



MICROCHIP

Certificate of Compliance

January 26, 2017

IC Semiconductors and Module Packaged Products

All Microchip IC product packages are designed to be in conformance with EU-RoHS Directive (2011/65/EU). Microchip certifies, to the best of its knowledge and understanding, its IC semiconductor and module products, are RoHS compliant and do not contain greater than: Lead (0,1%), Mercury (0,1%), Cadmium (0,01%), Hexavalent chromium (0,1%) Polybrominated biphenyls (PBB) (0,1%) Polybrominated diphenyl ethers (PBDE) including Deca-BDE or pentaBDE or octaBDE (0,1%), Bis(2-ethylhexyl) phthalate (DEHP) (0,1%), Butyl benzyl phthalate (BBP)(0,1%), Dibutyl phthalate (DBP) (0,1%), Diisobutyl phthalate (DIBP) (0,1%) and Hexabromocyclododecane (HBCDD) (0,1%).

The following table identifies all of the IC package types that claim an EU RoHS Exemptions.

EU Exempted Packages

Package Description	Pin Count	Package Type	Package Width Or Size3	Solder Composition (Terminal Finish)	EU RoHS Exemption
High-Power Dual Flatpack No-Lead/pin	08	PDFN	5x6x0.9mm	Matte Sn	7a
High-Power Dual Flatpack No-Lead/pin	08	PDFN	3.3x3.3x0.9mm	Matte Sn	7a
Ceramic Dual-In-Line-Pkg glass seal	08	CERDIP	.300in	SAC	7c-I
J-Leaded CERQUAD "Cerpac" glass seal	68	CERQUAD	.950x.950in	NiPdAu	7c-I
J-Leaded Ceramic Chip Carrier	68	JLCC	.950x.950in	Au Flash	7c-I
J-Lead CERQUAD WINDOWED	68	CERQUAD	.950x.950in	NiPdAu	7c-I
J-Leaded CERQUAD "Cerpac"glass seal	84	CERQUAD	1.15x1.15in	NiPdAu	7c-I
J-Lead CERQUAD	84	CERQUAD	1.15x1.15in	NiPdAu	7c-I
System In Package	08	SiP	22x27x12mm	SAC	7a, 7c-I
System In Package	08	SiP	22x39.5x12.5mm	SAC	7a, 7c-I
System In Package	08	SiP	22x39x12.5mm	SAC	7a, 7c-I
Transistor Outline	03	TO-263	-	Matte Sn	7a
Transistor Outline	07	TO-263	-	Matte Sn	7a
All Microchip Modules	Various	Various	Various	Various	7a, 7c-II

One can recognize products with High Temp Pb/Soft Solder Die Attach by the 'W' within the part number. Example: MIC2954-02WS or MIC2937A-3.3WU. Part numbers with a temperature code of "W" within the part number indicates "RoHS Compliant with exemption 7a".

Microchip together with our design partners, as well as the rest of the electronics industry have been working to locate and implement a solution, but no qualified solution exists today for the majority of these package types.

Microchip started working with an electronic industry consortia in June 2013 for extending these exemptions beyond the current July 2017 expiration date. The consortia submitted a renewal application to the European RoHS Technical Commission in January 2015. Additional information concerning the status of these exemptions renewal requests can be found at http://ec.europa.eu/environment/waste/rohs_eee/adaptation_en.htm



MICROCHIP

Certificate of Compliance

January 26, 2017

China RoHS

China Environmental Friendly Use Period (EFUP), logo 1 , applies when these plastic packaged pin finished semiconductor devices are shipped to the People's Republic of China. Logo 1 appears on the inner and outer shipping boxes. These packaged products are considered to be "RoHS - 6 of 6" complaint.

The Environmental Friendly Use Period (EFUP) logo 2 , and the associated declaration chart below applies when SnPb plated products are shipped to the People's Republic of China. Logo 2 and chart below appear on the shipping boxes.

表二 有毒有害物质或元素名称及含量标识样式 (Toxic Species or Toxic Element Name and Content Symbol)						
部件名称 (Name of Part)	有毒有害物质或元素 (Toxic Species or Element)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
	0	0	0	0	0	0

0: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求以下
 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006规定的限量要求
 本产品仅于外部电子管脚部位含有锡镀层
 Use only in accordance with Microchip Technology Incorporated's Technical Data Sheet for this product family.
 Microchip鼓励并建议客户将本产品依据所在地的相关法令, 进行贵金属的回收及再利用。切勿随意与一般垃圾丢弃
 Microchip Technology Incorporated encourages customers to recycle this product for precious metal value in accordance with local laws. Do not throw in trash.

SnPb Solder IC Semiconductors

Customers must specifically place custom orders for SnPb solder-plated packaged semiconductor products.

Substances of Concern:

Effective 1 July 2009, all of Microchip Semiconductor products became qualified as Halogen-Free as defined per IEC 61249-2-21:2003: Bromine (Br) ≤ 900 and Chlorine (Cl) ≤ 900 ppm by homogeneous material weight. With total Bromine (Br) plus Chlorine (Cl) content ≤ 1,500 ppm by homogeneous material weight. Additionally, Antimony Trioxide (Sb₂O₃) is also restricted to less than 1,000 ppm.

The mold compounds used by Microchip and its sub-contract assembly houses to assemble Microchip's semiconductor devices do not contain inorganic particulate red phosphorous.

