

The European Union legislation known as the Entitled Waste Electrical & Electronic Equipment (WEEE) and Restriction of Hazardous substances (RoHS) have issued new directives for environmental health & safety protection regarding selective treatment for materials and components of waste electrical and electronic equipment. In support of our commitment to comply with these directives, we at Falco understand the direct link between these important issues and the quality of our products.

These directives are aimed at reducing the hazardous homogeneous materials content in electronic products as well as increasing the recycling efforts for these products and take effect July 1, 2006. None of our products are to intentionally use any of the following substances in the homogeneous materials:

- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ethers (PBDE)
- Hexavalent chromium
- Mercury
- Lead
- Cadmium

It is our policy to reject from our vendors any material containing them in levels above the limit proposed by RoHS (0.1% by weight per homogeneous material for lead, hexavalent chromium, mercury, PBBs and PBDEs and 0.01% by weight and per homogeneous material for cadmium).

For the control of this issue we require SGS reports from each vendor and also for other substances non regulated by RoHS we count with a "Supplier Survey For Statement Of Hazardous Material Content" to understand how they are managing environmental legal compliance and the hazardous materials that are contained in the components and products that they supply to us.

RoHS Level in Falco

Falco has defined RoHS Products in two levels identified as RoHS I & RoHS II (Super RoHS). This second categorization has been designed based on several incoming surveys from our customers where other substances other than the six required by RoHS, are defined as banned, controlled and/or reported.

RoHS I: Our Products identified with this level comply with the limits of the hazardous substances as described by directive 2002/95/EC.

RoHS II: or Super RoHS, our products identified with this level are in compliance with the maximum limits of the hazardous substances required in RoHS level I plus the substances for environmental health & safety protection as highlighted in Table (1) shown further on this text.

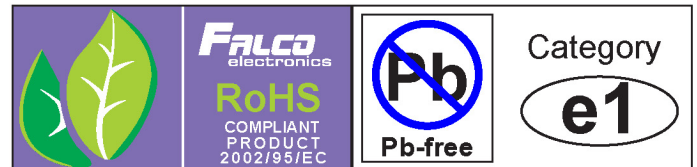
Tin Whisker Qualification and Mitigation Process

A potential reliability problem exists with lead free tin plated components (especially in 100% Sn) due to the phenomenon of "tin-whiskering" which may cause electrical shorting between leads of the same component or adjacent components, especially for fine pitch components or closely spaced parts. At this time, there is no sure method to guarantee the elimination of tin whiskers over the life of a product. FALCO realizes the importance of avoiding potential tin whiskers and thus we are using a Lead free alloy that is exempted from the tin whisker test as per the National Electronics Manufacturing Initiative (NEMI). The preferred Falco alloy for second level interconnection are:

1. Matte tin (Sn 100%, carbon content 0.005%-0.050% and Grain size 1µm-5µm), 8µm of tin film minimum or thicker.
2. Hot dip SnAgCu alloy.

Product Identification

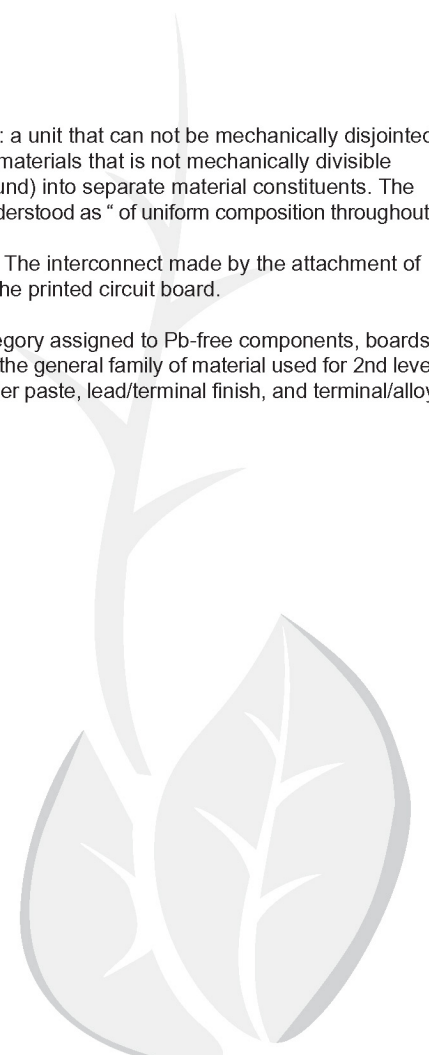
The marking of Falco Products is based on JEDEC Standard No.97, which requires to provide a distinctive symbol and labeling format to identify those assemblies, components or devices that are totally Pb-free. It also provides for identification of certain types of Pb free materials. Falco Product identification will show Pb Free category, RoHS compliance and Pb-free identification label in the outer Box. Please contact sales department for any further requirement.



