



RoHS

Co-existing China→EU→JESD97

Labeling Guideline Proposal

Label Examples

TI PRESENTATION – NEDA Mtgs

(29 Mar 2007)

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China RoHS Discussions

AeA meetings in China Jan 18-19, 2007

Agilent	Zhong kai Liu
Intel	Scott Zhao
Texas Instruments	Michael Chen
Tyco Electronics	David Lu Ye Mu
AMD	Mi juan Du
Motorola	Jun lin Ma
Qualcomm	Rocky Zhang
Solectron	Dennis Zhang
GE Healthcare	No seeing
Cisco	Jane Huang

- Companies participating in meetings with China's MII concerning details of EFUP



TI background info

Products affected by EFUP

- All TI finished IC products that are labeled as “Pb-free” or “Green” are fully RoHS compliant in the EU and China. **The only substance that may be contained in TI finished IC products above the 1000ppm threshold is lead (Pb).** Unlike EU RoHS, China RoHS does not use exemptions. Any TI product containing lead (Pb) above 1000ppm would need communicated to customers as such. Substance content is reported by TI through the www.ti.com/productcontent website.
- Products labeled without the “Pb-free” symbol are not compliant to China RoHS. **China RoHS does not require special labeling for components, though communications with MII have stated, “In the case of components or raw materials purchased abroad for completing the production, in principle labeling with related environmental information is required.”** However, if the component or raw material supplier has an agreement with the downstream producer, **it may not label the components or raw materials, but pass the relevant environmental information to the downstream producer.** The relevant environmental information concerning Environmentally Friendly Use Period (EFUP) for these types of products is:



TI Legal Statement for China RoHS EFUP

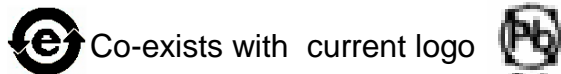
- As you may know, currently there is no testing or industry standard for determining the Environmentally Friendly Use Period (EFUP) under the China Marking for Control of Pollution Caused by Electronic Information Products Standard SJ/T11364-2006 (China RoHS). However, to assist you to meet the China RoHS March 1, 2007 deadline, TI provides that of the 6 regulated substances, only lead (Pb) above the 1000 ppm MCV is contained in certain designated finished integrated circuit products (BGA and leadframe devices). *Per the CRC Handbook of Chemistry and Physics, 56th edition, editor Robert Weast, Pb is defined as insoluble in the 0°C to 100°C range in water (see Table of Physical Constants of Inorganic Compounds).* Based on this information, even if water is condensed from the atmosphere, TI believes that its finished integrated circuit products, including those that contain Pb, can support a customer product EFUP of **up to 50 years** for uses in a typical office/workplace temperature and humidity environment. Please note that *new information may become available or testing or industry standards accepted in the future that could alter TI's current understanding of EFUP.*



TI “Product Package” Label changes EU and China RoHS *compliant* products

Label requirements for RoHS compliant material

- Chasing Arrow Logo will co-exist with the current Pb-free logo
- ECAT value below the logo will stay the same but include an underscore to match the proposed J-STD-609 format:
 - e or G prefix + numeric lead finish,
 - i.e., e4 or G4 = NiPdAu lead finish
 - ECAT value will be in Arial Font with underline
 - per latest J-STD-609 joint JEDEC/IPC Standard replacing JESD97.



Example of current logo w/ECAT



changes to





TI “Product Package” Label changes EU and China RoHS *compliant* products

The following slides demonstrate how TI will integrate the use of a new RoHS logo/labeling scheme with EU RoHS labeling & JESD97, all co-existing with one another.



