

GENERAL SPECIFICATION FOR THE ENVIRONMENT

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

- 2.1. 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.
- 2.2. 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 and copy their Agilent Buyer. The e-mail should detail the specific non-conformity and the Agilent/manufacturer part numbers affected.
- 2.3. With the exception of 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.
- 2.4. 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.
- 2.5. 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. Full EU RoHS restrictions are set by individual part specification until fully incorporated in future versions of this document. In relation to the RoHS Directive, Agilent products are classed as monitoring and control instruments that are outside the July 2006 requirements.
 - 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.
- 2.6. 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

3.1. 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

4.1. The following substances 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.

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4.2. 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.

Substance	Example Uses	Threshold
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	< 0.1% by part weight
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	Plasticizer, dye, pigment, paint, ink, adhesive, lubricant	< 0.1% by part weight
2,4-Dinitrotoluene	Plasticizer, rubbers, dyes	< 0.1% by part weight
4,4'- Diaminodiphenylmethane	Catalyst / intermediate hardener for epoxy resins, hardener in adhesives	< 0.1% by part weight
Asbestos, Asbestos Materials	Insulating material, plastic parts	Must not be present
Azocolorants and Azodyes (including Naphthylamine and its salts, Benzidine and its salts, Aminobiphenyl and its salts, Nitrobiphenyl) - see Appendix B	Azodyes	< 0.003% by part weight
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
Benzyl butyl phthalate (BBP)	Plasticizer or encapsulation material	< 0.1% by part weight
Bis (2-ethyl(hexyl)phthalate) (DEHP)	Plasticizer, dielectric fluid or encapsulation material	< 0.1% by part weight
Bis(tributyltin)oxide (TBTO)	Antifungal agent, paint pigment, foaming agent or extinguishant	< 0.1% by part weight
Diarsenic pentaoxide	Adhesion promoter in organic chip carriers or metal hardener	< 0.1% by part weight
Diarsenic trioxide	Fining agent in specialty glasses	< 0.1% by part weight
Dibutyl phthalate (DBP)	Plasticizer, additive in paints, inks, glass fiber or adhesive resins	< 0.1% by part weight
Dibutyltin hydrogen borate (DBB)	In paints, coatings for glass or stabilizer in PVC	< 0.1% by part weight
Diisobutyl phthalate (DIBP)	Plasticizer	< 0.1% by part weight
Disodium tetraborates	Glass, ceramics, detergents, wood treatment, insulation fibreglass	< 0.1% by part weight
Hexabromocyclododecane (HBCDD)	Flame retardant in polystyrene	< 0.1% by part weight

Substance	Example Uses	Threshold
Ozone Depleting Substances – Class I (See Appendix B)	Coolant, propellant, refrigerants	Must not be present and none used in the production process. See Note 1:
Ozone Depleting Substances – Class II (See Appendix B)	Not expected, but historically HCFCs were used as substitutes for CFCs	Must not be present and none used in the production process
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
Polybrominated Biphenyls (PBB) and their ethers/oxides (PBDE)	Not expected, but historically used as flame retardant. OBDPO was found in ABS and other thermoplastics. DBDPO was found in HIPS and other thermoplastics. PeBDPO was used in polyurethane foams.	Must not be present
Polychlorinated Biphenyls (PCB)/ Terphenyls (PCT), Monomethyl-tetrachlorodiphenyl methane and other Halogenated Diphenyl Methanes (see Appendix B)	Not expected, but historically used in transformers, capacitors	Must not be present
Polychlorinated naphthalenes (more than 3 chlorine atoms)	Lubricant, paint, stabilizer (electric characteristic, flame-resistant, water- resistant) insulator, flame retardant	Must not be present
Short chain chlorinated paraffins	Softener in paints & coatings, oils, or flame retardant in plastic, rubber or textiles, use in metalworking	< 0.1% by part weight
Tetraboron disodium heptaoxide, hydrate	Glass, ceramics, detergents, wood treatment, insulation fibreglass	< 0.1% by part weight
Trichlorobenzene	Intermediate, solvent, additive in high performance insulation of wire and cable products, additive in dielectric fluids	< 0.1% by part weight
Tris(2-chloroethyl)phosphate (TCEP)	Plasticizer, flame retardand in foams and coatings, adhesives	< 0.1 % by part weight
Tri-substituted Organnostannic Compounds	Stabilizer, antioxidant, antibacterial and antifungal agents, antifoulant, antiseptic, anti-fungal agent, paint, pigment, antistaining	< 0.1%
Zirconia Aluminosilicate, Refractory Ceramic Fibres	Insulation material	< 0.1% by part weight