Category	Alloy
e1	SnAgCu
e2	Other alloys (ie. SnCu, SnAg, SnAgCuX, etc.) (no Bi or Zn)
e3	Sn
e4	Preplated (ie. Ag, Au, NiPd, NiPdAu)
e5	SnZn, SnZnx (no Bi)
e6	Contains Bi

Definitions

1. Homogeneous material: a unit that can not be mechanically disjoined in single materials or any materials that is not mechanically divisible (disassembled, cut or ground) into separate material constituents. The term "homogeneous" is understood as "of uniform composition throughout"
2. 2nd Level interconnect: The interconnect made by the attachment of the device/component to the printed circuit board.
3. Pb-free category: A category assigned to Pb-free components, boards, and assemblies indicating the general family of material used for 2nd level interconnect including solder paste, lead/terminal finish, and terminal/alloy solder balls.



Excerpt of restrictions on substances from legal provisions for special applications in electric and electronic products					
RoHS Level	No.	Substance	PPM Limit	European Community Regulation	Other countries Regulations
RoHS I	1	Lead and its Compounds	1,000	European Community: Directive 2002/95/EC, Directive 2002/96/EC, Directive 89/677/EEC (adds to Directive 76/769/EEC).	US Regulations an heavy metal in packaging, California Proposition 65
	2	Mercury and its Compounds	1,000	European Community: Directive 2002/95/EC, Directive 2002/96/EC, Directive 91/338/EEC (adds to Directive 76/769/EEC);	US Regulations an heavy metal in packaging, Swede SFS 1996:319.
	3	Cadmium and its Compounds	100	European Community: Directive 2002/95/EC, Directive 2002/96/EC, Directive 91/338/EEC (adds to Directive 76/769/EEC).	Danish Law, US Regulations an heavy metal in packaging
	4	Hexavalent Chromium and its Compounds	1,000	European Community: Directive 2002/95/EC, Directive 2002/96/EC, Directive 91/338/EEC	US Regulations an heavy metal in packaging
	5	Polybrominated Biphenyls (PBBs)	1,000	European Community: Directive 2002/95/EC, Directive 85/467/EEC (adds to Directive 76/769/EEC),	Germany Law
	6	Polybrominated Biphenyls Ethers (PBDEs)	1,000	European Community: Directive 2002/95/EC, Directive 85/467/EEC (adds to Directive 76/769/EEC),	Germany Law
RoHS II (SUPER-RoHS)	1 to 6	All the substances contained in RoHS I	same limits as above	same as above	same as above
	7	Asbestos and Asbestos Materials	1,000 PPM	European Community: Directive 76/769/EEC,	JIG 101 , Germany Law, US: Toxic Substances Control Act
	8	Nickel and its Compounds	1,000	European Community: Directive 94/27/EEC (adds to Directive 76/769/EEC).	JIG 101
	9	Polychlorinated Biphenyls (PCB) and Terphenyls (PCT), Polychlorinated phenyls	Banned	European Community: Directive 85/467/EEC (adds to Directive 76/769/EEC);	Stockholm Convention; Germany Law, US: TSCA, Japanese Law
	10	Short-chain Chlorinated Paraffins (CP) (C 10-13, Cl \geq 50 wt%)	1,000	European Community: Directive 2004/45/EC (adds to Directive 76/769/EEC)	
	11	Polychlorinated Naphthalenes (PCN)	Banned	European Community: Directive 76/769/EEC	Japanese Law
