1.5. This specification is not intended to be a listing of all product content limitations or restrictions that may be established as a matter of law. Seller's compliance with this specification does not relieve or diminish Seller's obligation to comply with all applicable laws.
  - 2.5.1. Precedence: Should a conflict occur between this specification and an Agilent family or individual part specification, the Agilent family or individual part specification shall prevail.
  - 2.5.2. Exception: Legal and/or regulatory requirements for the countries where these purchased parts, components, and products are to be used take precedence over this specification.
- 1.6. This specification is in addition to, and does not in any way limit or supersede, any other product specifications that may be established by Agilent.

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### 3. Environmental Requirements

1.1. In this specification, environmental requirements are defined for the following:

- Product content and ODS use restrictions
- Battery content restrictions
- Packaging content restrictions
- Phytosanitary measures for solid wood packaging materials
- Product labeling and marking requirements
- Product end of life labeling requirements
- Chemical registration requirements

### 4. Product Content Restrictions

1.1. The following substances in section 5 are *prohibited* or *restricted* for use in raw materials, parts, components, or products above the thresholds defined below. A GSE threshold is the maximum concentration level at which the presence of a substance can be tolerated per homogeneous material unless indicated otherwise. Restrictions are divided into two categories: General Restrictions and Specific Applications.

- For the category of General Restrictions, the substances are prohibited or restricted in any application.
- For the category of Specific Applications, substances are only prohibited or restricted for use in those applications listed in the table.

These product content restrictions do not apply to chemicals in calibration, analytical standards or bio reagents and other chemical supplies like pure substances and mixtures.

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## 5. General Restrictions

The following substances must not be used in any application above the threshold. Unless indicated otherwise, the thresholds are defined per homogeneous material.

### **TSCA PBT substances:**

Substances in the “Regulation of Persistent, Bioaccumulative, and Toxic Chemicals Under TSCA Section 6(h)” present in products/parts/articles above the regulated concentration limits must be reported back to Agilent Technologies. Notice that new substances will be added yearly!

Link: <https://www.federalregister.gov/documents/search#advanced>

### **REACH SVHC substances:**

Substances included on the Candidate List of substances of very high concern for Authorisation (Acronym: SVHC list) above 0.1% (w/w) in any articles in a product/part/article must be reported back to Agilent Technologies. Notice that new substances will be added twice a year!

Link: <https://echa.europa.eu/candidate-list-table>

Furthermore the following substance restrictions applies:

Substance	Example Uses	Threshold
Asbestos/Asbestos Materials	Insulating material, plastic parts	Must not be present
Azocolorants and Azodyes	Azodyes	< 0.003% by part weight
Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene	Lubricating agent; lubricant additive (antioxidant/corrosion inhibitor/tarnish inhibitor/scavenger/antiscaling agent), mould release agent; organic chemical for industrial use	Must not be present
Benzene	For styrene, which is used to make polymers and plastics; for phenol, which is used for resins and adhesives; for types of rubbers, lubricants, dyes	Must not be present
Dimethylfumarate (DMFu)	Anti-mould agent and can be found in the articles or in sachets containing mouldproof substances	< 0.00001% by part weight

<b>Substance</b>	<b>Example Uses</b>	<b>Threshold</b>
Ozone Depleting Substances (ODS)	Class I: Coolant, propellant, refrigerants; Class II: Not expected, but historically HCFCs were used as substitutes for CFCs	Must not be present and none used in the production process. See Note 1 at end of table.
Pentachlorophenol (PCP)	Biocide (Insecticide and fungicide), used as wood preservative. See also section 8	No intentionally added content
Pentadecafluorooctanoic acid (PFOA) and individual salts and esters of PFOA	Surfactant, used in coatings, metal plating/surfaces, used in Semiconductor industries	< 0.1% by part weight
Perfluoro decanoic acid (PFDA) and Na and NH <sub>4</sub> salts	Surfactant, foaming agents	< 0.1% by part weight
Perfluorhexane-1-sulphonic acid (PFHxS) & salts	Surfactant and monomer in production of Fluoropolymers and stain resistant coatings	< 0.1% by part weight
Perfluorononan-1-oic-acid and its sodium and ammonium salts	Processing aid, but PFNA is also used as lubricating oil additive, surfactant for fire extinguishers, cleaning agent, textile antifouling finishing agent, polishing surfactant, waterproofing agents and in liquid crystal display panels	< 0.1% by part weight
Perfluorooctane sulfonate (PFOS)	Antistatic agent for films and plastics , photolithographic chemical in the semiconductor industries	Must not be present
Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)	Adhesives, paints, printing inks, plastics, additive or sealing fillers	Must not be present