Example of TI Label Changes → RoHS *compliant* products

Old way

TEXAS INSTRUMENTS
MADE IN: Philippines
2DC: 0514

MSL 1 /260C/UNLIM	SEAL DT 04/25/05
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OPT:
ITEM: 53,54
LBL: (L)T0:1750

(1P) TMS320DA150PGE160A
(Q) 480 (D) 0510
(31T) LOT: 5163045WCW
(4W) TKY(1T) 7366252SI4
(P)
(2P) REV: C (V) 0033317
(20L) CSO: DM5 (21L) CCO: USA
(22L) ASO: PHI (23L) ACO: PHL

(Pb) G4

co-exists with the current logo with & (G4 in this example)

New way

TEXAS INSTRUMENTS
MADE IN: Philippines
2DC: 0514

MSL 1 /260C/UNLIM	SEAL DT 04/25/05
-------------------	---------------------

OPT:
ITEM: 53,54
LBL: (L)T0:1750

(1P) TMS320DA150PGE160A
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(Pb) G4



TI Label Changes

→ Products *containing* lead (Pb)

TI products containing lead (Pb) is currently labeled one of 2 ways

1.  For lead (Pb) containing product with a European Union RoHS Exemption`
 2.  Space is blank for product containing lead (Pb) with no European Union RoHS Exemption`
- **To meet the latest J-STD-609 labeling proposal for product containing lead (Pb)**
 - the ECAT symbol will become **e0** for product with a lead (Pb) based lead or ball finish.
 - **For product containing lead (Pb) and is EU RoHS exempt**
 - “  ” will remain as seen on current TI labels (e1 could be e1, e3, e4, etc.)
 - **The value assigned within the chasing arrows concerns how many years before a banned substance(s) leaches from the product while in use**
 -  Replaces current logo examples
 - **The value displayed within the chasing arrows is determined by the Chinese Environmental Protection Use Period (EPUP) requirements**
 - The EFUP value is 50 years for TI products with lead (Pb) above the 1000ppm threshold level at the homogenous level



Example of TI Label Changes

→ EU RoHS **exempt**, China **non-exempt** products

Old way

TEXAS INSTRUMENTS
MADE IN: Philippines
2DC: 2Q:

MSL 4 /260C/72HR	SEAL DT 04/24/06
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OPT:
ITEM: 64
LBL: 1A (L)T0:1755

RoHS Exempt e 4

(1P) TMS320TCI100BQZLZ
(Q) 165 (D) 0614
(31T) LOT: 6312259WCW
(4W) TKY(1T) 9029908SI4
(P)
(2P) REV: - (V) 0033317
(20L) CSO: KLB (21L) CCO:USA
(22L) ASO: PHI (23L) ACO: PHL



Accompanies current logo example

RoHS Exempt e 4

Actual numeric Text value shown as "10" is still under review (10, 50, 95, etc.)

New way

TEXAS INSTRUMENTS
MADE IN: Philippines
2DC: 0514

MSL 1 /260C/UNLIM	SEAL DT 04/25/05
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OPT:
ITEM: 53, 54
LBL: (L)T0:1750

RoHS Exempt e 4

(1P) TMS320DA150PGE160A
(Q) 480 (D) 0510
(31T) LOT: 5163045WCW
(4W) TKY(1T) 7366252SI4
(P)
(2P) REV: C (V) 0033317
(20L) CSO: DM5 (21L) CCO:USA
(22L) ASO: PHI (23L) ACO: PHL

EU RoHS Exempt Example



Example of TI Label Changes

→ EU and China RoHS *non-exempt* products

Old way

TEXAS INSTRUMENTS
MADE IN: Philippines
2DC: 2Q:

MSL 4 /260C/72HR	SEAL DT 04/24/06
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OPT:
ITEM: 64
LBL: 1A (L)T0:1755

(1P) TMS320TCI100BQZLZ
(Q) 165 (D) 0614
(31T) LOT: 6312259WCW
(4W) TKY(1T) 9029908SI4
(P)
(2P) REV: - (V) 0033317
(20L) CSO: KLB (21L) CCO:USA
(22L) ASO: PHI (23L) ACO: PHL



Replaces current logo example of “ ” (empty space) for product that has lead (Pb) above 1000ppm Threshold
Note: Must have @logo value of “0”

New way

TEXAS INSTRUMENTS
MADE IN: Philippines
2DC: 0514

MSL 1 /260C/UNLIM	SEAL DT 04/25/05
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OPT:
ITEM: 53, 54
LBL: (L)T0:1750

(1P) TMS320DA150PGE160A
(Q) 480 (D) 0510
(31T) LOT: 5163045WCW
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(P)
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(22L) ASO: PHI (23L) ACO: PHL

Non-Exempt EU RoHS example