	12	Mirex (Perchlordecone)	Banned		Stockholm Convention
	13	Halogenated flame retardants/ additives	Reportable		Customer's Survey
	14	Tetrabromobisphenol-A-bis-(2,3-dibromopropylether) (TBBP-A-bis) -(2,3-)(TBBP-A-bis)	1,000		JIG 101
	15	Formaldehyde	1,000		Germany Law
	16	Organic tin compounds	Reportable		Japanese Law
	17	Azo Compounds	Controlled	European Community: Directive 85/467/EEC (adds to Directive 76/769/EEC)	
	18	Polyvinyl chloride (PVC) and its PVC blends	1,000		JIG Annex B
	19	Hexachlorobenzene (C ₆ Cl ₆)	Banned		Stockholm Convention
	20	Aldrin	Banned		Stockholm Convention
	21	Dieldrin	Banned		Stockholm Convention
	22	Endrin	Banned		Stockholm Convention
	23	DDT	Banned		Stockholm Convention
	24	Chlordane	Banned		Stockholm Convention
	25	N-p-phenylenediamine	Banned		Jeita: Green Procurement Survey Standardization Council
	26	2,4,6-tritertiarybutylphenol	Banned		Jeita: Green Procurement Survey Standardization Council
	27	Cyanaides	Controlled		Germany Law
	28	Arsenic and its Compounds	Reportable	European Community: Directive 76/769/EEC,	Germany Law, JIG 101
	29	Selenium and its Compounds	Reportable		JIG 101
	30	Beryllium and its Compounds	Reportable		JIG 101
	31	Antimony and its Compounds	Reportable		JIG 101
	32	Cobalt and its Compounds	Reportable		Jeita: Green Procurement Survey Standardization Council
	33	Tellurium and its Compounds	Reportable		Jeita: Green Procurement Survey Standardization Council
	34	Thallium and its Compounds	Reportable		Jeita: Green Procurement Survey Standardization Council
	35	Bismuth and its Compounds	Reportable		JIG 101
	36	Magnesium and magnesium alloys	Reportable		JIG Annex B
	37	Phthalates	Reportable		JIG 101 , Germany Law
	38	Radioactive substances	Banned		Japanese Law
	39	Ozone depleting substances (CFC, HCFC, Halon, etc.)	Banned	European Community: Directive 76/769/EEC;	Montreal Protocol; US: 1990 Clear Air Act, Japanese Law
	40	Diethylhexylphthalate (DEHP)	Controlled		Customer's Survey
	41	Aerosol, silicone based	Reportable		
42	Pentachlorophenol (PCP) & Creosotes	Banned	European Community: Directive 76/769/EEC;	Germany Law	
43	Triphenyl Phosphate (TPP)	Reportable		Customer's Survey	
44	Triaryl Phosphate (TAP)	Reportable		Customer's Survey	
45	Ethylene Glycol Ethers	Controlled		US: Clear Air Act	
46	Plastic, Expanded Polystyrene (EPS)	Banned		South Korea Packaging Restrictions	
47	Gold Compounds	Reportable		JIG Annex B	
48	Palladium Compounds	Reportable		JIG Annex B	
49	Silver Compounds	Reportable		JIG Annex B	
50	Copper Compounds	Reportable		JIG Annex B	
51	Brominated Flame Retardants other than PBDEs, PBBEs	Banned		JIG 101	
52	Organophosphorus compound	Reportable		Customer's Survey	
53	Halogenated Dioxins & Furans	Banned		Stockholm Convention, Germany Law	
54	Other Chlorinated Organic Compounds	Reportable		Customer's Survey	
54	Monomethyldibromo Diphenylmethane	Banned	-	Customer's Survey	
55	Monomethyldichloro Diphenylmethane.	Banned	-	Customer's Survey	
56	Monomethyltetrachloro Diphenylmethane	Banned	-	Customer's Survey	