



PCN #: 20070518001

Texas Instruments Incorporated

Enterprise Notification

**Addition of RoHS Designation
Symbols to Semiconductor
Product Labels**





Release Date: July 21, 2007



New RoHS Symbols

TI Semiconductor Products

Texas Instruments Incorporated (TI) is updating its semiconductor product labels to include EU and China Restriction on Use of Hazardous Substance (RoHS) designations for three scenarios:

-  • **RoHS Compliant:** TI is adding the chasing arrow logo with an “e” in the middle to its affected product labels for fully RoHS compliant products. This new symbol, required under China RoHS, will be added to the Pb-Free and JEDEC E and G codes on the label, to further denote compliance to known RoHS regulatory requirements.
 - Compliant to known RoHS regulatory requirements like the EU, China and California
 - Meets 1000ppm maximum concentration values (MCV) at the homogenous level for Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr6+), Polybrominated Biphenyls (PBB) and Polybrominated Diphenylether (PBDE)
 - Meets 100ppm MCV at the homogeneous level for Cadmium (Cd)
-  • **RoHS Exempt:** For EU RoHS Exempt products (products containing Pb above the RoHS allowable threshold), the chasing arrow logo with “50” will be added to the “RoHS Exempt” designation on affected product labels.
 - Per China RoHS requirements, TI has estimated the environmentally friendly use period (EFUP) of 50 years based on time in years Pb will not leak while in normal use.
- 
 • **Non-RoHS Complaint:** For products that contain Pb but are not covered by an EU RoHS exemption, the chasing arrow logo with “50” will be added to affected product labels to indicate the EFUP.
 - The JEDEC symbol “e0” may also be included on this label to indicate Pb is contained above the RoHS Maximum Concentration Value.



RoHS Compliant Products: Label Changes

- 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.



Co-exists with current logo



Example of current logo w/ECAT





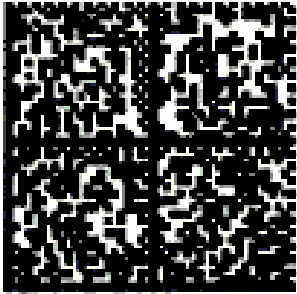
changes to






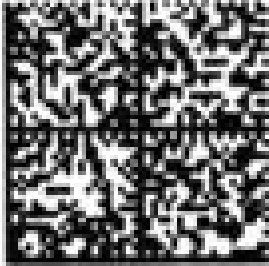


Example: RoHS Compliant Products (Pb-free, no exemptions required)

Current TI Pb-free / RoHS compliant product label example

 TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 20: <table border="1"><tr><td>HSL 2 / 260C / 1 YEAR</td><td>SEAL DT</td></tr><tr><td>HSL 1 / 235C / UNLIM</td><td>03/29/04</td></tr></table> OPT: ITEM: 39 LBL: 5A (L) TO: 1750	HSL 2 / 260C / 1 YEAR	SEAL DT	HSL 1 / 235C / UNLIM	03/29/04	 84 	(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483S12 (P) (2P) REV: (V) 0033317 (20L) CSO: SHE (21L) CCO: USA (22L) ASO: MLA (23L) ACO: MYS
HSL 2 / 260C / 1 YEAR	SEAL DT					
HSL 1 / 235C / UNLIM	03/29/04					

New TI Pb-free / RoHS compliant product label example



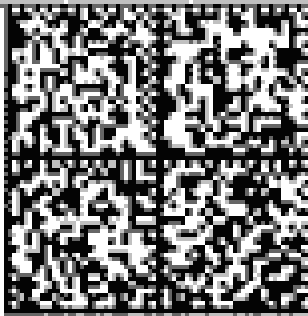
 TEXAS INSTRUMENTS MADE IN: Taiwan, R.O.C. 2DC: 20: <table border="1"><tr><td>HSL NO/NO /NO</td><td>SEAL DT</td></tr><tr><td></td><td>05/01/07</td></tr></table> OPT: ITEM: 74 LBL: 1A (L) TO: 1520	HSL NO/NO /NO	SEAL DT		05/01/07	 84  	(1P) ADS1286PA (Q) 2000 (D) 0714 (31T) LOT: 1234567DRW (4W) TKY (1T) 0000016Z49 (P) (2P) REV: (V) 0033317 (20L) CSO: DHS (21L) CCO: USA (22L) ASO: TAI (23L) ACO: TWN
HSL NO/NO /NO	SEAL DT					
	05/01/07					

