

## Adaption to scientific and technical progress under Directive 2002/95/EC

Results previous evaluation  
Exemption No. 23

“Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with copper lead frames”

(Excerpt from Öko-Institut Report 2007; Annex 1 Monthly Report 7)

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## 5 Recommendations

### 5.1 Lead used in the soldering for surface finishing at the electric pole terminal on the electronic parts – Icom Incorporated (set 6 request no. 13)

#### 5.1.1 Description of requested exemption

The applicant produces communication equipment for professional, amateur, marine, avionics and other uses (<http://www.icom.co.jp/world/index.html>). He asks to exempt lead used in the surface finishes of electronics components from the ban in the RoHS Directive and has added a list of components, to which this exemption would apply.

The applicant wants to continue using lead in tin-lead finishes on specific components, which he has listed in an additional document (see Lot6\_requ13\_icom\_complist2.xls in the Annex).

The applicant states that lead in the range of around 10 % (weight) is used in tin-lead finishes on the terminations of electronics components. The addition of lead suppresses whisker formation and thus increases the reliability in particular of fine pitch components, where the whisker might cause short circuits between the component pins causing electrical failures.

According to the applicant's component list, the total annual quantity of lead used in the applicant's products in component finishes is around 500 g.

The wording of the exemption according to the applicant would be:

*“Use of lead in finishes on terminals of electrical and electronics components.”*

#### 5.1.2 Summary of justification for exemption

The applicant justifies his exemption request according to the following technical and environmental arguments:

- The applicant says that his products are high value and low volume products. The non-conformity of just one component in a significant part of his product range would no longer allow him to sell these products into the European Union just because of an insignificant amount of lead in the finishes of the components.
- The components in question (see attached list in the Annex) can technically be produced with lead-free finishes. The applicant, however, has purchased a lot of components for his future production as a last time buy, as the production of these components was discontinued afterwards and alternative manufacturers for these components were not available.
- The use of lead-free finish components would, according to the applicant, require massive design changes on the printed wiring board. The applicant says he wanted to

develop new and RoHS compliant designs for RoHS compliant products, which would have been available in 2006 and 2007. However, according to the applicant, the development of these products has been delayed or cancelled. Products with new designs using newly designed and RoHS compliant products thus are not available at the time being. The applicant did not indicate any further reasons for the delays and cancellations in the product redesign process.

- The applicant further on argues that he needs to use lead in component finishes to avoid whisker reliability problems on fine pitch components. The consultants asked the applicant why the existing exemption for the use of lead on fine pitch components does not suffice his reliability requirements (exemption no. 23). The applicant replied that he has many components with pitches of 0.65 mm and more. The applicant does not indicate any further explanation, why he, in opposite to other manufacturers, thinks that he needs an exemption for components with a pitch of more than 0.65 mm.

A critical review of the documents made available by the applicant and of further data and information given by other parties lead to the following observations and conclusions:

- The applicant on the one hand based his request on a last-time-buy (LTB) issue, on the other hand on whisker reliability arguments on fine pitch components.
- The applicant did not explain why he was not ready with new designs in time enabling RoHS compliant products. He stated that he undertook permanent efforts to achieve RoHS compliance, but did not proof that he undertook the necessary efforts to achieve RoHS compliance on time. In the context with the applicant's LTB arguments, the consultants would like to refer to their previous statements that the COM should make a principal decision on the LTB issue (see monthly report 9 from previous evaluation contract<sup>1</sup>). The applicant has submitted a list with the non-RoHS compliant LTB components (Lot6\_requ13\_icom\_complist2.xls).
- The applicant did not indicate any reasons that would justify expanding the existing 0.65 mm pitch limit in exemption no. 23 of the RoHS Directive for the use of lead in finishes to wider pitches.
- The applicant's arguments for his exemption request thus are not in line with the requirements of Article 5 (1) (b) of the RoHS Directive. Granting the exemption request can therefore not be recommended.

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<sup>1</sup> See Annexes to the Final Report published on [http://ec.europa.eu/environment/waste/weee/studies\\_en.htm](http://ec.europa.eu/environment/waste/weee/studies_en.htm)

### **5.1.2.1 Final recommendation**

The applicant's justifications for his exemption request are not in line with the requirements of Article 5 (1) (b). The consultants therefore recommend the COM not to grant this exemption. Nevertheless, one aspect of this request is a last-time-buy and single-source component issue. The consultants in this point would like to refer to monthly report 9 from their previous contract<sup>2</sup>, where they described this issue as a principal decision to be taken by the Commission.

Whiskers in fine pitch components are the other aspect of this request. The applicant did not provide any evidence that the existing exemption no. 23 in the RoHS Directive for the use of lead in fine pitch components is not sufficient to avoid reliability problems due to whisker formation.

## **5.2 MPC10 used in automatic vending machines to achieve the payment by card – Sagem Monetel (set 6 request no. 17)**

### **5.2.1 Description of requested exemption**

Sagem Monetel requests an exemption for an electronic component used in automatic vending machines. The name of the component is MPC 10. It is used within automatic vending machines in order to allow payment by card. This application includes a specific modem component (300/1200 Bits per second Modem; SC11016 from Sierra) which itself contains tin-lead solder used on the component legs to ensure "wetting" when the part is soldered to the circuit board. The lead content is estimated at 0,01 g per device. The total weight of lead for the use in the remaining production of the machines<sup>3</sup> is estimated to be no greater than 50 g.

The applicant himself refers to the component as a so-called Last Time Buy: "As a result of the very low volume of this component being used in the professional equipment, it will not be converted to lead-free solder as it is now obsolete and has been made available to us as an Last Buy Order in order to be able to continue manufacturing for one and a half years."

The applicant has not proposed any wording.

### **5.2.2 Summary of justification for exemption**

The applicant justifies his exemption request according to the following technical and environmental arguments:

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<sup>2</sup> See Annexes to the Final Report published on [http://ec.europa.eu/environment/waste/weee/studies\\_en.htm](http://ec.europa.eu/environment/waste/weee/studies_en.htm)

<sup>3</sup> This is an interpretation of Öko-Institut on the basis of the available documentation. The applicant was asked to specify which "total amount" of lead was meant but did not reply within the required delay (even upon several demand).