Note 1: The USA imposes an excise tax on inventories of Ozone Depleting Chemicals (ODCs) and imported products manufactured with ODCs. If requested, Agilent requires suppliers to certify that ODCs are not used in manufacturing.

## 6. Specific Applications

The following substances must not be used in the applications listed below above the threshold except in listed application exemptions. Unless indicated otherwise, the thresholds are defined per homogeneous material. In case of a conflict, application specific thresholds prevail over the threshold from general restrictions only for the listed applications.

Substances	Restricted Application	Threshold (Not to Exceed)	Allowed exemptions:
Aluminosilicate Refractory Ceramic Fibres	Insulation material and all other applications	< 0.1% by part weight	Insulation Material in oven assemblies for analytical instruments
Cadmium and its compounds	All applications, e.g. dyes, pigments, paints/enamels (excepting safety warnings), plastic stabilizer (e.g. electric cables), anti-corrosion coating finish and all other uses	<0.01%	see Appendix C
Fluorinated Greenhouse Gases (F-Gases)	Non-refillable containers for service, non-confined direct evaporations systems, foams, fire protection equipment	Must not be present	use of R134a in refrigerating equipment integrated with analytical instruments (e.g. LC)
Hexachloroethane	Manufacturing or processing of non-ferrous metals	Must not be present and none used in the production process	(none)
Inorganic ammonium salts	Cellulose insulation mixtures/articles	Must not be present	(none)
Lead and its compounds	Paints	< 0.01%	(none)
	PVC stabilizer in cable jackets	< 0.03%	(none)
	All other applications	< 0.1%	see Appendix C

Substances	Restricted Application	Threshold (Not to Exceed)	Allowed exemptions:
Mercury and its compounds	All applications, e.g. contact point material, pigment, anti-corrosion, switches, high-efficiency phosphor, mercury-containing measuring devices, and all other uses (see also Labeling Requirements section 9.3)	Must not be present	see Appendix C

## 7. Battery Content Restrictions

**1.1.** The following substances are prohibited or restricted for use in batteries. In case of a conflict, battery-specific thresholds from this section prevail over the thresholds from general restrictions or specific applications for the listed applicable battery types.

Substance	Applicable Batteries	Threshold (Not to Exceed)
Cadmium	Alkaline, Zinc-manganese, Zinc-carbon, or Nickel Cadmium and all other batteries	
Lead	Alkaline, Zinc-manganese, Zinc-carbon batteries	0.004% by battery weight
Mercury and its compounds	Alkaline, Zinc-Manganese, Zinc-Carbon, Mercuric Oxide batteries	Must not be present
	All others	5 ppm by weight in homogenous material
Perchlorates	Lithium batteries; coin cell batteries	0.6 ppm by battery weight

**1.2.** All lithium metal and lithium ion cells or batteries must meet the requirements of each test in the current UN Manual of Tests and Criteria, Part III, subsection 38.3, in addition to any additional requirements specified in the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR), the International Air Transport Association (IATA), the International Maritime Dangerous Good Code (IMDG), and the Hazardous Materials Regulations of the United States Department of Transportation (49CFR). Upon request vendor will provide a copy of the specific tests results should Agilent be required to supply it to local authorities.