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

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4.3. 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:
Cadmium and its compounds	Dyes, pigments, paints/enamels (excepting safety warnings), plastic stabilizer (e.g. electric cables), anti-corrosion coating finish and all other uses (excepting optical glass and switch contacts)	<0,01%	Cadmium and its compounds in electrical contacts Cadmium in optical and filter glass
Chloroethene (vinyl chloride)	Propellant in aerosols	Must not be present	(none)
Hexachloroethane	Manufacturing or processing of non-ferrous metals	Must not be present and none used in the production process	(none)
Chromium VI Compounds	Metallic coating and all other uses (e.g. in commercial off-the-shelf parts)	< 0.1%	(none)
	Custom mechanical parts fabricated to Agilent engineering drawings	Must not be present	(none)
Lead and its compounds	Paints	< 0,01%	(none)
	PVC stabilizer in cable jackets	< 0,03%	(none)
Mercury and its compounds	Contact point material, pigment, anti-corrosion, switches, high-efficiency phosphor, and all other uses (see also Labeling Requirements section 8.3)	Must not be present	Mercury in straight fluorescent lamps for special purposes not exceeding 10 mg per lamp

5. Battery Content Restrictions

5.1. 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-manganese, Zinc-carbon, or Nickel Cadmium batteries	20 ppm by battery weight
Lead	Lead acid batteries	0.1% by battery weight
Lead	Alkaline-manganese or Zinc-carbon batteries	0.1% by battery weight
Mercury and its compounds	Alkaline-manganese or Zinc-carbon batteries (except button cell)	Must not be present
	Mercuric Oxide batteries	Must not be present
	All others	5 ppm by battery weight

5.2. All lithium metal and lithium ion cells or batteries must meet the requirements of 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).

6. Packaging Content Restrictions

6.1. The following substances (see 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.

Substance	Restricted Application	Threshold (Not to Exceed)
Arsenic Compounds	In wooden packaging and packaging materials	Must not be present
Cadmium, Chromium VI 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

7. 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.

8. Product Labeling and Marking Requirements

- 8.1. 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 hazardous nature of the battery. Products with user-removable batteries should be supplied with information on the safe insertion and removal of the batteries.
- 8.2. 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.
- 8.3. Mercury Product Labeling Requirements:** Removable mercury lamps, as well as products containing mercury lamps, must be labeled in accordance with local regulatory requirements.¹
- 8.4. 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 D.
- 8.5. Packaging Declaration of Conformity Requirements:** Packaging suppliers must provide a Declaration of Conformity regarding the requirements described in section 6.1 when requested.
- 8.6. Product Information and Labeling Requirements:** Agilent is required to comply with the Chinese Management Methods for Controlling Pollution by Electronic Information Products. Suppliers to Agilent are responsible for ensuring all 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 EPUP or Environmental Protection Use Period number), (2) reflect the required packaging recycle marking on the product box and any outer box which combines goods shipping and/or sold together, and (3) reflect the required toxic/hazardous substance table in the product

¹ 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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manual or shipment insert which accompanies the product. For further details or questions contact your Agilent representative.

8.7. 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.



9. Chemical Registration Requirements

9.1. 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.

10. Reportable Substances

10.1. The substances listed in Appendix C must be reported to Agilent as material content for products directly supplied to Agilent.

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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

Hg – elemental Mercury

Hg Compounds – compounds that contain Mercury

HIPS – High Impact Polystyrene

Homogeneous Material – a material that can not 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.

OBDDPO - 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 $1,000,000 \times \text{mass substance} / \text{mass of the homogeneous material}$. Concentrations are unit-less, for example $100 \text{ ppm} = 0.01\% = 100 \text{ mg/kg}$.

PeBDPO - pentabromodiphenyl oxide (a flame retardant)

Prohibited - not allowed

PVC – Polyvinyl Chloride

Restricted – allowed in limited quantities

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

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.

² 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 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

Chemical List

Anthracene oils	CAS Numbers
Anthracene oil	90640-80-5
Anthracene oil, anthracene paste	90640-81-6
Anthracene oil, anthracene paste, anthracene fraction	91995-15-2
Anthracene oil, anthracene paste, distn. lights	91995-17-4
Anthracene oil, anthracene-low	90640-82-7

Asbestos/Asbestos Materials	CAS Numbers
Actinolite	77536-66-4
Amosite (Grunerite)	12172-73-5
Anthophyllite	77536-67-5
Asbestos and Asbestos Materials	1332-21-4
Chrysotile	12001-29-5 132207-32-0
Crocidolite	12001-28-4
Tremolite	77536-68-6

Azocolorants and Azodyes	CAS Numbers
Examples of Azocolorants and Azodyes which form certain Aromatic Amines	
4-nitrobiphenyl	92-93-3
2,4,5-trimethylaniline	137-17-7
2-naphthylamine	91-59-8
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
4,4'-methylene-bis(2-chloroaniline)	101-14-4
4,4'-methylenedianiline	101-77-9
4,4'-methylenedi-o-toluidine	838-88-0
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
4-amino azobenzene	60 09 3
4-chloroaniline	106-47-8
4-chloro-o-toluidine	95-69-2
4-methoxy-m-phenylenediamine	615-05-4
4-methyl-m-phenylenediamine	95-80-7
5-nitro-o-toluidine	99-55-8
6-methoxy-m-toluidine	120-71-8
Benzidine	92-87-5

Biphenyl-4-ylamine	92-67-1
o-aminoazotoluene	97-56-3
o-anisidine	90-04-0
o-toluidine	95-53-4

Note: The European Community's ban applies to azocolorants and azodyes that by reductive cleavage of azo groups may release one of the above aromatic amines.