Microchip Development Systems kits/boards, and RF, Bluetooth, and Touch Screen modules do not meet the requirements of IEC 61249-2-21:2003 listed above.

Microchip's semiconductor products may contain Nickel (Ni) in one or more of three applications:

- Nickel is one of the three plating materials used on the pins of the semiconductor, hence, the term Nickel (Ni) / Palladium (Pd) / Gold (Au) pin finish. The plating order is determined by the physical properties (adhesiveness) between each substance; Copper to Nickel to Palladium to Gold. Gold is the outer most substance, forming a shield around the Nickel and protecting against skin contact;
- Nickel is an alloying element in three lead frame alloys used by Microchip – C194, C7025, and A42; and
- Nickel may be impurity in the matte tin plating.

Each occurrence is compliant with the EU RoHS Directive 2015/863/EU. Please consult the specific Material Content Declaration (MCD) for the estimated substance content.



MICROCHIP

Certificate of Compliance

January 26, 2017

Stockholm Conventions and EU Directive 2006/122/EC of 12 December 2006 Regarding PFOS

Microchip Technology's products meet the requirements of the Stockholm Convention and chemical restrictions listed within the annexes. Some of Microchip's legacy products require usage of a photo-resist or anti-reflective coatings which is exempted under both for semiconductor manufacturing.

Rare Earth Metals

Microchip semiconductor products and modules do not contain or use any of the set of seventeen rare earth metals. However, Microchip does use Cerium as Cerium oxide during a manufacturing process of the integrated circuit. The supplier for this chemical has taken steps to mitigate the reduction of the availability of cerium oxide. There is no anticipation of a shortage of this substance.

Polycyclic Aromatic Hydrocarbons (PAHs)

To the best of our knowledge as of the date of this statement, Microchip Technology's products comply with all National and International legislation relating to Polycyclic Aromatic Hydrocarbons (PAHs). Microchip Technology does not manufacture or sell any products in which PAHs are an intentionally added material ingredient. Microchip Technology does manufacture certain products which contain carbon black (used in certain plastics) which may contain trace levels of PAHs as a by-product of the carbon black manufacturing process. The trace PAHs are tightly bound to the carbon black surface which is then firmly bound into the polymer matrix and so are not "bio-available".

Packing Materials

To the best of our current knowledge and belief all product(s) shipment material(s) are compliant with Directive 2013/2/EU (Amending to EU 94/62/EC: Packaging and Packaging Waste and EU Directive)

Dimethyl Fumarate¹ CAS # 624-49-7 and Einecs No 210-849-0 are not used and are not present in our products. Additionally, it is not used in the moisture absorbent pillows accompanying Microchip products. This information is provided based on reasonable inquiry of our suppliers and represents our current knowledge based on the information provided by our suppliers.

Ozone Depleting Materials

Microchip Technology Incorporated's semiconductor devices neither contain nor are manufactured with Class I or Class II Ozone Depleting Chemicals ("ODCs"). For purposes of this document "ODCs" are those substances listed in 40CFR82A App A, and 40CFR82A App B, July 1, 2008.

Implementation of Copper Wire Bond

Copper Palladium (CuPd) bond wire provides superior performance over Gold (Au) bond wire. CuPd wire helps ensure a steady supply of components that can support your ongoing business needs. It is Microchip's intent to convert applicable products within the next 18 to 24 months from gold to palladium copper bonding wire. This switching of wire bond materials does not change the environmental/material compliance or reporting category of any product.

EU Waste of Electrical and Electronic Equipment (WEEE) and Basel Convention

Microchip IC products and its Modules are classified as piece parts which are not classified as EEE under EU WEEE (Waste of Electrical and Electronic Equipment) or the Basel Convention.

¹ European Commission Directive 2009/251/EC of 17 March 2009 regarding DMF



MICROCHIP

Certificate of Compliance

January 26, 2017

Australian Customs Asbestos Declaration

With reference to the Customs (Prohibited Imports) Regulations 1956 and Section 4 of the Hazardous Waste (Regulation of Exports and Imports) Act 1989 (HW Act) and to the best of Microchip Technology Incorporated current knowledge and belief, Assurances that imported goods, IC products, do not contain asbestos, all forms: 1332-21-4 (Asbestos); 12172-67-7 (Ferroactinolite asbestos); 17068-78-9 (Anthophyllite asbestos); 12172-73-5 (Amosite asbestos); 12001-29-5 (Chrysotile asbestos); 12001-28-4 (Crocidolite asbestos); 14567-73-8 (Tremolite asbestos)

Disposal

Products at the end of their life, as well as any scrap, must be disposed of following all local and national legal regulating provisions.

Microchip Technology Incorporated's General Statement of Warranty

Microchip Technology Incorporated has taken commercially reasonable steps to provide representative and accurate material content information. Microchip relies on information provided by third parties and may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. Supplier information is often protected from disclosure as trade secrets and some information may not have been provided by subcontractor assemblers and raw material suppliers. Microchip may update this Certificate of Compliance from time to time by posting the updated Certificate of Compliance on its website. Microchip does not provide any warranty, express or implied, with respect to the information provided in this Certificate of Compliance. This Certificate of Compliance does not modify Microchip's terms and conditions of sale of its products or the terms of any agreement under which customers purchased Microchip's products. Microchip's terms and conditions of sale or the relevant agreement, as applicable, shall continue to apply.

Mike Finley
VP Fab Operations
Microchip Technology Inc.
2355 W. Chandler Blvd. Chandler, AZ 85224