## 8. Packaging Content Restrictions

**1.1.** The following substances (see additional details in Appendix B) are prohibited for use in packaging materials purchased by Agilent and used to package the products Agilent sells. In case of a conflict, packaging materials specific thresholds from this section prevail over the thresholds from general restrictions, specific applications or battery restrictions but only for the listed packaging applications.

<b>Substance</b>	<b>Restricted Application</b>	<b>Threshold</b> (Not to Exceed)
Arsenic Compounds	In wooden packaging and packaging materials	Must not be present
Cadmium, Chromium VI (Hexavalent Chromium) Compounds, Lead and Mercury	Packaging, packaging materials and packaging inks	Must not be present. Incidental presence of these substances not to exceed a total sum concentration of 100 ppm
Cobalt dichloride	In packaging materials (e.g. as moisture indicator)	Must not be present
Ozone depleting substances CFCs and HFCs	Foaming agent	Must not be present

## 9. Phytosanitary Measures for Solid Wood Packaging Materials

The following requirement applies to packaging materials purchased by Agilent and used to package the products Agilent sells. Packaging wood shall be free from bark, insects and damage caused by them. Solid Wood Packaging Materials shall be heat treated or kiln dried to a minimum core temperature of 56°C for at least 30 minutes in a closed chamber or kiln, which has been tested, evaluated and approved officially for this purpose. In addition, the susceptible wood shall display an officially approved heat treated or kiln dried marking enabling the identification of where and by whom the above treatment has been carried out. A logo or mark, officially endorsed by the NPPO (National Plant Protection Organization) of the country from which the wood packaging materials originate must be permanently affixed to each unit of wood packaging material, and in a location that will remain visible and obvious when packaging is used for shipment of Agilent product(s). Fumigation, Chemical Pressure Impregnation (CPI) or other chemical means are not to be used.



## 10. Product Labeling and Marking Requirements

- 1.1. Battery Labeling Requirements:** Batteries, rechargeable consumer products, and their packaging must have a durable label with the symbol(s) and wording according to the requirements specified in Appendix A. Information should be supplied with products containing a battery to identify the nature of the battery. Products with user-removable batteries should be supplied with information on the safe insertion and removal of the batteries.
- 1.2. Battery Declaration of Conformity Requirements:** Batteries, including those contained in parts, components and products, must comply with the China battery registration requirements for no mercury content. A “Suppliers' Declaration of conformity” issued by the battery manufacturer and an MSDS must be provided when requested.
- 1.3. Mercury Product Labeling Requirements:** Removable mercury lamps, as well as products containing mercury lamps, must be labeled in accordance with local regulatory requirements.<sup>1</sup>
- 1.4. Paper and Plastic Packaging Labeling Requirements:** All suppliers of paper and plastic packaging materials must ensure that the material is identified, marked and labeled. Refer to Appendix B.
- 1.5. Packaging Declaration of Conformity Requirements:** Packaging suppliers must provide a Declaration of Conformity regarding the requirements described in section 6.1 when requested.
- 1.6. Product Information and Labeling Requirements:** Agilent requires Suppliers to comply with the Chinese Administrative Measures for the Restriction of Hazardous Substances in Electrical and Electronic Products. Suppliers to Agilent are responsible for ensuring such goods sold and shipped to China meet the information and labeling requirements, including the following: (1) reflect the required product label (which in most cases will include an EFUP or Environmental Friendly Use Period number), (2) reflect the required toxic/hazardous substance table in the product manual or shipment insert which accompanies the product, and (3) reflect the date of manufacture. For further details or questions contact your Agilent representative.
- 1.7. Product End of Life Labeling Requirements:** All electrical and electronic products requiring the European CE marking must also have the crossed-out wheeled bin label with bar.



<sup>1</sup> Localization requirements are applicable to items in this section and will be communicated in the purchase contract, in accordance with Section 2.5 of this specification.