Cadmium and its Compounds	CAS Numbers
Cadmium	7440-43-9
Examples of Common Cadmium Compounds	
Cadmium oxide	1306-19-0
Cadmium chloride	10108-64-2
Cadmium sulfate	10124-36-4
Cadmium sulfide	1306-23-6

Chromium VI Compounds	CAS Numbers
Chromium VI compounds	-
Examples of Common Chromium Compounds	
Ammonium dichromate	7789-09-5
Barium chromate	10294-40-3
Calcium chromate	13765-19-0
Chromic acetate	1066-30-4
Chromic acid, Dichromic acid and Oligomers of chromic acid and dichromic acid	7738-94-5 13530-68-2
Chromium trioxide	1333-82-0
Chromium trioxide and Acids generated from chromium trioxide and their oligomers	1333-82-0
Lead chromate	7758-97-6
Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2
Pentazinc chromate octahydroxide	49663-84-5
Potassium chromate	7789-00-6
Potassium dichromate	7778-50-9
Potassium hydroxyoctaoxodizincatedichromate	11103-86-9
Sodium chromate	7775-11-3
Sodium dichromate (sodium dichromate, hydrate)	10588-01-9 7789-12-0
Strontium chromate	7789-06-2
Zinc chromate	13530-65-9

Lead sulphate, tribasic	12202-17-4
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Glycol Ethers (Selected)	CAS Numbers
2-Ethoxyethanol	110-80-5
2-Ethoxyethyl acetate	111-15-9
2-Methoxyethanol	109-86-4
2-Methoxyethyl acetate	110-49-6
Diethylene glycol dimethyl ether	111-96-6

Hexabromocyclododecane (HBCDD)	CAS Numbers
Hexabromocyclododecane (HBCDD)	25637-99-4 3194-55-6
alpha-hexabromocyclododecane	134237-50-6
beta-hexabromocyclododecane	134237-51-7
gamma-hexabromocyclododecane	134237-52-8

Lead and its Compounds	CAS Numbers
Lead	7439-92-1
Examples of Common Lead Compounds	
Lead (II) sulfate	7446-14-2
Lead (II) acetate, trihydrate	6080-56-4
Lead (II) carbonate	598-63-0
Lead (II) carbonate basic	1319-46-6
Lead (II) chromate	7758-97-6
Lead (II) oxide	1317-36-8
Lead (II) phosphate	7446-27-7
Lead (II) sulfide	1314-87-0
Lead (II) titanate	12060-00-3
Lead (II,IV) oxide	1314-41-6
Lead (IV) oxide	1309-60-0
Lead acetate	301-04-2
Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8
Lead hydrocarbonate	1319-46-6
Lead hydroxidcarbonate	1344-36-1
Lead molybdate	10190-55-3
Lead phosphate	7446-27-7
Lead selenide	12069-00-0
Lead stearate	1072-35-1
Lead sulfate, sulphuric acid, lead salt	15739-80-7
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2

Mercury and its Compounds	CAS Numbers
Mercury	7439-97-6
Examples of Common Mercury Compounds	
Mercuric chloride	33631-63-9
Mercuric nitrate	10045-94-0
Mercuric oxide	21908-53-2
Mercuric sulfate	7783-35-9
Mercuric sulfide	1344-48-5
Mercury bichloride	7487-94-7

Ozone Depleting Substances/Isomers - Class I*	CAS Numbers
Trichlorofluoromethane (CFC 11)	75-69-4
Dichlorodifluoromethane (CFC12)	75-71-8
Chlorotrifluoromethane (CFC 13)	75-72-9
Pentachlorofluoroethane (CFC 111)	354-56-3
Tetrachlorodifluoroethane (CFC 112)	76-12-0
Trichlorotrifluoroethane (CFC 113)	354-58-5
1,1,2 Trichlorotrifluoroethane	76-13-1
Dichlorotetrafluoroethane (CFC 114)	76-14-2
Monochloropentafluoroethane (CFC 115)	76-15-3
Heptachlorofluoropropane (CFC 211)	422-78-6 135401-87-5
Hexachlorodifluoropropane (CFC 212)	3182-26-1
Pentachlorotrifluoropropane (CFC 213)	2354-06-5 134237-31-3
Tetrachlorotetrafluoropropane (CFC 214)	29255-31-0
1,1,1,3-Tetrachlorotetrafluoropropane	2268-46-4
Trichloropentafluoropropane (CFC 215)	1599-41-3
1,1,1-Trichloropentafluoropropane	4259-43-2
1,2,3-Trichloropentafluoropropane	76-17-5
Dichlorohexafluoropropane (CFC 216)	661-97-2
Monochloroheptafluoropropane (CFC 217)	422-86-6
Bromochlorodifluoromethane (Halon 1211)	353-59-3
Bromotrifluoromethane (Halon 1301)	75-63-8
Dibromotetrafluoroethane (Halon 2402)	124-73-2
Carbon Tetrachloride (Tetrachloromethane)	56-23-5
1,1,1, - Trichloroethane (methyl chloroform) and its isomers except 1,1,2-trichloroethane	71-55-6
Bromomethane (Methyl Bromide)	74-83-9
Bromodifluoromethane and isomers (HBFC's)	1511-62-2