Addition of **chasing arrow logo with an "e"** for full RoHS compliancy




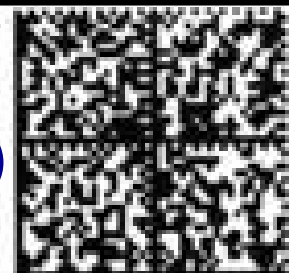


Example: RoHS Compliant / Green Products (Pb-free, no exemptions required, Br and Sb <0.1%)

Current TI Pb-free / RoHS compliant / Green product label example

 TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 29:	 G4		(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY(1T) 7523483SI2 (P) (2P) REV: (V) 0033317 (20L) CSO: SHE (21L) CCO:USA (22L) ASO: MLA (23L) ACO: MYS				
<table border="1"><tr><td>HSL 2 / 260C / 1 YEAR</td><td>SEAL DT</td></tr><tr><td>HSL 1 / 235C / UNLIH</td><td>03/29/04</td></tr></table> OPT: ITEM: 39 LBL: 5A (L)T0:1750	HSL 2 / 260C / 1 YEAR	SEAL DT	HSL 1 / 235C / UNLIH	03/29/04			
HSL 2 / 260C / 1 YEAR	SEAL DT						
HSL 1 / 235C / UNLIH	03/29/04						



New TI Pb-free / RoHS compliant / Green product label example

 TEXAS INSTRUMENTS MADE IN: Taiwan, R.O.C. 2DC: 29:	 G4 		(1P) CDC5801DBQR (Q) 2500 (D) 0714 (31T) LOT: 2234567DRW (4W) TKY(1T) 0000019Z49 (P) (2P) REV: (V) 0033317 (20L) CSO: TID (21L) CCO:DEU (22L) ASO: TAI (23L) ACO: TWN				
<table border="1"><tr><td>HSL 2 / 260C / 1 YEAR</td><td>SEAL DT</td></tr><tr><td></td><td>05/01/07</td></tr></table> OPT: ITEM: 74 LBL: 2A (L)T0:1520	HSL 2 / 260C / 1 YEAR	SEAL DT		05/01/07			
HSL 2 / 260C / 1 YEAR	SEAL DT						
	05/01/07						

Addition of chasing arrow logo with an "e" for full RoHS compliancy



RoHS Exempt Products: TI Label Changes (Products *containing* Pb)

- European Union Exempt Products containing Pb
 - Products are compliant with RoHS with the exception of Pb
 - RoHS exempt as high-temperature solder die attach (exemption 7a) or flip-chip solder bumps (exemption 15)
- **Labels will continue to include exempt designation:**
 -  (e1 could be e1, e3, e4, etc.)
- **China RoHS Chasing arrow designation will be added to label**
 - For EU RoHS Exempt products (products containing Pb above the RoHS allowable threshold), the chasing arrow logo with “50” will be added to the “RoHS Exempt” designation on affected product labels.
 - 
 - Per China RoHS requirements, TI has estimated the environmentally friendly use period (EFUP) of 50 years based on time in years Pb will not leak while in normal use.


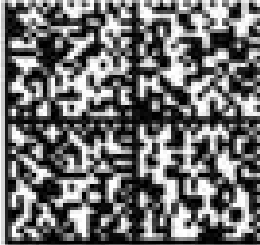


Example: RoHS Exempt Product (Contains Pb, EU RoHS exempt, China EFUP)

Current TI product label example -- EU RoHS exemption

 TEXAS INSTRUMENTS		RoHS Exempt e1			(1P) TMS320TCI100BQZLZ	
MADE IN: Philippines					(Q) 165	(D) 0614
2DC: 20:					(31T) LOT: 6312259WCW	
MSL 4 /260C/72HR		SEAL DT 04/24/06			(4W) TKY(1T) 9029908SI4	
OPT: ITEM: 64				(P)		
LBL: 1A (L)T0:1755				(2P) REV: - (V) 0033317		
				(20L) CS0: KLB (21L) CCO:USA		
				(22L) AS0: PHI (23L) ACO: PHL		

New TI product label example -- EU RoHS exemption

 TEXAS INSTRUMENTS		RoHS Exempt e1			(1P) TMS320C6412AZNZA5	
MADE IN: Taiwan, R.O.C.					(Q) 160	(D) 0714
2DC: 20:					(31T) LOT: 5234567DRW	
MSL NC/NC /NC		SEAL DT 05/01/07			(4W) TKY(1T) 0000027Z49	
OPT: ITEM: 74				(P)		
LBL: 2A (L)T0:1520				(2P) REV: (V) 0033317		
				(20L) CS0: SHE (21L) CCO:USA		
				(22L) AS0: TAI (23L) ACO: TWN		

Addition of **chasing arrow logo with "50" years** for Environmentally Friendly Use Period (EFUP) value



Non-RoHS Compliant Products – Label Changes (Products *containing* Pb)

– Semiconductor products containing Pb above RoHS thresholds

- Products are compliant for all RoHS substances except Pb
- No exemption applies
- RoHS designation space on label is blank

– New “e0” ECAT Symbol

- To meet the latest J-STD-609 labeling proposal for products containing lead (Pb) TI may include the **e0** ECAT symbol for product with a lead (Pb) based lead or ball finish.

