

Anritsu Group Global Green Procurement Specification



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The 16th Edition

Green Procurement Specification:

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1. Introduction

The protection and preservation of the environment is of fundamental concern to The Anritsu Group (hereafter Anritsu). We will make our best efforts to conduct our business operations in accordance with sound environmental practices, with respect for local national and international conservation rules, laws, regulations and standards.

Anritsu promotes procurement of 'green' products used to manufacture environmentally and safely conscious products (parts, units, materials, and packaging materials. hereafter products).

This specification describes Anritsu's basic concept with respect to 'green procurement' as well as general items that Anritsu and its suppliers shall continue to tackle with regard to environmental problems and product safety. In addition, the Anritsu-defined separate specification shall show details that differ with product characteristics.

This specification shall be revised when necessary in accordance with societal changes and new knowledge.

The Anritsu Group's Environmental Principle:

Anritsu strives to give due consideration to the environment in both the development and manufacture of our products. Through sincerity, harmony, and enthusiasm, we will endeavor to foster a prosperous society at one with nature.

2. SCOPE

2.1 Content

This specification covers applicable documents, definitions and requirements for supplier product environmental compliance and product safety.

2.2 Application

The specification shall apply to procurement of products by Anritsu, and substances that are used in manufacturing of these products.

3. DEFINITIONS

3.1 Product assessment:

Evaluation of the effect of products on the environment at the product design stage for each step such as parts and materials procurement, manufacturing, logistics, use, recycling, waste disposal, etc., for the purpose of performing necessary design changes for products, and promoting environmentally conscious product development.

3.2 Homogeneous Material:

Homogeneous Material means one material of uniform composition throughout or a material consisting of a combination of materials, which cannot be disjointed or separated into different materials by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.

3.3 Intentionally Added:

The deliberate use of a substance in the formulation of a material/part where the continued presence of it is desired to provide a specific characteristic, appearance or quality, or in the manufacturing process to achieve certain functions. If a material is "Intentionally Added" at any point in the supply chain, it

must be consistently treated as “Intentionally Added” through the final product assembly. Any catalysts or processing aids that are introduced during the manufacturing process and remain as part of the product are always considered “Intentionally Added”.

3.4 Contained in Products:

Product constituents of parts and materials as supplied to Anritsu.

3.5 Substances with environmental impact:

Substances affecting life, health and the environment as defined by this Specification (Section 3.7 - Section 3.11).

3.6 Substances under control of product safety

Substances whose content condition in materials/parts is restricted in terms of product safety by Anritsu.

3.7 Banned Substances:

Substances which have been found by government agencies to be un-acceptable due to health or environmental impact. These must not be in materials/products supplied to Anritsu.

3.8 Conditional Banned Substances:

Substances that must not be contained in any materials/parts, but have a material ban deadline or the exemption set by a law. Anritsu suppliers must work to reduce these so they are not contained in materials/parts in sufficient time to meet the ban deadline Preferable much before in order to reduce the risk of product supply problems.

3.9 Controlled Substances:

Substances that must have their content stated on requests from Anritsu (parts where used, etc.) and managed to ensure they are not contained in materials/parts when they are banned.

3.10 Banned Substances in Manufacturing:

Substances prohibited from use in the manufacturing process regardless of their presence in products. Examples of these are Ozone Depleting Substances.

3.11 Suppressed Substances in Manufacturing:

Substances that must be used as little as possible in manufacturing or where efforts to suppress content should be undertaken regardless of presence in products, and which must have usage (where used, process used, etc.) managed.

3.12 Supplier Material Declaration:

A Material Declaration which discloses all (100%) of the homogeneous substances that are contained in those materials/parts. Materials or substances (whether “Intentionally Added” or not) contained in materials/parts purchased by a supplier (and in turn incorporated into supplier’s products) must be disclosed.

4. General Requirements for Anritsu suppliers in order to minimize the impact to the Environment.

4.1 Environmental Management System

The supplier shall work towards creating and promoting an environmental management system according to the ISO 14001 Environmental Management System.

4.2 Product Assessment Implementation

The supplier shall carry out product assessment so as to minimize the environmental impact of products designed by own. The main items that shall be taken into consideration when performing product assessments are shown below. The supplier shall voluntarily implement designs and other functions that reduce the environmental impact. In addition, the supplier shall be requested to disclose information at the request of Anritsu.

4.2.1 Materials

1) Uniformity of Materials

Use less materials in products as much as possible.

2) Material Selection

When selecting product materials, avoid composites that are not easily recycled, and take care to select materials that are easily recycled.

3) Substances with environmental impact

As a general rule, do not use substances and compounds for materials/products supplied to Anritsu, which are banned (whether conditionally or fully) by domestic and foreign law, and do not use these substances and compounds in manufacturing. If use of these substances or compounds is unavoidable, the supplier shall clarify the name, contents, and places where used, as well as the environmental impact, etc. The supplier shall propose precautions to prevent leaks, isolation, transportation, recycling, waste treatment methods, etc.

4.2.2 Resource Conservation

1) Use of Recycled Materials

Recycle materials shall be used for products to the fullest possible extent.

2) Reducing Material Quantities

The quantities of material used shall be reduced to the fullest possible extent.