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## 11. Chemical Registration Requirements

- 1.1.** Each chemical substance contained in parts, components, materials and products sold to Agilent must comply with chemical registration and pre-manufacture notification requirements in those countries that have enacted such requirements (including but not limited to: Australia, Canada, China, Japan, South Korea, Switzerland, the United States, and the countries of the European Union). This is in order to permit import and sale of the parts, components, materials and products sold to Agilent in all of these countries.

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## 12. Definitions

**ABS** – Acrylonitrile Butadiene Styrene

**CFC** – Chlorinated Fluorocarbons

**DBDPO** - decabromodiphenyl oxide (a flame retardant)

**European CE Marking** – a product marking that specifies compliance to specific European Union Directives

**HFC** – Halogenated Fluorocarbons

**HIPS** – High Impact Polystyrene

**Homogeneous Material** – a material that cannot be mechanically disjoined into different materials

**Localization Issues** - compliance strategies that require “local” marking, labeling or documentation will generally be applied to the final product, not to the direct material purchase.

**MSDS** – Materials Safety Data Sheet

**Must Not Be Present** - the material shall not be intentionally added.

**OBDPO** - octabromodiphenyl oxide (a flame retardant)

**ODS/ODC** – Ozone Depleting Substance, synonym to ODC; Ozone Depleting Compounds, synonym to ODS

**Packaging Systems** – consists of all packaging components including cushioning material, plastic materials, paperboard, corrugated containers and wood crate systems, as well as inks, dyes and labels used for marking.

**Parts per Million (ppm)** - used to express concentration. The ppm is 1,000,000 x mass substance / mass of the homogeneous material. Concentrations are unit-less, for example 100 ppm = 0.01% = 100 mg/kg.

**PeBDPO** - pentabromodiphenyl oxide (a flame retardant)

**Prohibited** - not allowed

**PVC** – Polyvinyl Chloride
















**Restricted** – allowed in limited quantities

**Suppliers’ Declaration of Conformity** – a declaration made by an Agilent supplier that the product purchased by Agilent complies with an established list of requirements and standards.

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## APPENDIX A. Labeling Requirements for Batteries, Consumer Products Containing Batteries, and their Packaging

As defined in Section 8.1, all Batteries, rechargeable consumer products, and their packaging must have the markings defined in the following table and subsequent requirements.

PRODUCT TYPE	WORLDWIDE SYMBOL <sup>2</sup>	WORDING ON LABEL <sup>2</sup>
Alkaline batteries	 无 Low Mercury  廢電池請回收	<ul style="list-style-type: none"> <li>- Manufacturer's name and address</li> <li>- Either Chinese Low Mercury or Mercury Free character</li> <li>- 无汞碱性电池</li> </ul>
Lead-acid (sealed) batteries and their packaging	 廢電池請回收  Pb  Pb	<ul style="list-style-type: none"> <li>- Manufacturer's name and address</li> <li>- "BATTERY MUST BE RECYCLED"</li> <li>- "NON-SPILLABLE" OR "NON-SPILLABLE BATTERY"</li> <li>- "Pb" see Note 1</li> </ul>
Lithium Metal cells and batteries	 廢電池請回收 	<ul style="list-style-type: none"> <li>- Manufacturer's name and address</li> <li>- Lithium or , Lithium Metal</li> <li>- Watt Hr</li> </ul>
Lithium Ion cells and batteries	 廢電池請回收  Li-ion 	<ul style="list-style-type: none"> <li>- Manufacturer's name and address</li> <li>- Lithium Ion</li> <li>- Watt Hr</li> <li>- See Notes 2, 3 4</li> </ul>
Nickel metal hydride batteries	 廢電池請回收  Ni-MH 	<ul style="list-style-type: none"> <li>- Manufacturer's names and address</li> <li>- "CONTAINS NICKEL METAL HYDRIDE (NiMH) BATTERY"</li> <li>- Must be recycled or disposed of properly.</li> </ul>
Rechargeable consumer products containing not easily removable sealed lead acid batteries	 Pb  Pb	<ul style="list-style-type: none"> <li>- Manufacturer's name and address</li> <li>- "CONTAINS SEALED LEAD BATTERY. BATTERY MUST BE RECYCLED."</li> <li>- "Pb" see Note 1.</li> </ul>

Note 1 - The chemical symbol "Pb" under the crossed-out wheeled bin is required on all batteries, accumulators and button cells containing more than 0.004% lead by weight.