*Please note: These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available. Refer to <http://www.epa.gov/ozone/ods.html> for chemical names and updates.

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**Ozone Depleting Substances/Isomers -
Class II Hydrochlorofluorocarbons***

	CAS Numbers
Dichlorodifluoromethane (HCFC 21)	75-43-4
Chlorodifluoromethane (HCFC 22)	75-45-6
Chlorofluoromethane (HCFC 31)	593-70-4
Tetrachlorofluoroethane (HCFC 121)	134237-32-4
1,1,1,2-tetrachloro-2-fluoroethane (HCFC 121a)	354-11-0
1,1,2,2-tetrachloro-1-fluoroethane	354-14-3
Trichlorodifluoroethane (HCFC 122)	41834-16-6
1,2,2-trichloro-1,1-difluoroethane	354-21-2
Dichlorotrifluoroethane(HCFC 123)	34077-87-7
Dichloro-1,1,2-trifluoroethane	90454-18-5
2,2-dichloro-1,1,1-trifluoroethane	306-83-2
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)	354-23-4
1,1-dichloro-1,2,2-trifluoroethane (HCFC-123b)	812-04-4
2,2-dichloro-1,1,2-trifluoroethane (HCFC-123b)	812-04-4
Chlorotetrafluoroethane (HCFC 124)	63938-10-3
2-chloro-1,1,1,2-tetrafluoroethane	2837-89-0
1-chloro-1,1,2,2-tetrafluoroethane (HCFC 124a)	354-25-6
Trichlorofluoroethane (HCFC 131)	27154-33-2 (134237-34-6)
1-Fluoro-1,2,2-trichloroethane	359-28-4
1,1,1-trichloro-2-fluoroethane (HCFC131b)	811-95-0
Dichlorodifluoroethane (HCFC 132)	25915-78-0
1,2-dichloro-1,1-difluoroethane (HCFC 132b)	1649-08-7
1,1-dichloro-1,2-difluoroethane (HCFC 132c)	1842-05-3
1,1-dichloro-2,2-difluoroethane	471-43-2
1,2-dichloro-1,2-difluoroethane	431-06-1
Chlorotrifluoroethane (HCFC 133)	1330-45-6
1-chloro-1,2,2-trifluoroethane	1330-45-6
2-chloro-1,1,1-trifluoroethane (HCFC-133a)	75-88-7
Dichlorofluoroethane(HCFC 141)	1717-00-6; (25167-88-8)
	1717-00-6
1,1-dichloro-1-fluoroethane (HCFC-141b)	430-57-9
1,2-dichloro-1-fluoroethane	
Chlorodifluoroethane (HCFC 142)	25497-29-4
1-chloro-1,1-difluoroethane (HCFC142b)	75-68-3
1-chloro-1,2-difluoroethane (HCFC142a)	25497-29-4
Hexachlorofluoropropane (HCFC 221)	134237-35-7
Pentachlorodifluoropropane (HCFC 222)	134237-36-8
Tetrachlorotrifluoropropane (HCFC 223)	134237-37-9
Trichlorotetrafluoropropane (HCFC 224)	134237-38-0

