



## Statement on Restriction of Hazardous Substances (“RoHS”) for TI Products

TI products are designated as “RoHS-Compliant” when designated RoHS = Yes, or RoHS = Exempt, to comply with EU Directive 2011/65/EU (entered July 21, 2011) and the amended Directive (EU) 2015/863 (effective July 22, 2019) for Restriction of the Use of Hazardous Substances (“RoHS”).

To the best of TI’s knowledge, TI products that are declared as RoHS Compliant

- Do not contain restricted substances **above** the maximum threshold values shown in Table 1

OR

- Where applicable, may be subject to one of the RoHS Annex III exemptions for lead (Pb) as shown in Table 2. (For externally purchased components, other RoHS exemptions may apply):

**TABLE 1**

Substance	Threshold	EU RoHS Directive
Cadmium (Cd)	0.01% (100ppm)	2002/95/EC amended 2011/65/EU
Lead (Pb)	0.1% (1000ppm)	2002/95/EC amended 2011/65/EU
Mercury (Hg)	0.1% (1000ppm)	2002/95/EC amended 2011/65/EU
Hexavalent Chromium (Cr <sup>6</sup> )	0.1% (1000ppm)	2002/95/EC amended 2011/65/EU
Polybrominated biphenyls (PBBs)	0.1% (1000ppm)	2002/95/EC amended 2011/65/EU
Polybrominated diphenylethers (PBDEs)	0.1% (1000ppm)	2002/95/EC amended 2011/65/EU
Bis(2-ethylhexyl) phthalate (DEHP)	0.1% (1000ppm)	EU 2015/863, enforced 22 Jul 2019
Butyl benzyl phthalate (BBP)	0.1% (1000ppm)	EU 2015/863, enforced 22 Jul 2019
Dibutyl phthalate (DBP)	0.1% (1000ppm)	EU 2015/863, enforced 22 Jul 2019
Diisobutyl phthalate (DIBP)	0.1% (1000ppm)	EU 2015/863, enforced 22 Jul 2019

**TABLE 2**

EU RoHS Exemption	Description	Category
7(a)	Lead in high melting temperature type solders (i.e. lead based alloys containing 85 % by weight or more lead)	2002/95/EC amended 2011/65/EU
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	2002/95/EC amended 2011/65/EU
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: - A semiconductor technology node of 90 nm or larger; - A single die of 300 mm <sup>2</sup> or larger in any semiconductor node; - Stacked die packages with die of 300 mm <sup>2</sup> or larger, or silico interposers of 300 mm <sup>2</sup> or larger	2011/65/EU amended (EU) 2019/172: Categories 1 to 7 & 10
15	Lead in solders to complete a viable electrical connection between the semiconductor die and carrier within integrated circuit flip chip packages	2011/65/EU amended (EU) 2019/172: Categories 8, 9 & 11

- Do not exceed the IEC 62474 database (formerly the Joint Industry Guide –JIG101) and the Global Automotive Declarable Substance List (GADSL) for regulated substances, thresholds and applications in electronics.
- Meet the China Management Methods for controlling Pollution by Electronic Information Products (“China RoHS”). For products containing lead, the China RoHS EFUP is 50 years ([www.ti.com/leadfree](http://www.ti.com/leadfree)).


TI defines “RoHS Compliant” products as follows:

- **RoHS = Yes:** Means TI semiconductor products that are compliant with the current RoHS requirement that the maximum concentration values of the ten substances listed in RoHS Annex II do not exceed 0.1% by weight in homogeneous materials (0.01% for Cd). Where designed to be soldered at high temperatures, TI semiconductor products labeled as “RoHS Compliant” are suitable for use in specified lead-free processes. TI may also reference these types of semiconductor products as “Pb-Free.”
- **RoHS = Exempt:** Means TI semiconductor products that contain lead (Pb) above the RoHS Annex II threshold, but that fall within one of the specific RoHS exemptions listed above. TI products with this designation contain below the regulatory thresholds for all RoHS restricted substances except Lead (Pb), which may be found in materials such as leadframe plating or solder balls. EU RoHS status can be checked at [www.ti.com/productcontent](http://www.ti.com/productcontent).
- **RoHS = No:** TI products **not** designated as “RoHS Compliant” are **below** the regulatory thresholds for all RoHS Annex II substances except Lead (Pb), which may be found in materials such as leadframe plating or solder balls where a RoHS exemption cannot be claimed. EU RoHS status can be checked at [www.ti.com/productcontent](http://www.ti.com/productcontent)

**Note:** Although not publicly available, the existence and/or concentrations of TI proprietary materials in TI semiconductor products are in full compliance with regulatory requirements in effect as of the date below.

TI’s semiconductor products, as well as most module products are considered “components” under RoHS. Therefore, the CE marking, declaration of conformity, and internal product control provisions set forth in Article 7 of RoHS do not apply.

**Evaluation modules (EVMs):** As of July 22, 2019, TI EVMs are in compliance with all RoHS Article 7 requirements.

Signature:   
Name/Title: Hubie Payne, Vice President, Worldwide Quality  
Date: 8/13/2020

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