

First Edition 14th July, 2006
3rd Edition: 15th February, 2008
Doc. Number: JE-P1AB06021-03

Anritsu Group Manual for Conditionally Banned Substances

Anritsu Corporation
Procurement Department
Environmental Promotion Center

1. Purpose

Anritsu group enacted "Anritsu group green procurement guidelines". Anritsu asks the suppliers to restrict the hazardous substances in material, parts, and units, etc. that compose the Anritsu products. This manual aims to state how suppliers investigate and answer Conditional Banned Substances.

This manual is based on the RoHS Directive, 94/62/EEC and 91/157/EEC, but it should be noted that this manual is subject to revision due to subsequent changes in the laws.

2. Definition of Conditional Banned Substances

Substances that must not be contained in any products, and have the material ban deadline or the exemption set by laws, refer to Table 1.

Table 1. List of Conditional Banned Substances

No.	Substance
1	Mercury and Mercury Compounds
2	Cadmium and Cadmium Compounds
3	Lead and Lead Compounds
4	Hexavalent Chromium

3. Maximum Concentration Values and Homogeneous material of Conditional Banned Substances

3-1 Maximum Concentration Values

If homogeneous material includes conditional Banned Substance, maximum concentration Values is following;

Lead (Pb), Mercury (Hg) and Hexavalent chromium (Cr⁶⁺) ⇒ less than 1000ppm

Cadmium (Cd) ⇒ less than 100ppm

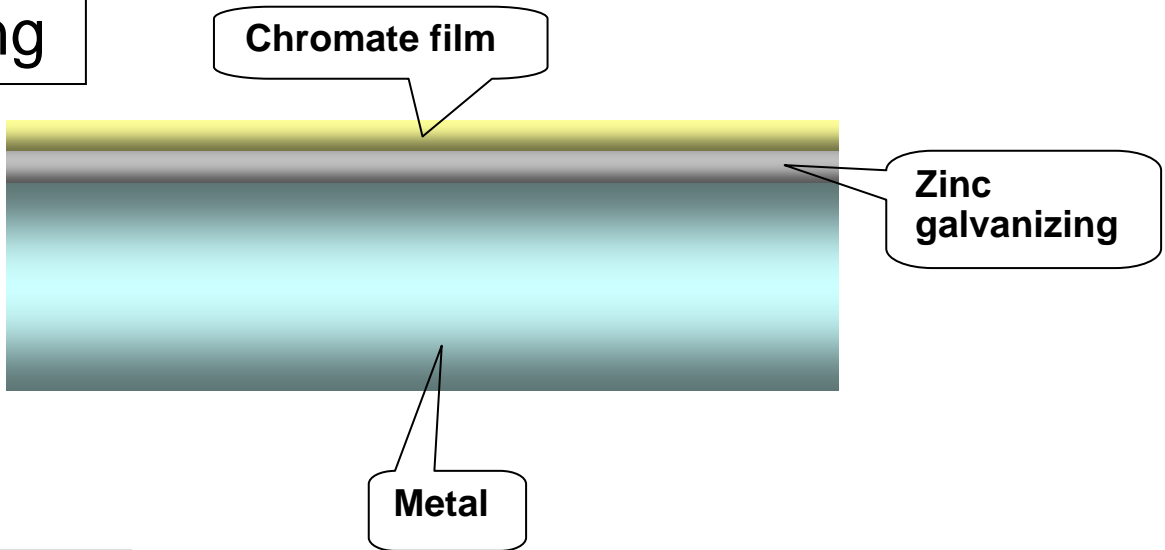
The total weight of cadmium, lead, mercury and hexavalent chromium in packaging materials, which Anritsu will ship, should be 100ppm or less. And the weight of mercury in all batteries or accumulators except button batteries should be 5ppm or less.

3-2 Definition of Homogeneous material

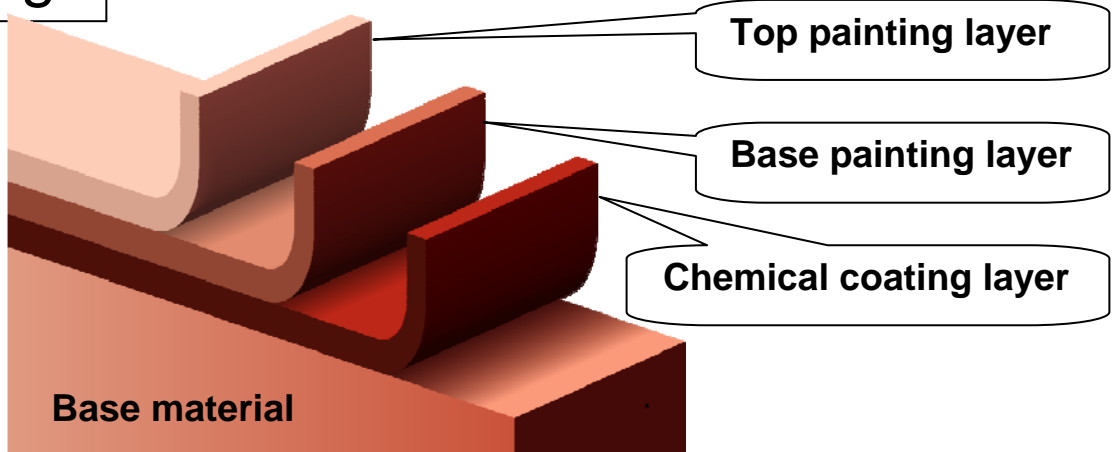
'Homogeneous material' means a material that cannot be mechanically disjointed into different materials. The term 'mechanically disjointed' means that the materials can, in principle, be separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes. (Examples): plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings.