Dichloropentafluoropropane, (Ethyne, fluoro-) (HCFC 225)	127564-92-5; (2713-09-9)
2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC 225aa)	128903-21-9
2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC 225ba)	422-48-0
1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225bb)	422-44-6
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC 225ca)	422-56-0
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC 225cb)	507-55-1
1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC 225cc)	13474-88-9
1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC 225da)	431-86-7
1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC 225ea)	136013-79-1
1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC 225eb)	111512-56-2
Chlorohexafluoropropane (HCFC 226)	134308-72-8
Pentachlorofluoropropane (HCFC 231)	134190-48-0
Tetrachlorodifluoropropane (HCFC 232)	134237-39-1
Trichlorotrifluoropropane (HCFC 233)	134237-40-4
1,1,1-Trichloro-3,3,3-trifluoropropane	7125-83-9
Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
Chloropentafluoropropane (HCFC 235)	134237-41-5
1-Chloro-1,1,3,3,3-pentafluoropropane	460-92-4
Tetrachlorofluoropropane (HCFC 241)	134190-49-1
Trichlorodifluoropropane (HCFC 242)	134237-42-6
Dichlorotrifluoropropane (HCFC 243)	134237-43-7
1,1-dichloro-1,2,2-trifluoropropane	7125-99-7
2,3-dichloro-1,1,1-trifluoropropane	338-75-0
3,3-Dichloro-1,1,1-trifluoropropane	460-69-5
Chlorotetrafluoropropane (HCFC 244)	134190-50-4
3-chloro-1,1,2,2-tetrafluoropropane	679-85-6
Trichlorofluoropropane (HCFC 251)	134190-51-5
1,1,3-trichloro-1-fluoropropane	818-99-5
Dichlorodifluoropropane (HCFC 252)	134190-52-6
Chlorotrifluoropropane (HCFC 253)	134237-44-8
3-chloro-1,1,1-trifluoropropane (HCFC 253fb)	460-35-5
Dichlorofluoropropane (HCFC 261)	134237-45-9
1,1-dichloro-1-fluoropropane	7799-56-6
Chlorodifluoropropane (HCFC 262)	134190-53-7
2-chloro-1,3-difluoropropane	102738-79-4



Chlorofluoropropane (HCFC 271)	134190-54-8
2-chloro-2-fluoropropane	420-44-0

*Please note: These materials may contain isomers that are not listed here. Isomers with CAS numbers have been included when available. Refer to <http://www.epa.gov/ozone/ods.html> for chemical names and updates.

Phthalates	CAS Numbers
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4
Butyl benzyl phthalate (BBP)	85-68-7
Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7
Bis(2-methoxyethyl) phthalate	117-82-8
Dibutylphthalate (DBP)	84-74-2
Diisobutyl phthalate (DIBP)	84-69-5

Polybrominated Biphenyls (PBBs) and their Ethers/Oxides	CAS Numbers
Examples of Common PBB/PBDE Compounds	
Bromobiphenyl and its ethers	2052-07-5 (2-Bromobiphenyl) 2113-57-7 (3-Bromobiphenyl) 92-66-0 (4-Bromobiphenyl) 101-55-3 (ether)
Decabromobiphenyl and its ethers	13654-09-6 1163-19-5 (ether)
Dibromobiphenyl and its ethers	92-86-4 2050-47-7 (ether)
Heptabromobiphenylether	68928-80-3
Hexabromobiphenyl and its ethers	59080-40-9 36355-01-8 (hexabromo-1,1'-biphenyl) 67774-32-7 (Firemaster FF-1) 36483-60-0 (ether)
Nonabromobiphenylether	63936-56-1
Octabromobiphenyl and its ethers	61288-13-9 32536-52-0 (ether)

Pentabromobiphenyl ether	32534-81-9
Polybrominated Biphenyls*	59536-65-1
Tetrabromobiphenyl	40088-45-7
Tetrabromobiphenyl ether	40088-47-9
Tribromobiphenyl ether	49690-94-0

* Polybrominated Biphenyl(s)=Polybromobiphenyl(s)=Polybromodiphenyl(s)

Polychlorinated Biphenyls (PCBs) and Terphenyls (PCTs)	CAS Numbers
Polychlorinated Biphenyls(all isomers and congeners)	1336-36-3
Aroclor	12767-79-2
Aroclor 1254	11097-69-1
Chlorodiphenyl (Aroclor 1260)	11096-82-5
Kanechlor 500	27323-18-8
Polychlorinated Terphenyls (all isomers and congeners)	61788-33-8
Terphenyls	26140-60-3
Examples of Halogenated Diphenyl Methanes	
Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6
Monomethyl-dichloro-diphenyl methane (Ugilec 121, Ugilec 21)	81161-70-8
Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8

Refractory Ceramic Fibers	CAS Numbers
Refractory Ceramic Fibers, Aluminiumsilicate *	n/a
Refractory Ceramic Fibers, Zirconia Aluminosilicate **	n/a

* are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfill the two following conditions:

a) Al₂O₃ and SiO₂ are present within the following concentration ranges:

- Al₂O₃: 43.5 – 47 % w/w, and SiO₂: 49.5 – 53.5 % w/w, or
- Al₂O₃: 45.5 – 50.5 % w/w, and SiO₂: 48.5 – 54 % w/w,

b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm)

** are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfill the two following conditions:

a) Al₂O₃, SiO₂ and ZrO₂ are present within the following concentration ranges:

- Al₂O₃: 35 – 36 % w/w, and

- SiO₂: 47.5 – 50 % w/w, and
- ZrO₂: 15 - 17 % w/w,

b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm)

Short Chain Chlorinated Paraffins	CAS Numbers
Examples of Short Chain Chlorinated Paraffins	
Chlorinated Paraffin	63449-39-8
Chlorinated Paraffin	85535-84-8