4.2.3 Design for Disassembly

Products shall be designed to facilitate easy disassembly with a maximum of component being reusable, and each material being recyclable to the fullest possible extent.

4.2.4 Marking

The materials used in products and components shall where feasible be fully, clearly and indelibly indicated to facilitate recycling and optimal disposal.

4.2.5 Energy Conservation

Products shall be manufactured using low energy-consumption methods to the fullest possible extent.

4.2.6 Materials for all material/part packaging

Packaging materials shall take the fullest possible account of the following items.

1) Structure

Design packaging materials for repeated reuse.

2) Materials

Use recycled materials for packaging and minimizes weight.

3) Marking

Mark packaging materials indelibly with the name of the materials.

4) Re-use

Re-use packaging wherever possible.

4.2.7 Easy Treatment for Disposal

Products shall be designed as far as possible to eliminate any impact they have on disposal facilities and the environment surrounding these facilities when intermediate treatment and final disposal of products (including packaging materials) are carried out.

4.3 Considerations of biodiversity conservation

It is essential to work with the supply chains to advance initiatives for promoting biodiversity conservation. The supplier should act for biodiversity conservation with product life cycle from procurement of materials, designing, manufacturing and distribution, through to use and end-of life.

4.4 Investigation of Suppliers' environmental activity

In order to promote Green Procurement, Anritsu will from time to time investigate suppliers' environmental activities especially in the following areas:

- 1) Establishment of an environmental management system
- 2) Implementation of product assessments
- 3) Implementation of the management of chemical substances in products

※ All provided information will be held confidential.

5. Requirements for Substances with environmental impact

5.1 Requirements

- 1) All suppliers shall maintain a system that controls and/or restricts and/or eliminates the use of hazardous substances from materials/parts and processes to meet regulatory and industrial compliance requirements.

- 2) Suppliers of materials/parts to Anritsu shall provide data or declarations in a manner prescribed by Anritsu certifying that supplied materials/parts are in compliance with the requirements listed (ex. Standard format, Supplier Material Declaration).
- 3) The supplier is responsible for notifying Anritsu if nonconforming parts / material have been shipped to Anritsu and take necessary actions to correct the non-conformances.
- 4) In addition to requirements referenced in this section, all suppliers shall comply with any other legal and regulatory requirements applicable to any products provided to Anritsu.
- 5) Unless otherwise specified, the latest edition of the laws and regulations applies.
- 6) No Supplier of materials or parts to Anritsu shall effect any change that will alter compliance to the requirements as stated on declarations and listed in the following Section (5.2) without express written approval from Anritsu.

5.2 Substance with Environmental Impact and Referenced laws or regulations

5.2.1 General Information

The threshold limit values are shown as either “Intentionally Added”, ppm (parts per million) by weight per Homogeneous Material (e.g. for EU RoHS Directive) or ppm by weight of product (e.g. for REACH Regulation) as specified in the table.

A list of representative regulatory references is included after Tables.

5.2.2 The list of restrained substance for products

The restrained substance and threshold level for products is table 1, 2, 3.

Table 1. List of Banned Substances for materials/parts supplied to Anritsu

No.	Substance	Threshold	Reportable Application(s)	Regulatory References
1	Polybrominated Biphenyls (PBBs)	0.1% by weight (1000 ppm) of homogeneous materials	All	1
2	Polybrominated Diphenylethers (PBDEs)	0.1% by weight (1000 ppm) of homogeneous materials	All	1
3	Polychlorinated Biphenyls(PCBs) and specific substitutes *1	Intentionally added	All	2, 4

4	Polychlorinated Terphenyls (PCTs)	0.05% by weight (50 ppm)	All	2
5	Polychlorinated Naphthalenes (PCN)	Intentionally added	All	4
6	Shortchain Chlorinated Paraffins (C10-13)	Intentionally added or 0.1% by weight (1000ppm) of the product	All	3
7	Tributyl Tin Oxide (TBTO)	Intentionally added or 0.1% by weight (1000ppm) of the product	All	3 4
8	Tri-substituted organostannic Compounds	Intentionally added or 0.1% by weight (1000 ppm) of tin in the part	All	2, 4
9	Perfluorooctane sulfonate (PFOS)	· Intentionally added or 0.1% by weight (1000 ppm) of the part · Containing above 1µg/m ² of PFOS in cladding for coated material	All	4, 5
10	Asbestos	Intentionally added	All	2
11	Azocolourants and azodyes which form certain aromatic amines *2	0.003% by weight (30 ppm) of the textile/leather product	Textiles and leather	2
12	Ozone Depleting Substances *3	Intentionally added	All	6, 7
13	Radioactive Substances	Intentionally added	All	8
14	Formaldehyde *4	0.0075%by weight (75 ppm) of textile product	Textiles	9
		Addition intentional	Composite wood (plywood, particle board, MDF) products or Components	10
15	Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl) (CAS No. 3846-71-7)	Intentionally added or 0.1% by weight (1000ppm) of the product	All	4
16	Dimethyl fumarate (CAS No. 624-49-7)	0.00001% by weight (0.1 ppm) of the product	All	11
17	Hexabromocyclododecane (HBCDD) and all major diastereoisomers	Intentionally added or 0.1% by weight (1000ppm) of the product	All	4
18	Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	0.1% by weight (1000ppm) of the part or 1 µg/m ² of seat material	All	19
19	Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST)	Intentionally added	All	20
Application: All products				

*1: Polychlorinated Biphenyls and specific substitutes are shown in Annex

- *2: Azocolourants and Azodyes that may form specific amines on direct skin contact and for extended periods of time are covered. The detailed material name of specific amine is shown in Annex 2.
- *3: Ozone-depleting substances are shown in Annex 3.
- *4: Composite wood products of the following are excluded. Classification of formaldehyde-emitting building materials Symbol F ☆☆☆☆ of thing(Japan's Building Standards Act).

