



Company Policy on RoHS and WEEE



**RoHS Directive
2002/95/EC**

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1.0 Introduction:

This document sets out to clarify the ELMA-Mektron position with regard to the two EU Directives:

The **W**aste **E**lectrical and **E**lectronic **E**quipment (**WEEE**) Directive – 2002/96/EC

The **R**estrictions **o**f use of certain **H**azardous **S**ubstances in electrical and electronic equipment (**RoHS**) Directive - 2002/95/EC

Also defined in this document is an explanation of how ELMA-Mektron intends to implement both Directives in relation to the product which is designed, manufactured and supplied by the company.

The general details defined in this document are presented in two specific Policy Statements in Appendix A.

The Policy will be used to support and respond to any enquiries made to the company in respect to the EU WEEE and RoHS Directives, and will provide information on how these issues are dealt with as part of the general 'Supply Chain' responsibilities operating within the company.

2.0 The RoHS Directive:

The RoHS Directive came into force with the UK RoHS Regulations on 1 July 2006, and is an Article 95 single market directive.

The RoHS Regulations deal with the banning or reduction to permitted levels * of certain materials, and the specific ban of putting such new Electrical and Electronic Equipment (EEE) products on the EU market. The banned products are:

◎ Heavy Metals:

- Lead
- Cadmium
- Mercury
- Hexavalent chromium (Chromium V1)

◎ Flame Retardant in plastics:

- Polybrominated biphenyl (PBB)
- Polybrominated diphenyl ether (PBDE).

**It is proposed that the levels will be 0.01% by weight for cadmium in any individual homogenous material, and 0.1% for the other remaining substances.*

This ban came into effect from 1 July 2006.

There are a number of exempted applications for these substances, and the EU is continuing to receive and review further cases for exemptions.

In introducing these Directives the European Parliament is seeking to take a lead in a long term plan to protect and improve the quality of the environment and to safeguard public health, with the added incentive to utilize natural resources in a prudent and rational way.

3.0 The WEEE Directive:

The WEEE Directive addresses the retrieval and recycling of electric and electronic devices, and covers 10 categories of equipment.

ANNEX 1B of the WEEE Directive – 2002/96/EC provides a more detailed list of this equipment.

In respect to the product which is manufactured and marketed by ELMA-Mektron, it would broadly fit into Category 3 where it states: "...and other products and equipment for the collection, storage, processing, presentation or communication of information by electronic means."

However in regard to products sold into the defense market, Article 2.3 of the WEEE Directive states that equipment connected with national security or military purposes is excluded from the scope of the Directive. The RoHS Directive does not provide for a similar exemption.

The Government's view is that this exemption covers products designed and marketed specifically for national security and military purposes (e.g. a missile guidance system); but not products in the remaining eight categories which can be used in connection with either military or civilian applications, like personal computers etc.

As ELMA-Mektron also manufactures and supplies commercial equipment it is the intention of the company to work towards the implementation of the RoHS Directive. This decision is based on the fact that exemption does not imply total disregard of the principles of the Directives, which are based on a collective responsibility to reduce the contamination effects of waste material and to manage the environment for the future benefit of others. The implications surrounding the WEEE Directive as far as ELMA-Mektron is concerned are dealt with in Section 4.1.

4.0 Outline of Basis Policy:

4.1 WEEE Policy:

The majority of the military and commercial products supplied by ELMA-Mektron either form part of other equipment or installations, or are exempted by Article 2.3 in respect to equipment connected with national security or military purposes. Therefore this product does not fall within the scope of the WEEE Directive,

Further to the previous statement, and in respect to the definition requirement in the WEEE Directive, ELMA-Mektron is not classified as a 'Producer' since the goods supplied come under the description of 'components', and are not put onto the market as a finished product.

4.2 RoHS Policy:

General Approach:

It is the intention of ELMA-Mektron to make a positive statement in regard to how the company seeks to manage the complex issues associated with the RoHS Directives, especially in respect to the company's specific product and markets, and to manage Compliance to the best of the organization's ability.

Industry influencing factors:

The supply chain for materials and components is already determining the only viable course of action, especially in respect to lead free solder and flame retardant materials. Since ELMA-Mektron currently supplies a major percentage of its product into the Defense industry, which although this only represents 1% of the world market for electronic devices and systems, we have no alternative but to use whatever parts are available.

In view of this, ELMA-Mektron will progressively be supplying products with increasing amounts of RoHS compliant parts integrated into its build process. Commercial-off-the-shelf (COTS) items may well be incorporated in the product supplied by ELMA-Mektron. This will naturally involve the control of our supply chain activities and assurances from our suppliers that the relevant procured product is RoHS compliant.

The process for managing material procurement, identification and storage for RoHS Compliant parts is defined in the company's RoHS Compliant Part Procedure.

4.3 Lead Free Solder:

Product details:

The Defense market has long held a view about concerns over the reliability of lead free solders especially in products deployed in harsh environments. Whilst there is still some doubt as to the suitability of a SAC based solder for severe shock applications, the only viable alternatives are a conventional Pb/Sn solder which is now banned.

ELMA-Mektron have therefore carried out the required research to identify a suitable type of solder to be used in the manufacturing processes that will meet the compliance requirements of the RoHS Directive. The ultimate choice would be a Tin/Silver/Indium/Bismuth (Sn/Ag/In/Bi) solder which would satisfy the severe shock requirement, but this will preclude the use of any lead content whatsoever in the components employed. This would however be extremely difficult to achieve with the current availability of components.

It is therefore proposed that ELMA-Mektron will adopt the most common form of Lead free solder being used at the moment, this is a Tin/Silver/Copper amalgam (Sn/Ag/Cu) commonly referred to as SAC. This solder type will provide a least risk alternative to Tin/Silver/Indium/Bismuth (Sn/Ag/In/Bi).

Manufacturing process:

The manufacturing facilities will be provided to control the relevant compliant soldering activity, using the recommended equipment and soldering techniques. It may be necessary for ELMA-Mektron to provide dual facilities for both RoHS and non RoHS soldering activities, and this will be controlled through instructions in the manufacturing package and the issue of materials.

4.4 Mercury, Cadmium and Hexavalent Chromium:

Mercury and Cadmium:

As a general principal, Mercury and Cadmium will not be utilized in ELMA-Mektron designs unless specifically stated by the customer. This request from the customer must be in the form of a written waiver statement agreed at the quotation stage.

Hexavalent Chromium:

Hexavalent Chromium has long been the preferred finish for many military and rugged applications. For some time there has not been a viable alternative to Alocrom 1200 that gives the comparative conductivity and the durability that is required in the rugged and military market place.

ELMA-Mektron has however undergone some extensive research into finding a suitable alternative plating finish to Alocrom 1200, and has selected a ChromiAL Trivalent Chromium Passivation process which is approved to MIL-DTL 81706 (Latest Issue) Type 2A

The company has requested its suppliers for all enclosures and metal fabricated products that require a corrosion resistant application, that they will employ the ChomitAL TCP alternative processes when applied to all bare and painted surfaces, as stated all the drawing.

4.5 RoHS Compliance Information:

Information from the Customer

Elma-Mektron's policy to aim towards supplying RoHS compliant products is being driven primarily by compliance to the EEC Directive, as well as the progressive RoHS compliant nature of the procured parts.

Therefore since it is imperative that ELMA-Mektron fully understand the RoHS Compliance requirements of the customer before the order is finalized, any deviation from this policy, with regard to the customer specifically not wanting RoHS compliant product, will have to be formally agreed at the contractual stage, as this may well affect the quotation.

Information to the Customer

If the RoHS Compliant status of a critical part changes on a product which has already been supplied to the customer, and only if the critical nature of that part has a potential bearing on the form, fit or function of the product, ELMA-Mektron will inform the customer of the design change implications. This is especially important where the alternative part could have implications on the qualification of the product supplied.

This will then be incorporated into the design following authorization from the customer.

The only exception to this arrangement will be where the mandatory communication of changes in RoHS compliance status has been requested by the customer, and agreed and included in the quotation.

APPENDIX A:

General Policy on the Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC

The majority of the military and commercial products supplied by the Company either form part of other equipment or installations, or are exempted by Article 2.3 in respect to equipment connected with national security or military purposes. Therefore this product does not fall within the scope of the WEEE Directive.

Further to the previous statement, and in respect to the definition requirement in the WEEE Directive, the Company is not classified as a 'Producer' since the goods supplied come under the description of 'components', and are not put onto the market as a finished product.

However where requested by the customer as part of their responsibilities under the WEEE Directive, the Company will cost for and declare the breakdown of the material content with respect to the products for recycling as a percentage of total weight.

General Policy on the Restrictions of use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive - 2002/95/EC

The Company will where possible or specifically contractually mandated by the customer, design and manufacture Electrical and Electronic equipment (EEE) in line with the product, material and process requirements where available, that comply with the RoHS Directive.

This will be achieved by:

Selecting components and materials at the design stage that comply where practicable with the requirements of the RoHS Directive.

Ensuring that RoHS compliant components and materials in the supply chain procurement and stock management processes are clearly identified from Non RoHS product.

Obtaining RoHS Compliance declarations from suppliers, including Commercial-off-the-shelf (COTS) items.

Communicating to the customer the critical product change implications where they impact on form, fit or function, or where such communication has been specifically agreed on the order or contract.

Ensuring the Customer understands their responsibility at the order stage to identify if they DO NOT require RoHS compliant product, as the company's default process is towards RoHS compliance. Elma Mektron will still maintain the flexibility and process control to provide a non RoHS variant if required.