Tri-substituted Organnostannic Compounds	CAS Numbers
Triphenyltin-N, N-dimethyldithiocarbamate	1803-12-9
Triphenyltinfluoride	379-52-2
Triphenyltinacetate	900-95-8
Triphenyltinchloride	639-58-7
Triphenyltinhydroxide	76-87-9
Triphenyltin fattyacid(9-11)salt)	18380-71-7, 18380-72-8, 47672-31-1, 94850-90-5
Triphenyltinchloroacetate	7094-94-2
Tributyltinmethacrylate	2155-70-6
Bis(tributyltin)fumalate	6454-35-9
Tributyltinfluoride	1983-10-4
Bis(tributyltin)2,3-dibromosuccinate	31732-71-5
Tributyltinacetate	56-36-0
Tributyltinlaurate	3090-36-6
Bis(tributyltin)phthalate	4782-29-0
Copolymer of alkyl(c=8) acrylate,methyl methacrylate and tributyltin methacrylate	67772-01-4
Tributyltinsulfamate	6517-25-5
Bis(tributyltin)maleate	14275-57-1
Tributyltinchloride	1461-22-9, 7342-38-3
Tributyltin cyclopentane carbonate = mixture	85409-17-2
Tributyltin-1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthrenecarboxylatemix	26239-64-5
Other tri-substituted organostannic compounds	-

Other substances	CAS Numbers
2,4-Dinitrotoluene	121-14-2
4,4'- Diaminodiphenylmethane	101-77-9

4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9
4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2
Acrylamide	79-06-1
Anthracene	120-12-7
Benzene	71-43-2
Bis(tributyltin)oxide (TBTO)	56-35-9
Boric acid	10043-35-3, 11113-50-1
Cobalt dichloride	7646-79-9
Diarsenic pentaoxide	1303-28-2
Diarsenic trioxide	1327-53-3
Dibutyltin (DBT) compounds	-
Dibutyltin hydrogen borate (DBB) [Di- ⁿ -butylstanniohydroxyborane/C8H19B03Sn]	75113-37-0
Dimethylfumarate (DMFu)	210-849-0
Disodium tetraborate, anhydrous	1303-96-4, 1330-43-4, 12179-04-3
Hexachloroethane	67-72-1
Lead hydrogen arsenate	7784-40-9
Perfluorooctane sulfonates (PFOS) [C8F17SO2X where X = OH, Metal salt (O-M+), halide, amide, and other derivatives including polymers]	-
Phenol,2-(2H-benzotriazol-2-yl)- 4,6-bis(1,1-dimethylethyl)	3846-71-7
Pitch, coal tar, high temp.	n/a (EC# 266-028-2)
Polychlorinated Naphthalenes	70776-03-3
Tetraboron disodium heptaoxide, hydrate	12267-73-1
Trichlorobenzene	120-82-1
Trichloroethylene	79-01-6
Triethyl arsenate	15606-95-8
tris(2-chloroethyl)phosphate	115-96-8

APPENDIX C

Reportable Substances

The concentration or amount of the following substances in material may be requested for reporting compliance³ to Agilent restrictions defined in this document:

Reportable Substance or compound	Prohibited or Restricted
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	Yes
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	Yes
2,4-Dinitrotoluene	Yes
4,4' - Diaminodiphenylmethane	Yes
Arsenic compounds	Yes
Asbestos	Yes
Azo Compounds (colorants and dyes)	Yes
Benzene	Yes
Benzyl butyl phthalate	Yes
Bis (2-ethyl(hexyl)phthalate) (DEHP)	Yes
Bis(tributyltin)oxide	Yes
Cadmium and its Compounds	Yes
Chloroethene (vinyl chloride)	Yes
Chromium VI Compounds	Yes
Cobalt dichloride	Yes
Diarsenic pentaoxide	Yes
Diarsenic trioxide	Yes
Dibutyl phthalate	Yes
Dibutyltin hydrogen borate (DBB)	Yes
Diisobutyl phthalate (DIBP)	Yes
Disodium tetraborate, anhydrous	Yes
Halogenated Diphenyl Methanes	Yes
Hexabromocyclododecane (HBCDD)	Yes
Hexachloroethane	Yes
Lead and Lead Compounds	Yes
Mercury and its Compounds	Yes

³ A < 5ppm reporting limit accounts for unintentional impurities.