Note 2 - Lithium ion cells Watt-hour (Wh) rating must be 20 Wh or less.

Note 3 - Lithium ion batteries or battery packs Watt-hour (Wh) rating must be 100 Wh or less. Note 4 – Lithium ion batteries or battery packs must be marked with the Watt-hour (Wh) rating on the outside case.

<sup>2</sup> Localization requirements are applicable to items in this section and will be communicated in the purchase contract, in accordance with Section 2.5 of this specification.

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**Additional marking requirements for rechargeable - EU Capacity Labeling**

All portable rechargeable batteries intended to be replaced by the end user, either standalone cells or battery packs, except for lead-acid, must have their capacity in milliamp hours on the label expressed as an integer using the abbreviation ‘mAh’. Lead-acid batteries intended to be replaced by the end user must have their capacity in amp hours on the label expressed as a decimal number with one digit using ‘Ah’.

**Text size for battery packs:**

- For battery packs where the largest side is below 70 cm<sup>2</sup>, the text shall have a minimum size of 1,0 × 5,0 mm (H × L).
- For battery packs where the largest side is equal to or above 70 cm<sup>2</sup>, the text shall have a minimum size of 2,0 × 5,0 mm (H × L).
- The label shall be located only on the external housing, not on each individual cell inside the housing.
- Text size for individual cells, except button cells:
- The text shall have a minimum size of 1,0 × 5,0 mm (H × L).
- Applies to batteries and accumulators sold without packaging
- The label shall be located on the battery or accumulator itself.

For batteries sold with packaging, the capacity labels must also be located on the packaging.

**Additional marking requirements for non-rechargeable batteries (all chemistries)**

- Battery manufacturer brand name, Model designation, Expiration date (month/yr), Country of origin

**Product End of Life Labeling Size Requirements**

**Square batteries**

- Crossed-out wheeled bin label must cover 3% of the batteries largest side area, maximum size of 5cm X 5cm

**Cylindrical Batteries**

- Crossed-out wheeled bin label must cover 3% or half of each battery’s side area, maximum size of 5cm X 5cm

**Small Batteries (sold separately)**

- Where the crossed-out wheeled bin label applied to the package must be smaller than 0.5cm X 0.5cm, a separate 1cm X 1cm mark must be printed on the battery package or shipping package

**Battery Indication Type Marks below the Wheeled Bin**

- Marks must be at least one-quarter the size of the crossed-out wheeled bin label

**Symbol Color**

- Color shall be as displayed in the table above or black and white

**Durability**

All marks and labels must be clear and durable.

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## APPENDIX B. Packaging Material Requirements

Packaging and packaging materials shall be marked in accordance with the following guidance. Additional restrictions identified in the GSE are also applicable to Agilent Packaging Materials including but not limited to Restrictions in Packaging Section 6.0 and applicable requirements for wood packaging identified in Section 7.0. This requirement applies to all primary, secondary and tertiary packaging for products, parts, subassemblies, materials and supplies obtained by Agilent Technologies for incorporation or distribution to Agilent customers.

The objective of these stated requirements is to ensure that the choice of packaging materials used is recyclable, including cushioning material, plastic materials, corrugated containers and wood crate systems. Suppliers are discouraged from using permanent glues or adhesives to attach various materials. This applies to molded and fabricated cushioning material, plastic film, bagging materials, paperboard/corrugated fiberboard and wooden crates.

