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# Lead Free Telecom and Signal Relays

## RoHS and WEEE

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### General Aspects

#### Why move to Lead Free Products

The European Union has put in effect three new directives to remove hazardous materials as the use of lead and other hazardous materials:

- **Restriction on Hazardous Substances (RoHS)** and **Waste Electrical and Electronic Equipment (WEEE)**.

These directives are aimed at reducing the hazardous materials content in electronic products as well as increasing the recycling efforts for these products and take effect July 1, 2006. RoHS specifically bans or restricts the use of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated biphenyl ethers (PBDE). This directive applies to most electronics, but has exemptions for certain very high reliability applications.

**Deadline for above directives is July 1, 2006 !**

- The End of Life Vehicles (ELV) directive.

This directive is aimed at increasing recycling content of vehicles manufactured and sold in the European Union. This directive only applies to automotive vehicles and takes effect July 1, 2003. In particular, the directive bans or limits the use of lead, mercury, cadmium, hexavalent chromium.

Deadline 1 July 2003 in Europe!

For RoHS, WEE and ELV document download see <http://www.tycoelectronics.com/environment/leadfree>

**The information below specifically deals with the conversion towards lead free products in view of the Restriction on Hazardous Substances (RoHS) and Waste Electrical and Electronic Equipment (WEEE) directives.**

ALL AXICOM relays are according the requirements defined in the ELV. (Exemption11, Annex II)

In order to participate in global initiatives to reduce the environmental pollution and to comply with the legal requirements (directives listed above), Tyco Electronics will implement a 2 phase program to provide specific products that are lead free (conversion from components that are plated with tin / lead to products that are lead free).

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### Implementation of Lead Free Products

Tyco Electronics (connectors, relays, etc...) follows in principle a two phase conversion process:

#### Phase 1

The product that is produced during the Phase 1 conversion will meet all the performance requirements that are documented in the current revision of the product specification or catalogue. Therefore, implementation of **Phase 1 does not require the immediate conversion of the internal production drawings, engineering documentation or the Tyco Electronics customer drawings.**

- in phase 1 the product itself will be modified to be lead free. This conversion includes internal plating sources and external (supplier) sources.
- eliminates lead from our products; primarily a change of terminal plating to pure tin, may still use lead as a "solder" (as per RoHS)
- parts to be lead free by 31DEC04; may still use lead only as per exemptions called out in RoHS
- components fulfill all existing product & application specifications, only minor process/engineering changes, unchanged existing P/N's for lead-free plated components, no documentation change in customer's files necessary
- mixed deliveries (tin-lead and lead-free) may occur during transition, First-In-First-Out (FIFO) will be used to deplete inventory
- clear traceability identification on packaging labels

**The Phase 1 initiative will begin with the controlled conversion of the plating processes during 2003. The goal is to complete the conversion of all plated components so that all saleable products will be lead free by the end of 2004.**

During the conversion period, mixed deliveries of both tin / lead and lead free saleable products will be permissible.

The controlled conversion of plating baths will occur at both internal manufacturing sites and external suppliers.

From end of 2004 all saleable products will be lead-free. This statement is valid **for deliveries from the producer only (!)** and **does not cover products on decentralized stock** (e.g. distribution channels, wholesalers, etc.). These sales channels will have to establish their own conversion roadmap when informing their customers!

All Tyco Electronics **customers shall be notified of the Phase 1** changes to the manufacturing process and other issues related to conversion to lead free.

The results of customer information meetings shall be documented. This documentation shall be compiled and filed.

**When all activities associated with Phase 1 have been completed, only lead free product will be delivered from central Tyco stock.**

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### Phase 2

**In some cases** the change in customer processes will require **additional activities**. Phase 2 consists of actions that will be completed to ensure that Tyco Electronics products are compatible with specific lead free processing within the customers operation (e.g. higher process temperatures):

- modify materials to be process capable for specific lead free solder processes, changes to plastic housing materials
- component and solder changes on our product when required, cost impact is likely
- only new P/N's where lead-free compatibility modifications are required
- **notification FROM customers** on their conversion to lead-free processing **allows us to ensure compatibility** with your process