– China RoHS Chasing arrow designation will be added to label

- For non-RoHS compliant products, the chasing arrow logo with “50” will be provided on affected product labels.




- Per China RoHS requirements, TI has estimated the environmentally friendly use period (EFUP) of 50 years based on time in years Pb will not leak while in normal use.


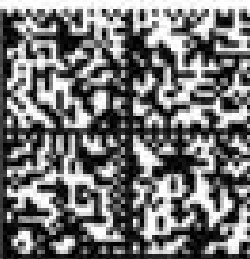


Example: Non-RoHS Compliant Products (RoHS compliant except for Pb, no exemption)

Current TI product label example for non-RoHS compliant product

 TEXAS INSTRUMENTS			(1P) TMS320TCI100BQZLZ	
MADE IN: Philippines			(Q) 165	(D) 0614
2DC: 2Q:			(31T) LOT: 6312259WCW	
MSL 4 /260C/72HR			(4W) TKY(1T) 9029908SI4	
SEAL DT		(P)		
04/24/06		(2P) REV: - (V) 0033317		
OPT:		(20L) CS0: KLB (21L) CCO:USA		
ITEM: 64		(22L) AS0: PHI (23L) ACO: PHL		
LBL: 1A (L)T0:1755				

New TI product label example for non-RoHS compliant product


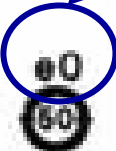
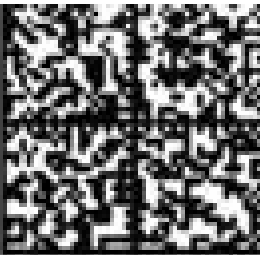
 TEXAS INSTRUMENTS			(1P) SN74LS00N	
MADE IN: Taiwan, R.O.C.			(Q) 1000	(D) 0714
2DC: 2Q:			(31T) LOT: 3234567DRW	
MSL NC/NC /NC			(4W) TKY(1T) 0000023Z49	
SEAL DT		(P)		
05/01/07		(2P) REV: (V) 0033317		
OPT:		(20L) CS0: SHE (21L) CCO:USA		
ITEM: 74		(22L) AS0: TAI (23L) ACO: TWN		
LBL: 4A (L)T0:1520				

Addition of **chasing arrow logo with “50” years** for EFUP value



Example: Non-RoHS Compliant Products (RoHS compliant except for Pb, no exemption)


- New ECAT Symbol: per proposed J-STD-609 format

 TEXAS INSTRUMENTS			
MADE IN: Taiwan, R.O.C. 20C: 20:			
MBL NC/NC /NC			
SEAL DT 05/01/07			
OPT: ITEM: 74 LBL: 2A (L)T0:1520			
(1P) CD54ACT139F3A (Q) 1000 (D) 0714 (31T) LOT: 4234567DRW (4W) TKY (1T) 0000025Z49 (P) (2P) REV: (V) 0033317 (20L) CSO: HIJ (21L) CCO: JPN (22L) ASO: TAI (23L) ACO: TWN			



Default: Same as Non-RoHS Compliant

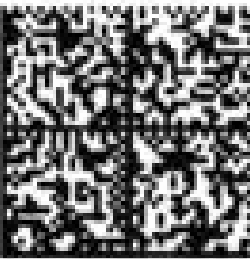
- Default label if banned substance not defined within TI internal traveler system
 - Device is without an EU RoHS exemption and
 - Pb may exist above the 1000ppm MCV
 - Then label will include China RoHS Chasing Arrow with 50 year EFUP



TEXAS INSTRUMENTS
MADE IN: Taiwan, R.O.C.
2DC: 20:

MSL NC/NC /NC	SEAL DT 06/01/07
---------------	---------------------

OPT:
ITEM: 74
LBL: 4A (L)T0:1520



(1P) SN74LS00N
(Q) 1000 (D) 0714
(31T) LOT: 3234567DRW
(4W) TKY (1T) 0000023Z49
(P)
(2P) REV: (V) 0033317
(20L) CS0: SHE (21L) CC0:USA
(22L) AS0: TAI (23L) AC0: TWN