Table 2. List of Conditional Banned Substances

No.	Substance	Threshold	Reportable Application(s)	Regulatory References
1	Cadmium and Cadmium Compounds *5	0.01% by weight (100 ppm) of homogeneous materials	All except the exemptions	1
2	Hexavalent Chromium Compounds *5	0.1% by weight (1000 ppm) of homogeneous materials	All except the exemptions	1
3	Lead and Lead Compounds *5	0.1% by weight (1000 ppm) of homogeneous materials	All except the exemptions	1
4	Mercury and Mercury Compounds *5	Intentionally added or 0.1% by weight (1000 ppm) of homogeneous materials	All except the exemptions	1
5	Bis (2-ethylhexyl)phthalate (DEHP)	0.1% by weight (1000 ppm) of homogeneous materials	All	1
6	Diisobutyl phthalate (DIBP)	0.1% by weight (1000 ppm) of homogeneous materials	All	1
7	Dibutyl phthalate (DBP)	0.1% by weight (1000 ppm) of homogeneous materials	All	1
8	Benzyl butyl phthalate (BBP)	0.1% by weight (1000 ppm) of homogeneous materials	All	1
9	Cobalt dichloride (CoCl ₂)	Intentionally added	The indicator of desiccating agents	3
10	Fluorinated greenhouse gases (PFC, SF ₆ , HFC) *6	Intentionally added	Use of Annex II of EU rule No842/2006	12
11	Dibutyltin (DBT) compounds	0.1% by weight (1000 ppm) of tin in the part	All	2

12	Diocetyl tin (DOT) compounds	0.1% by weight (1000 ppm) of tin in the part	<ul style="list-style-type: none"> · textile and leather articles intended to come into contact with the skin, · two-component room temperature vulcanisation moulding kits (RTV-2 moulding kits) 	2
13	Polycyclic-aromatic hydrocarbons (PAH)	0.00005% by weight (0.5 ppm) of the rubber or plastic component	long-term repetitive contact with the human skin	2
14	4,4'-isopropylidenediphenol	Intentionally added	Thermal paper	2
Application: In such specifications apply to the products listed environmental compliance (such as the RoHS compatible).				

*5: The substances to be exempted and threshold details are specified in EU RoHS Directive. For details, refer to Annex 5 and Annex 6.

*6: Refer to Annex 4 for scope of the substances.

Table 3. List of Controlled Substances

No.	Substance	Threshold	Reportable Application(s)	Regulatory References
1	Nickel and Nickel Compounds	Intentionally added	All, where prolonged skin contact is expected	2
2	Beryllium Oxide (BeO) (CAS No. 1304-56-9)	0.1 % by weight (1000 ppm) of the product	All	13
3	Brominated flame retardants (other than PBBs, PBDEs, or HBCDD)	<ul style="list-style-type: none"> · 0.1% total bromine content by weight (1000 ppm) in the plastic material · 0.09% total bromine content by weight (900 ppm) in the laminate 	<ul style="list-style-type: none"> · Plastic · Printed wiring board laminate 	14, 15, 16
4	Chlorinated flame retardants	<ul style="list-style-type: none"> · 0.1% total chlorine content by weight (1000 ppm) in the plastic material · 0.09% total chlorine content by weight (900 ppm) in the laminate 	<ul style="list-style-type: none"> · Plastic · Printed wiring board laminate 	14, 15, 16
5	Perchlorates	0.0000006 % by weight (0.006ppm) of the product	All	17
6	Selected Phthalates Group 2 (DIDP, DINP, DNOP) *7	0.1% by weight (1000 ppm) in plasticized material	All	2
7	Diisononyl phthalate (DINP)	Intentionally added	All	18
8	Di-isodecyl phthalate (DIDP)	Intentionally added	All	18
9	Di-n-hexyl Phthalate (DnHP)	Intentionally added	All	18
10	SVHC of the REACH *8	0.1 % by weight (1000 ppm) of the product	All	3

*7: As for No. 7, 8 threshold, a value of the content of the quality of each three lines of a linked poem in total is 1,000ppm

*8: SVHC in of EU Regulation (EC) No 1907/2006, refer to ECHA website:
<http://echa.europa.eu/web/guest/candidate-list-table>

If the concentrations of SVHC additional substances are determined, notify Anritsu of this fact immediately.