Reportable Substance or compound	Prohibited or Restricted
Ozone Depleting Substances (ODSs) see Appendix B	Yes
Perfluorooctane sulfonate (PFOS)	Yes
Phenol,2-(2H-benzotriazol-2-yl)- 4,6-bis(1,1-dimethylethyl)	Yes
Polybrominated biphenyls (PBBs)	Yes
Polybrominated diphenylethers (PBDEs)	Yes
Polychlorinated Biphenyls (PCBs) and Terphenyls (PCTs)	Yes
Polychlorinated naphthalenes (more than 3 chlorine atoms)	Yes
Shortchain Chlorinated Paraffins	Yes
Tetraboron disodium heptaoxide, hydrate	Yes
Trichlorobenzene	Yes
Tris(2-chloroethyl)phosphate (TCEP)	Yes
Tri-substituted Organnostannic Compounds	Yes
Zirconia Aluminosilicate, Refractory Ceramic Fibres	Yes

The following list is addition to the list of restricted substances in products. Use of these substances is allowed, but the content of these substances must be reported⁴.

Reportable Substance or compound	Reporting required if intentionally added or >= 0.1% by part weight
4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	Yes
4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3)	Yes
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	Yes
Acrylamide	Yes
Aluminosilicate, Refractory Ceramic Fibres	Yes
Anthracene	Yes
Anthracene oil	Yes
Bis(2-methoxyethyl) phthalate	Yes
Boric acid	Yes
Certain Glycol Ethers	Yes

⁴ A < 5ppm reporting limit accounts for unintentional impurities.



Reportable Substance or compound	Reporting required if intentionally added or $\geq 0.1\%$ by part weight
Dibutyltin (DBT) compounds	Yes
DMFu	Yes
Lead hydrogen arsenate	Yes
Pitch, coal tar, high temp.	Yes
Triethyl arsenate	Yes

APPENDIX D

Packaging Materials 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 18455:2001: Use of the Chinese mark with other

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internationally required marks is acceptable as long as 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 18455:2001.

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.

SPECIFICATION REVISION HISTORY

Revision	Changes	Approval	Date
I	Added "packaging" to scope statement (section 2.1), deleted reference to SPG and Quality Webform URL (section 2.2), added supplier GSE conformance issue contact process and e-mail address (section 2.2), changed "none intentionally added" to "must not be present" in General Restrictions Table (section 4.2), deleted reference to additional SPG specific substance restrictions (section 4.2), added "in any homogeneous material shall not exceed the concentration thresholds specified" in introductory sentence for Specific Applications Table (section 4.3), replaced all "0 ppm" with "5 ppm" thresholds in Specific Applications Table (section 4.3), deleted references to LCDs and replaced "0 ppm" with "must not be present" in mercury restrictions section of Specific Applications Table (section 4.3), deleted "parts per million" definition below Specific Applications Table (section 4.3), replaced "0 ppm" with "must not be present" and deleted reference to button cells in mercury section of Battery Content Restrictions Table (section 5.1), replaced "not to be used" with "must not be present" in mercury compounds section of Battery Content Restrictions Table (section 5.1), replaced "0 ppm" with "must not be present" in ODS section of Packaging Content Restrictions Table (section 6.1), deleted reference to LCDs in Mercury Product Labeling requirements statement (section 8.3), added "electrical and electronic" products to Product End of Life Labeling Requirements (section 8.4), added section on Reportable Substances with reference to Appendix C (section 10), added section for definitions and acronyms (section 11), replaced SPG Product Specific Restrictions Table with Reportable Substances Table (Appendix C), changed point of document control from MatrixOne to Stellent (Knowledge Portal)	James Powell	06-01-2006
J	Added Hexavalent Chromium and Halogenated Diphenyl Methanes to General Restrictions table (section 4.2); changed threshold limit value for Cadmium applications and Lead in paints to 100 ppm in Specific Applications table (section 4.3); added Nickel Cadmium batteries to applicable batteries list and changed Cadmium threshold limit value to 20ppm for all applicable batteries in Battery Content Restrictions table (section 5.1); added "Incidental presence of these substances not to exceed a total sum concentration of 100 ppm" to threshold limit value for Cadmium, Chromium (VI), Lead and Mercury in Packaging Content Restrictions table (section 6.1); changed "on request" to "when requested" in Battery Declaration of Conformance statement (section 8.2); added "Paper and Plastic Packaging Labeling Requirements" (section 8.4), "Packaging Declaration of Conformity Requirements" (section 8.5) and "Product Information and Labeling Requirements" (section 8.6) to Product Labeling and Marking Requirements (section 8); added Taiwan battery recycling symbol and single use Alkaline-Manganese battery to Battery Labeling Requirements table (Appendix A); added Paper and Plastic Packaging Labeling Requirements table (Appendix D); changed point of document control from Stellent (Knowledge Portal) back to MatrixOne	James Powell	08-01-2008