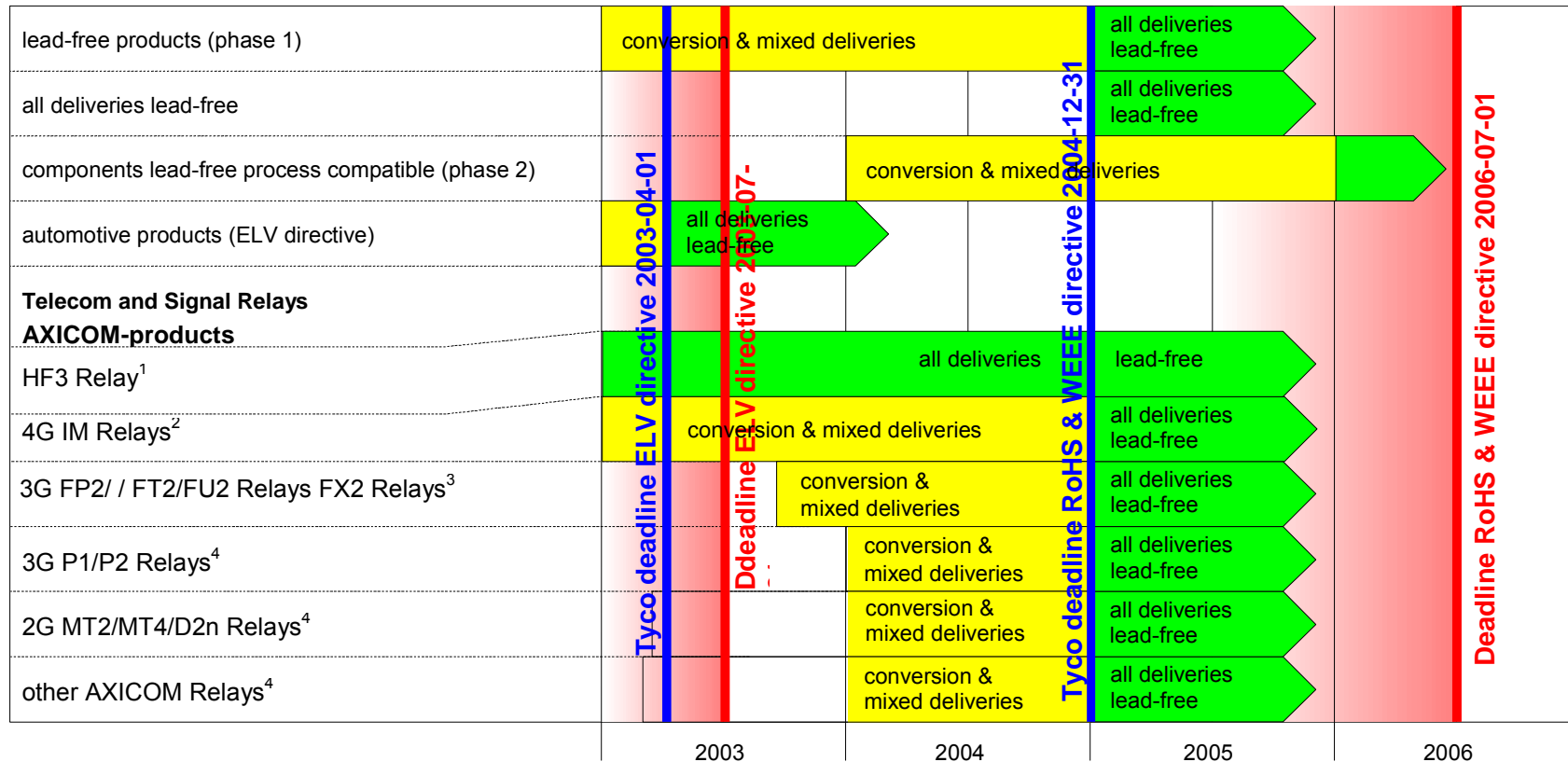
When customer contracts, customer restricted products or special customer agreements exist that prevent the conversion to lead free, please contact the product management to implement a plan to satisfy these obligations.

For additional information package download see <http://www.tycoelectronics.com/environment/leadfree> 'Customer Information Package'

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## Tyco Electronics Implementation Roadmap

### Tyco roadmap



All parts complies with ROHS and are able to withstand lead-free soldering process

Preliminary Dates: <sup>1</sup> all date code

<sup>2</sup> date code ≥ 0325

<sup>3</sup> date code ≥ 0349

<sup>4</sup> date code ≥ 0401

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### AXICOM products

#### Roadmap and date code of change

AXICOM products will be according ROHS and solderable with lead-free solder processes according ICE60068-58-1 and JEDEC020B from following date codes marked on the relays. All dates are preliminary dates. Dates effective are on our Webpage

<http://relays.tycoelectronics.com/axicom/leadfree>

- HF3                                    all date codes    conversion effective
- IM                                        ≥0325                conversion effective
- FT2/FU2                                ≥0339
- FP2/FX2                                ≥0339
- P1/P2                                    ≥0401
- All other AXICOM                    ≥0401
- All AXICOM Relays are according the ELV directive applying the exemption 11, Annex II of the ELV directive (lead only in the solder area of a contact to be converted by December 1, 2004)

#### Terminal coating

- Terminals pretined with galvanic deposited layers: Ni + Sn100
- Terminals pretined dip soldering: SnCu0.7

#### Solder conditions

- All AXICOM Relays will be tested in order to comply with the soldering conditions described in the IEC 68068-58 and JEDEC20B standard

#### Approvals and test reports

- IECQ/CECC or other test reports will be available from all products. Contact you Tyco Electronics Sales Engineer

#### Confirmation

- **Definitive schedule** for conversion to lead-free **to be reconfirmed** based on the test results achieved

#### Contact (AXICOM Relays)

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