Regulatory references for Table 1,2, and 3:

1. EU RoHS Directive : EU Directive 2011/65/EU on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment.
2. REACH Regulation : EU Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals.
: Annex XVII is Restriction list in the Regulation
3. REACH Regulation : EU Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals.
: SVHC is Substance(s) of Very High Concern, Supplier shall provide a customer to communicate information on the substances in articles
4. Japan Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
5. EU Commission Regulation (EU) No 757/2010 amending Regulation (EC) No 850/2004 on persistent organic pollutants as regards Annexes I and III
6. Montreal Protocol : Montreal Protocol on Substances that Deplete the Ozone Layer,
7. EU Regulation (EC) No. 1005/2009 and (EC) No. 2037/2000 on Substances that deplete the ozone layer.
8. Japan Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material, and Reactors
9. US/CA CARB Rule; California Regulation 93120 Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products.
10. Austria - BGB I 1990/194: Formaldehydverordnung, §2, 12/2/1990
11. EU Commission Decision 2009/251/EC Products containing the biocide dimethylfumarate are not placed or made available on the market
12. EU Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases
13. DIGITIALEUROPE (formerly EICTA), CECED and EERA Joint Position Guidance
14. JS709; Joint JEDEC/ECA Standard, Defining "LOW-HALOGEN" Electronic Products
15. IPC-4101; IPC standard, Specification for Base Materials for Rigid and Multilayer Printed Boards
16. IEC 61249-2-21; IEC standard, Materials for printed boards and other interconnecting structures - Part 2-21
17. US/ California - Perchlorate Contamination Prevention Act of 2003
18. Proposition 65 of California
19. Norwegian products regulation Section 2-32
20. Prohibition of Certain Toxic Substances Regulations, 2012, CANADA

5.2.3 Banned Substances for Batteries

Table 4. List of Banned Substances for Batteries

No.	Substance	Threshold	Reportable Application(s)	Regulatory References
1	Cadmium and Cadmium Compounds	0.002% by weight (20 ppm) of cadmium in battery	All Batteries	1

2	Mercury and Mercury Compounds	An alkaline zinc manganese battery with a mercury concentration greater than or equal to 0.0001% (1 ppm) by weight	alkaline zinc manganese battery	2
		0.0005% by weight (5 ppm) of mercury in the battery	All Batteries	1
Application: In such specifications apply to the Batteries listed environmental compliance. Parts which constitute except the cell follow the standards specified in Table1 and 2 and 3 also.				

Regulatory references for Table 4:

1. EU Battery Directive; EU Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators
2. Chinese Standard GB 24427-2009 Limitation of mercury, cadmium and lead contents for alkaline and non-alkaline zinc manganese dioxide batteries.

5.2.4 Banned Substances for Packaging Materials

Table 5. List of Banned Substances for Packaging Materials

No.	Substance	Threshold	Reportable Application(s)	Regulatory References
1	Specific Heavy Metals Cd/Cd Compounds; Pb/Pb Compounds; Hg/Hg Compounds; CrVI Compounds	Intentionally added or 0.01% by weight (100 ppm) of the sum of Cd, Hg, Pb & CrVI in the material	All Packaging Materials	1
Application: In such specifications apply to the Packaging Materials listed environmental compliance. Articles that satisfy not only the rules specified in Table1 and 2 and 3, but also the following conditions determined by the regulations of relevant laws.				

Regulatory references for Table 5

1. EU Packaging Directive; EU Directive 94/62/EC on packaging and packaging waste

5.2.5 Substances in Manufacturing

Table 6. List of Banned Substances in Manufacturing

No.	Substance	Regulatory References
1	Chlorofluorocarbons (CFCs)	Montreal Protocol Annex A Group I Montreal Protocol Annex B Group I
2	Halons	Montreal Protocol Annex A Group II
3	Carbon tetrachloride	Montreal Protocol Annex B Group II
4	1,1,1-Trichloroethane	Montreal Protocol Annex B Group III
5	Hydrobromofluorocarbons (HBFCs)	Montreal Protocol Annex C Group I
6	Bromochloromethane	Montreal Protocol Annex C Group III
7	Methyl bromide	Montreal Protocol Annex E Group I
Application: All products manufacturing.		

Table 7. List of Suppressed Substances

No.	Substance	Criteria
1	Hydrochlorofluorocarbons (HCFCs)	Montreal Protocol Annex C Group II
2	Trichloroethylene	Japan : Waste disposal and public Cleansing Law Japan: Water pollution control Law
3	Tetrachloroethylen	Japan : Waste disposal and public Cleansing Law Japan: Water pollution control Law
4	Dichloromethane	Japan : Waste disposal and public Cleansing Law Japan: Water pollution control Law
5	Hydrofluorocarbons (HFCs)	Japan : Lawconcerning the promotion of the measures to cope with global warming
6	Perfluorocarbons (PFCs)	Japan: Lawconcerning the promotion of the measures to cope with global warming
7	Sulfurhexafluoride (SF6)	Japan : Lawconcerning the promotion of the measures to cope with global warming
Note: These substances in Table 7 are applied to only Anritsu and Electronic Manufacturing Service (EMS) as substances that must be managed in manufacturing excluding for purchased parts.		

6. Requirements for Substances under control of product safety

6.1 Requirements

- 1) All suppliers shall comply with the restrictive condition shown in Section (6.2). If do not meet them, suppliers shall approach Anritsu with the treatment after clarifying the condition found in materials/parts.
- 2) Suppliers of materials/parts to Anritsu shall pay constant attention to changing substances in materials/parts without permission which is called “silent change” in Japan.
- 3) Suppliers of materials/parts to Anritsu shall provide information about content condition of substances under control of product safety in materials/parts which are evidence of no containing or report of content condition and so on if Anritsu ask to provide it.
- 4) The supplier is responsible for notifying Anritsu if nonconforming parts / material to restriction shown in Section (6.2) have been shipped to Anritsu and take necessary actions to correct the non-conformances.
- 5) No Supplier of materials or parts to Anritsu shall effect any change that will alter compliance to the requirements as stated on declarations and listed in the following Section (6.2) without express written approval from Anritsu.

6.2 Substances under control of product safety

The restrained substance in products and restrictions which is specified in terms of

product safety by Anritsu is table 8.

Table 8. List of Substances under control of product safety

No.	Substance	Restriction	Threshold	Reportable Application(s)	Remarks
1	Red phosphorus	No containing	Intentionally added	Resinous material between different electrodes to isolate electrically	*1

*1: Red phosphorus is contained into resinous materials as flame retardant. Firing accident of electrical terminal such as DC plug because of Red phosphorus is reported frequently.

ANNEXES:**Annex 1**

Annex Table 1. List of Polychlorinated Biphenyls (PCBs) and specific substitutes

No.	Polychlorinated Biphenyls (PCBs)	CAS Numbers
1	Polychlorinated Biphenyls (all isomers and congeners)	1336-36-3
2	Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6
3	Monomethyl-dichloro-diphenylmethane (Ugilec 121, Ugilec 21)	81161-70-8
4	Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8

Annex 2

Annex Table 2. List of Azocolourants and azodyes which form certain aromatic amines

No.	Aromatic Amines	CAS Numbers
1	Biphenyl-4-ylamine	92-67-1
2	Benzidine	92-87-5
3	4-chloro-o-toluidine	95-69-2
4	2-naphthylamine	91-59-8
5	o-aminoazotoluene	97-56-3
6	5-nitro-o-toluidine	99-55-8
7	4-chloroaniline	106-47-8
8	4-methoxy-m-phenylenediamine	615-05-4
9	4,4'-methylenedianiline	101-77-9
10	3,3'-dichlorobenzidine	91-94-1
11	3,3'-dimethoxybenzidine	119-90-4
12	3,3'-dimethylbenzidine	119-93-7
13	4,4'-methylenedi-o-toluidine	838-88-0
14	6-methoxy-m-toluidine	120-71-8
15	4,4'-methylene-bis(2-chloroaniline)	101-14-4
16	4,4'-oxydianiline	101-80-4
17	4,4'-thiodianiline	139-65-1
18	o-toluidine	95-53-4
19	4-methyl-m-phenylenediamine	95-80-7
20	2,4,5-trimethylaniline	137-17-7
21	o-anisidine	90-04-0
22	4-amino azobenzene	60-09-3

Note: Restriction of REACH Regulation applies to azocolourants and azodyes that by reductive cleavage of azo groups may release one of the above 22 aromatic amines.

Annex 3

Annex Table 3. List of Ozone Depleting Substances

No.	Substance	Regulatory References
1	Chlorofluorocarbons (CFCs)	Montreal Protocol Annex A Group I Annex B Group I
2	Halons	Montreal Protocol Annex A Group II
3	Carbon tetrachloride	Montreal Protocol Annex B Group II
4	1,1,1-Trichloroethane	Montreal Protocol Annex B Group III
5	Hydrobromofluorocarbons (HBFCs)	Montreal Protocol Annex C Group I
6	Bromochloromethane	Montreal Protocol Annex C Group III
7	Methyl bromide	Montreal Protocol Annex E Group I
8	Hydrochlorofluorocarbons (HCFCs)	Montreal Protocol Annex C Group II
9	Halon-1202	EC No 757/2010 CAS No.75-61-6
10	Bromoethane	EC No 757/2010 CAS No.4-96-4
11	1-Bromopropane	EC No 757/2010 CAS No.106-94-5
12	Trifluoroiodomethane	EC No 757/2010 CAS No.2314-97-8
13	Chloromethane	EC No 757/2010 CAS No.74-87-3

Annex 4

Scope of Fluorinated Greenhouse Gases

Fluorinated greenhouse gases must not be included in the equipment below If they are used in other equipment, any legal indications required should be reported to Anritsu.

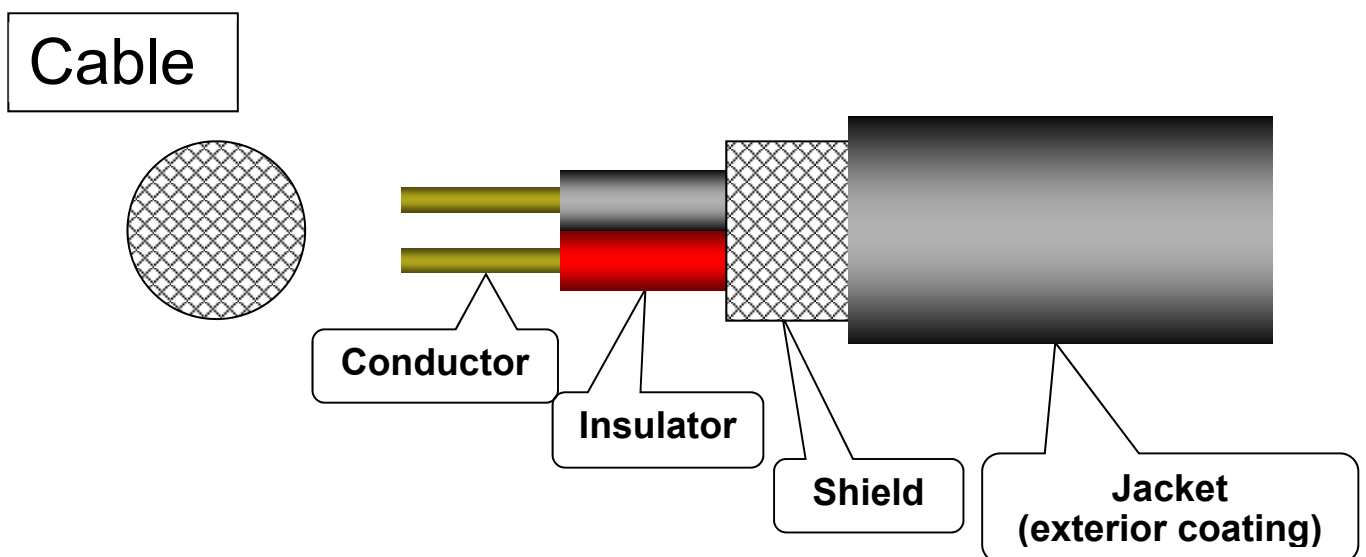
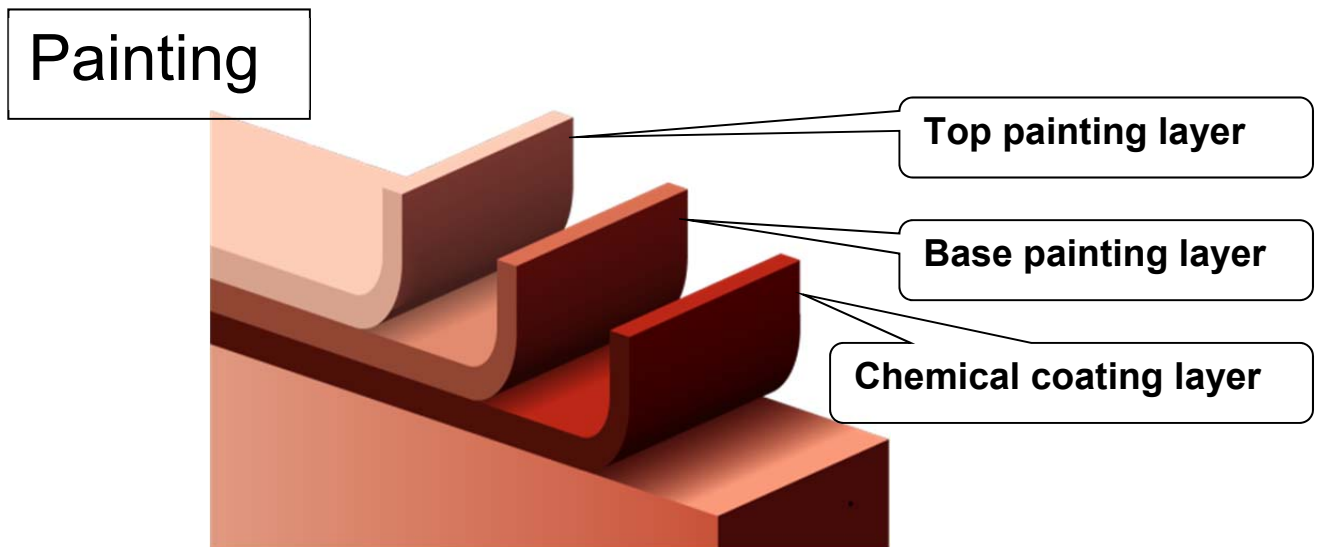
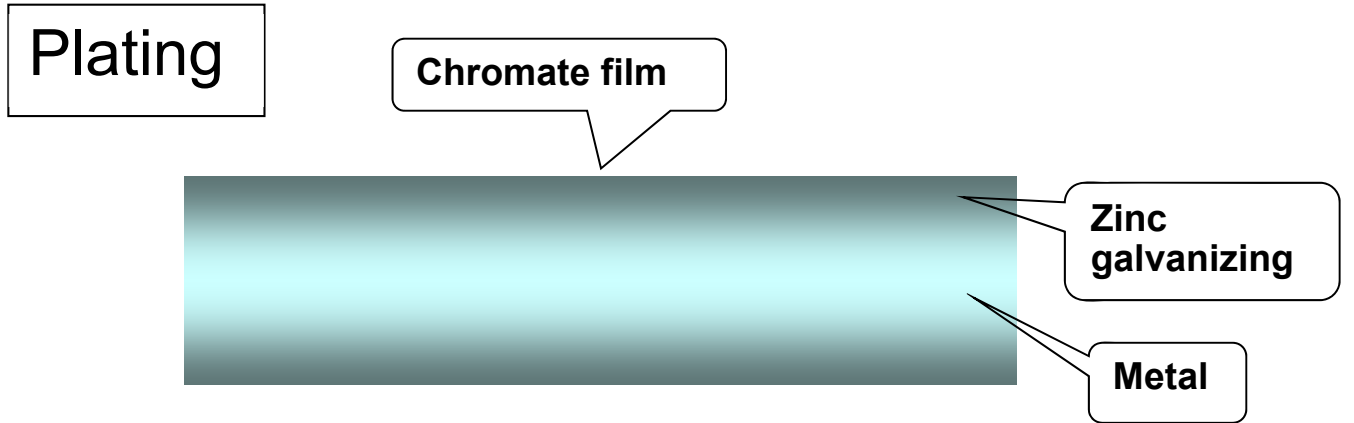
- Non-refillable containers
- Non-confined direct-evaporation systems containing refrigerants
- Fire protection systems and fire extinguishers
- Window (such as pair glass)
- Footwear
- Tires
- One component foams, except when required to meet national safety standards
- Novelty aerosols

Annex 5

Examples of homogeneous materials

Each material shown in the diagram is a homogeneous material.

(i.e. Chromate film is a homogeneous material, Zinc galvanizing is a homogeneous material and so on.)



Annex 6

Annex Table 4 List of the Annex III EU RoHS Directive exemptions.

Please follow the separate specification for exemptions of Annex IV EU RoHS Directive.

“Scope and dates of applicability” is only Category 3 and Category 9(industrial monitoring and control instruments).

Annex Table 4 Purpose of the RoHS Directive exemptions

NO	Exemption	Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a)	For general lighting purposes < 30 W: 2.5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2,5 mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes ≥ 30 W and < 50 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011
1(c)	For general lighting purposes ≥ 50 W and ≤ 150 W: 5 mg	
1(d)	For general lighting purposes ≥ 150 W: 15 mg	
1(e)	For general lighting purposes with circular or square structural shape and tube diameter < 17 mm: 7 mg	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
1(f)	For special purposes: 5 mg	
1(g)	For general lighting purposes < 30 W with a lifetime equal or above 20000 h: 3.5 mg	Expires on 31 December 2017
2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter > 9 mm (e.g. T2): 4 mg	Expires on 31 December 2011; 4 mg may be used per lamp after 31 December 2011
2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≥ 17 mm (e.g. T5): 3 mg	Expires on 31 December 2011; 3 mg may be used per lamp after 31 December 2011
2(a)(3)	Tri-band phosphor with normal lifetime and a tube diameter ≥ 17 mm and ≤ 28 mm (e.g. T8): 3.5 mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 3.5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a)(5)	Tri-band phosphor with long lifetime ($\geq 25\ 000$ h): 5 mg	Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(1)	Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg	Expires on 13 April 2012
2(b)(2)	Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016
2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9) : 15 mg	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps) : 15 mg	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	
3(a)	Short length (≥ 500 mm) : 3,5 mg	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011

NO	Exemption	Scope and dates of applicability
3(b)	Medium length (> 500 mm and < 1 500 mm) : 5 mg	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011
3(c)	Long length (> 1 500 mm) : 13 mg	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011
4(a)	Mercury in other low pressure discharge lamps (per lamp) : 15 mg	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
4(b)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60:	
4(b)-I	P < 155 W: 30 mg	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(b)-II	155 W < P < 405 W: 40 mg	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(b)-III	P > 405 W: 40 mg	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	
4(c)-I	P < 155 W: 25 mg	No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011
4(c)-II	155 W < P < 405 W: 30 mg	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(c)-III	P > 405 W: 40 mg	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in the Annex of Directive 2011/65/EU	
4(g)	Mercury in hand-crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and light artwork, where the mercury content shall be limited as follows:- (a) 20 mg per electrode pair + 0,3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C; (b) 15 mg per electrode pair + 0,24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications.	Expires on 31 December 2018
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	Expires (Category 3) Expires on 21 July 2024 (Category 9 (industrial monitoring and control instruments))

NO	Exemption	Scope and dates of applicability
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 galvanised steel components containing up to 0,2 % lead by weight	Expires on 21 July 2021 (Category 3)
6(b)	Lead as an alloying element in aluminum containing up to 0,4 % lead by weight	Expires (Category 3) Expires on 21 July 2024 (Category 9 (industrial monitoring and control instruments))
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 (Category 3)
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 (Category 3)
6(c)	Copper alloy containing up to 4 % lead by weight	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
7(a)	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)	Applies to category 3 (except applications covered by point 24 of this Annex) and expires on 21 July 2021. For category 9 industrial monitoring and control instruments expires on 21 July 2024.
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications	
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	Applies to category 3 (except applications covered under point 34) and expires on 21 July 2021. For category 9 industrial monitoring and control instruments expires on 21 July 2024.
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Does not apply to applications covered by point 7(c)-I and 7(c)-IV of this Annex. Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
7(c)- IV	Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
8(a)	Cadmium and its compounds in one shot pellet type thermal cut offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
8(b)	Cadmium and its compounds in electrical contacts	Expires (Category 3) Expires on 21 July 2024 (Category 9 (industrial monitoring and control instruments))

NO	Exemption	Scope and dates of applicability
8(b)-I	Cadmium and its compounds in electrical contacts used in: <ul style="list-style-type: none"> • circuit breakers; • thermal sensing controls; • thermal motor protectors (excluding hermetic thermal motor protectors); • AC switches rated at: <ul style="list-style-type: none"> - 6A and more at 250V AC and more; or - 12A and more at 125V AC and more; • DC switches rated at 20A and more at 18V DC and more; and • switches for use at voltage supply frequency \geq 200Hz." 	Applies to category 3 and expires on 21 July 2021.
9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	Expires (Category 3) Expires on 21 July 2024 (Category 9 (industrial monitoring and control instruments))
11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(b)	Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a)	Lead in white glasses used for optical applications	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	See 13(b)-(I) to (III) (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
13(b)-(I)	Lead in ion coloured optical filter glass types	Expires on 21 July 2021 (Category 3)
13(b)-(II)	Cadmium in striking optical filter glass types; excluding applications falling under point 39 of this Annex	
13(b)-(III)	Cadmium and lead in glazes used for reflectance standards	
14	Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	Expires (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
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"> • a semiconductor technology node of 90nm or larger; • a single die of 300mm² or larger in any semiconductor technology node; • stacked die packages with die of 300mm² or larger, or silicon interposers of 300mm² or larger. 	Applies to category 3 and expires on 21 July 2021.

NO	Exemption	Scope and dates of applicability
16	Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(a)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba)₂MgSi₂O₇:Pb)	Expires on 1 January 2011
18(b)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi ₂ O ₅ :Pb)	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
18(b)-I	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps containing phosphors such as BSP (BaSi ₂ O ₅ :Pb) when used in medical phototherapy equipment	Applies to categories 5 and 8, and expires on 21 July 2021.
19	Lead with PbBiSn Hg and PbInSn Hg in specific compositions as main amalgam and with PbSn Hg as auxiliary amalgam in very compact energy saving lamps (ESL)	Expires on 1 June 2011
20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	Expires (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
21(a)	Cadmium when used in colour printed glass to provide filtering functions, used as a component in lighting applications installed in displays and control panels of EEE	Applies to category 3 except applications covered by entry 21(b) or entry 39 and expires on 21 July 2021.
21(b)	Cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	Applies to category 3 except applications covered by entry 21(a) or 39 and expires on 21 July 2021.
21(c)	Lead in printing inks for the application of enamels on other than borosilicate glasses	Applies to category 3 and expires on 21 July 2021.
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
26	Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
27	Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers	Expired on 24 September 2010
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)	

NO	Exemption	Scope and dates of applicability
30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high powered loudspeakers with sound pressure levels of 100 dB (A) and more	
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
36	Mercury used as a cathode sputtering inhibitor in DC-plasma displays with a content up to 30 mg per display	Expired on 1 July 2010
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	Expires on 21 July 2021 (Category 3) Expires on 21 July 2024 (Category 9(industrial monitoring and control instruments))
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39(a)	Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (< 0,2 µg Cd per mm ² of display screen area)	Expires on 31 October 2019
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013
41	Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council)	Expires on 31 December 2018
42	Lead in bearings and bushes of diesel or gaseous fuel powered internal combustion engines applied in non-road professional use equipment: – with engine total displacement ≥ 15 litres; or – with engine total displacement < 15 litres and the engine is designed to operate in applications where the time between signal to start and full load is required to be less than 10 seconds; or regular maintenance is typically performed in a harsh and dirty outdoor environment, such as mining, construction, and agriculture applications.	Applies to category 11 and expires on 21 July 2024.

NO	Exemption	Scope and dates of applicability
43	<p>Bis(2-ethylhexyl) phthalate in rubber components in engine systems, designed for use in equipment that is not intended solely for consumer use and provided that no plasticised material comes into contact with human mucous membranes or into prolonged contact with human skin and the concentration value of bis(2-ethylhexyl) phthalate does not exceed:</p> <p>(a) 30 % by weight of the rubber for</p> <p>(i) gasket coatings;</p> <p>(ii) solid-rubber gaskets; or</p> <p>(iii) rubber components including in assemblies of at least three components using electrical, mechanical or hydraulic energy to do work, and attached to the engine.</p> <p>(b) 10 % by weight of the rubber for rubber-containing components not referred to in point (a).</p> <p>For the purposes of this entry, 'prolonged contact with human skin' means continuous contact of more than 10 minutes duration or intermittent contact over a period of 30 minutes, per day.</p>	Applies to category 11 and expires on 21 July 2024.
44	<p>Lead in solder of sensors, actuators, and engine control units of combustion engines within the scope of Regulation (EU) 2016/1628 of the European Parliament and of the Council, installed in equipment used at fixed positions while in operation which is designed for professionals, but also used by non-professional users</p>	Applies to category 11 and expires on 21 July 2024.

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For Further Information:

Anritsu Corporation <http://www.anritsu.com/>

Global Procurement Operation Division

Global Procurement Department CSR Compliance Team

TEL. +81-46-296-6550 FAX. +81-46-225-8359

Environment and Quality Promotion Department Environment Promotion Team

TEL. +81-46-296-6503 FAX. +81-46-225-8301

Anritsu Company <http://www.anritsu.com/>

Procurement Department

TEL. +01-408-778-2000

Quality Department

TEL. +01-408-778-2000