Examples of homogeneous materials

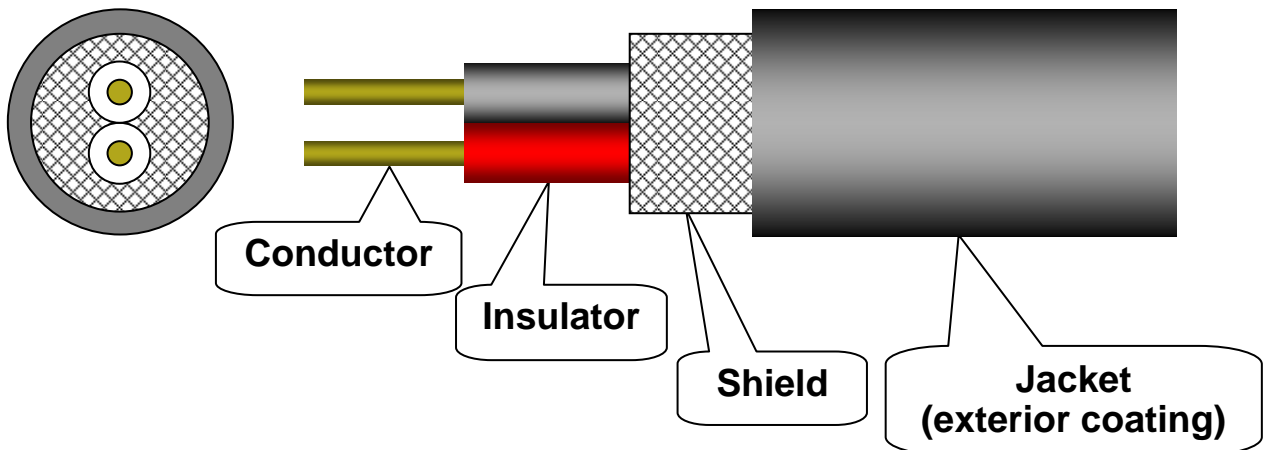
Plating



Painting



Cable



4. Exemption

The RoHS Directive has exemptions for some specific applications where no suitable alternative in regard to “Conditional Banned Substances in materials, parts, and units”. If RoHS Directive approves the exemption, Anritsu agrees on the exemption. It should be noted that this exemption is subject to revision due to subsequent changes in the RoHS Directive after April 1st, 2007.

1. Mercury in compact fluorescent lamps not exceeding 5 mg per lamp.
2. Mercury in straight fluorescent lamps for general purposes not exceeding:
 - halophosphate 10 mg
 - triphosphate with normal lifetime 5 mg
 - triphosphate with long lifetime 8 mg.
3. Mercury in straight fluorescent lamps for special purposes.
4. Mercury in other lamps not specifically mentioned in this Annex.
5. Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.
6. Lead as an alloying element in steel containing up to 0,35 % lead by weight, aluminium containing up to 0,4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.
7. - Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications,
Note: Because this exemption has the possibility to be built in the equipment of other categories, Anritsu group decided to exclude it.
 - lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead),
 - lead in electronic ceramic parts (e.g. piezoelectronic devices).’;
8. Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations.
9. Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.
- 9b. Lead in lead-bronze bearing shells and bushes
11. Lead used in compliant pin connector systems.
12. Lead as a coating material for the thermal conduction module c-ring.
13. Lead and cadmium in optical and filter glass.

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.
15. Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages.
16. Lead in linear incandescent lamps with silicate coated tubes.
17. Lead halide as radiant agent in High Density Discharge (HID) lamps used for professional reprography applications.
18. Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as tanning lamps containing phosphors such as BSP (BaSi₂O₅:Pb) as well as when used as speciality lamps for diazo-printing reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba)₂MgSi₂O₇:Pb).
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).
20. Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCD).
21. Lead and cadmium in printing inks for the application of enamels on borosilicate glass.
22. Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communications systems.
23. Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with copper lead-frames.
24. Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors.
25. Lead oxide in plasma display panels (PDP) and surface conduction electron emitter displays (SED) used in structural elements; notably in the front and rear glass dielectric layer, the bus electrode, the black stripe, the address electrode, the barrier ribs, the seal frit and frit ring as well as in print pastes.
26. Lead oxide in the glass envelope of Black Light Blue (BLB) lamps.
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.
28. Hexavalent chromium in corrosive preventive coatings of unpainted metal sheetings and fasteners used for corrosion protection and Electromagnetic Interface Shielding

in equipment falling under category three of Directive 2002/96/EC (IT and telecommunications equipment). Exemption granted until 1 July 2007.

29. Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3, and 4) of Council Directive 69/493/EEC.