**Plastic Material Coding Identification:** For materials that are commonly used in packaging systems, the table below provides the applicable coding that is required to be permanently embossed, marked or labeled on all components of the packaging system. Symbols must meet minimum sizing requirements. Smaller identification symbols are permitted when the part or unit size does not allow the minimum size to be placed on the unit or part. The identification marking and symbol must be placed on the item either on the bottom or other conspicuous location and must be durable, legible and clearly visible. Capital letters must be used for all text.

**Plastic codes and corresponding abbreviation code names**

Name of plastic	Polyester	High-Density Polyethylene	Polyvinyl Chloride	Low-Density Polyethylene	Polypropylene	Polystyrene	Others
Plastic code	01	02	03	04	05	06	07
Abbreviation code name	PET	HDPE	PVC	LDPE	PP	PS	Others



Example of the marking for plastic recyclable packaging

**Paperboard and Corrugated Fiberboard:** Regarding the Paper Packaging Material Codes according to National Standard of the People's Republic of China, GB/ T 18455-2010: Use of the Chinese mark with

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other internationally required marks<sup>3</sup> is acceptable as long as equivalence to the Chinese requirements are guaranteed. The mark can be used in conjunction with the international alphanumeric paper designation.

Paper Packaging Material	Initials	Packaging Type
Fiberboard, Corrugated	CFB	Shipping cartons, layer pads, dividers and over packs
Corrugated Cardboard	CB	Stiffeners, corner guards and edge guards
Paperboard	PB	Chipboard cartons
Paper	WPP	Tissue and molded pulp
Non Corrugated solid Fiberboard	NCFB	Stiffeners, corner guards and edge guards

**Size requirements for the Chinese mark:**

The mark size is to be 40 mm by 40 mm. For especially large or small package component sizes the mark may be appropriately enlarged or reduced, or as identified in the National Standard of the People’s Republic of China, GB/ T 18455-2010.

**Components of the Chinese mark:**


The Chinese mark for paper-based packaging materials consists of the chasing arrows triangle with the appropriate alpha designators centered below the arrow. See the example. Placing the alpha designators inside the triangle is also acceptable. Recycling marks are required in accordance with Chinese Standard GB 18455-2001 or equivalent international standard

Graphic Example for Chinese Mark



**Packaging made of Wood, including Wooden Crates**

As per Section 7.0 of the GSE, all wooden crates, packaging made of wood and pallets made of wood must be treated and marked in accordance with the provisions of the International Standard for Phytosanitary Measures (ISPM) #15: *Guidelines for Regulating Wood Packaging Material in International Trade*. Please note that as stated in section 7.0 that Fumigation, Chemical Pressure Impregnation (CPI) or other chemical means are not to be used.

<sup>3</sup> E.g. 

### APPENDIX C. Allowed Exemptions for application specific restrictions

When using the exemptions any concentrations  $\geq 0.1\%$  by homogenous material level must be actively reported.

Substance	Index	Allowed exemptions
Cadmium	AIII 8(b)	Cadmium and its compounds in electrical contacts.
Cadmium	AIII 38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide.
Cadmium, Lead, Mercury	AIV 1(c)	Lead, cadmium and mercury in infra-red light detectors.
Lead	AIII 6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight.
Lead	AIII 6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight.
Lead	AIII 6(c)	Copper alloy containing up to 4 % lead by weight.
Lead	AIII 7(a)	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead).
Lead	AIII 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.
Lead	AIII 7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher.
Lead	AIII 13(a),	Lead in white glasses used for optical applications.
Cadmium, Lead	AIII 13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards.
Lead	AIII 21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses.
Lead	AIII 24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors.
Lead	AIII 34	Lead in cermet-based trimmer potentiometer elements.
Lead	AIV 3	Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.
Cadmium, Lead	AIV 10	Lead and cadmium in atomic absorption spectroscopy lamps.
Lead	AIV 15	Lead in solders for bonding to ultrasonic transducers.
Lead	AIV 18	Lead in solders of high performance infrared imaging modules to detect in the range 8-14 $\mu\text{m}$ .
Mercury	AIII 4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex.