

Mr Hans-Christian Eberl  
Ms Madalina Caprusu  
Unit C2  
Sustainable Production and Consumption  
DG Environment  
European Commission

11/3/2010

CC: Mr Klaus Kögler, Head of Unit, C.2 Sustainable Production & Consumption

**RE: Application for evaluation of new requests for exemptions and/or review of existing exemptions under Directive 2002/95/EC- RoHS**

**- Request to review existing 7c of RoHS**

Dear Mr Eberl, Ms Caprusu,

ESIA representing the European based manufacturers of semiconductor devices, together with Ramtron International Corporation (hereafter “Ramtron”), would like to apply for a review of the existing exemption 7c listed in the Annex of the RoHS Directive based on the technical criteria for exemptions in Article 5(1)(b) under the current project contracted to Öko-Institut and Fraunhofer, IZM (“*Adaptation to Scientific and Technical Progress under Directive 2002/95/EC – Evaluation of new requests for exemptions and/or review of existing exemptions*”). Article 5(1)(b) of the Directive provides that materials and components can be exempted from the substance restrictions contained in Article 4(1) if their elimination or substitution via design changes or materials and components which do not require any of the materials or substances referred to therein is technically or scientifically impracticable, or where the negative environmental, health and/or consumer safety impacts caused by substitution outweigh the environmental, health and/or consumer safety benefits thereof.

ESIA and Ramtron would like to apply to this Öko-Institut and Fraunhofer, IZM project for the review of this existing RoHS exemption as the semiconductor sector remains very concerned about the effect of the wording of the exemption no 7c ‘lead in electronic ceramic parts (e.g. piezoelectronic devices)’. This issue is significant: the wording that is under review, will inadvertently exclude certain unique and necessary applications of PZT (lead zirconate titanate) for capacitors for which there are no technical solutions on the horizon for lead. These include applications such as ferroelectric memory (F-RAM) and thin film capacitors applications both of which are required from the electronics and automotive sectors. ESIA and Ramtron would like to provide some technical information to further clarify the current status of technical development with regard to the continued need to use PZT based materials for capacitors.

The industry is applying to this review project as no alternative to PZT based materials are currently known for thin films that achieve the same high permittivity, the same high breakdown field and still meets the specifications on temperature stability of 20% for -25 to

**Industry Association of :**

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+85 degree celsius only thin films ceramics based on PZT offer breakdown voltages, permittivity and temperature stability to realize silicon integrated capacitors.

This issue was referenced in the previous *Adaption to scientific and technical progress RoHS report* and has also been the specific subject of a technical assessment through the technical contractors responsible for the review of the exemptions currently granted in the Annex II of the End of Life Vehicles Directive 2000/53/EC. We identified this problem with your offices in DG Environment in October 2009. These concerns were also shared, upon the Commission's request, with the members of the Technical Adaptation Committee. It was not possible, at the time, to have the issue addressed as part of the previous review of the adaption to scientific and technical progress of the Annex of the RoHS Directive due to the fact that the consultation process had been officially completed. We would hope, however, that the current review project embarked upon with the Öko-Institut and Fraunhofer, IZM can review and appropriately deal with this issue, in order to ensure that the exemption PZT based materials for capacitors continues to exist.

We have much scientific and technical information available on which to make a detailed assessment and our experts are ready to proceed without delay to cooperate with the contractors. ESIA member companies, as well as Ramtron, are committed to finding alternatives to the use of lead in semiconductor devices, however, until such alternatives are found it is essential that the current exemption wording continues to include PZT based materials for capacitors.

The European and international semiconductor industry have been leading the global efforts towards lead free electronics for more than ten years. Currently however there are no identified substance solutions for all electronic and automotive related applications despite significant progress and achievements in the reduction of lead content in semiconductor components. ESIA companies' technical experts have been heavily involved in the complete RoHS exemptions review process throughout 2008 and have prepared much of the technical industry information and justifications to specific RoHS review questionnaires alongside industry partners.

ESIA companies and Ramtron are available to meet with you and provide any further technical clarifications as is needed. Please find attached alongside this request, a response to the DG Environment checklist/ Öko-Institut RoHS exemption questionnaire

Yours sincerely,

Shane Harte  
ESIA, Environment, Safety and Health Manager

Thomas E. Davenport  
VP of Quality, Reliability and Technology  
Ramtron International Corporation

*The Mission of the European Semiconductor Industry Association (EECA-ESIA) is to represent, promote and defend the vital interests of the European-based semiconductor industry and to ensure its competitiveness in the global market. The semiconductor industry provides the key enabling technologies at the forefront of the development of the Information Society. In Europe, the sector supports over 115,000 direct jobs and up to 500,000 induced jobs. With membership covering companies, national sector associations and research institutes, ESIA is the voice of the semiconductor industry in Europe.*