K	<p>Added RoHS statement in section 2.5; changed wording in section 4.1 to enhance clarity, added statement for analytical standards; changed wording in section 4.2 to enhance clarity and in table 4.2 combine halogenated diphenyl methanes to PCB; moved SCC from table 4.3 to table 4.2 with 0.1% by part weight threshold, moved Hexavalent Chromium from table 4.2 to table 4.3 and added "metallic coating" as specific application with threshold of 0.1% per homogeneous material; in table 4.2 Added ODC Mfr Certification in 4.2:added Azocolorants, Benzene, DBB, Trichlorobenzene, PFOS, Diaminodiphenylmethane, DBP, diarsenic pentaoxide, diarsenic trioxide, DEHP, HBCDD, Bistributyltin oxide, BBP with respective thresholds; in table 4.3 for cadmium added exemption statement for safety warnings, optical glass and switch contacts; in table 4.3 for mercury elaborated on restricted applications and changed restriction statement to exemption statement for mercury in lamps; in table 4.3 added chloroethane restriction for use as propellant in aerosols; in table 4.3 ; Separated Lead acid batteries out in 5.1; added hexachloroethane restriction for use in manufacturing or processing of non-ferrous metals; changed wording in section 5.1 to enhance clarity.; in table 5.1 specified ppm threshold by weight.; in section 6.1 changed wording to enhance clarity, in table 6.1 added cobalt dichloride restriction in packaging materials and arsenic compound restriction in wooden packaging and wooden packaging materials; added section 5.2 on lithium metal cells and batteries and lithium ion cells and batteries; expanded appendix A for lithium metal/ion cells and batteries; expanded appendix B on examples including CAS numbers for Asbestos, PCB/PCT, Cadmium compounds, Chromium compounds, Lead compounds, grouped halogenated diphenyl methanes together with PCB, added tables for Azocolorants, HBCDD and phthalates, added table for "other substances" to reference the substance restrictions newly added in this revision; in Appendix C changed list to reflect all restricted substances and added table of reportable substances. Changes to lithium Ion/Lithium Metal, Transportation requirements in Appendix A; added ODC as synonym to ODS in glossary</p>	Rob March	11-16-2009



L	<p>In section 4.2 added Diisobutyl phthalate (DIBP), 2,4-Dinitrotoluene, Tris(2-chloroethyl)phosphate (TCEP), Zirconia Aluminosilicate Refractory Ceramic Fibres, Disodium tetraborates, Tetraboron disodium heptaoxide hydrate, Tri-substituted Organnostannic Compounds, Phenol,2-(2H-benzotriazol-2-yl)- 4,6-bis(1,1-dimethylethyl), Polychlorinated naphthalenes (more than 3 chlorine atoms), changes threshold for lead in batteries to 0.1% by weight; expanded appendix B on substances, group of substances and examples including CAS numbers for Chromium VI compounds, Phtalates (DIPB), Refractory Ceramic fibers, Anthracene Oils, Tri-substituted Organnostannic Compounds, Acrylamide, Pitch coal tar high temp., Disodium tetraborate anhydrous, Tetraboron disodium heptaoxide hydrate, Trichloroethylene, Boric acid, Dimethylfumarate (DMFu), Phenol,2-(2H-benzotriazol-2-yl)- 4,6-bis(1,1-dimethylethyl), Polychlorinated Naphthalenes, Dibutyltin (DBT) compounds; in Appendix C changed list to reflect all restricted substances and added table of reportable substances for Diisobutyl phthalate (DIBP), 2,4-Dinitrotoluene, Tris(2-chloroethyl)phosphate (TCEP), Zirconia Aluminosilicate Refractory Ceramic Fibres, Disodium tetraborate anhydrous, Tetraboron disodium heptaoxide hydrate, Tri-substituted Organnostannic Compounds, Phenol,2-(2H-benzotriazol-2-yl)- 4,6-bis(1,1-dimethylethyl), Polychlorinated naphthalenes (more than 3 chlorine atoms and for Anthracene oil, Pitch coal tar high temp., Aluminosilicate Refractory Ceramic Fibres, Acrylamide, Boric acid, DMFu, Certain Glycol Ethers, Dibutyltin (DBT) compounds, in Appendix D, for Chinese mark explicitly accept international equivalent, for packaging made of wood explicitly state that Fumigation, Chemical Pressure Impregnation (CPI) or other chemical means are not to be used, some minor formatting changes (lists sorted alphabetically) and cleanup of revision log.</p>	Rob March	30-Oct-2010
M	<p>Revised all "Hexavalent Chromium and its compounds" references to become "Chromium VI Compounds";</p> <p>REACH: Added 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich and 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters into Section 4.2, Appendix B and Appendix C; Added 4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol); Bis(2-methoxyethyl) phthalate; and 4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3), to Appendix B and Appendix C; Added Pentazinc chromate octahydroxide and Potassium hydroxyoctaoxodizincatedichromate to Appendix B Added definition for Must Not be Present. Clarified definition Chemical Standards, Analytical standards, bio- reagents not in scope of the GSE. Included Must be recycled or disposed of properly statement on NiMH batteries, added Chinese Low Mercury or Mercury Free characters to Alkaline batteries.</p> <p>(Format changes)</p>	James C. Powell	25-Oct-2011