

## Stakeholder Consultation Questionnaire: Exemption No. 2(c)

### *„Aluminium with a lead content up to 0.4 % by weight“*

#### Background

The Oeko-Institut has been appointed by the European Commission within a framework contract<sup>1</sup> for the review of exemptions in Annex II of Directive 2000/53/EC (ELV). The aim of this project is to evaluate whether the use of lead in the above mentioned exemption is still unavoidable and if the continuation of the exemption is therefore justified, in line with Art. (4)(2)(b)(ii) of the ELV Directive.

The legal text of the ELV Directive published in 2000 required in Article 4(2)(b), that the Commission shall evaluate the need for exempting the use of the ELV substances in a number of applications. This included evaluations for a number of specific applications including the use of lead as an alloy in aluminium in wheel rims, engine parts and window levers. In light of this requirement, an evaluation was carried out, results of which recommended an exemption. A first version of the exemption was published in the first amendment of the Directive, for “Aluminium for machining purposes...”. The initial exemption included two different entries with different allowances, applicable to articles put on the market within a certain timeframe. This exemption later evolved to include 3 entries, only the third (Ex. No. 2(c) as detailed above) is still applicable for use in new vehicles put on the EU market.

Exemption 2(c) in its current wording was published in the third revision of Annex II in 2008<sup>2</sup> and reviewed in 2009/2010. For exemption 2(c), a review within five years was recommended on the basis that industry did not provide sufficiently detailed evidence, at the time of the last review, that a reduction of lead concentrations in aluminium alloy was not feasible, despite the general availability of lead free alternatives that had become apparent (Oeko-Institut 2010). The requirement to review Exemption 2(c) in 2015 was published in the fifth revision of Annex II in 2011.<sup>3</sup>

The objective of this consultation and the review process is to collect and to evaluate information and evidence according to the criteria listed in Art. (4)(2)(b)(ii) of Directive 2000/53/EC (ELV), which you can download from here:

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0053>

If you would like to contribute to the stakeholder consultation, please answer the following questions:

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<sup>1</sup> Contract is implemented through Framework Contract No. ENV.C.2/FRA/2011/0020 led by Eunomia

<sup>2</sup> Commission Decision 2008/689/EC amending Annex II of Directive 2000/53/EC of the European Parliament and of the Council on end-of-life vehicles

<sup>3</sup> Commission Directive 2011/37/EU of 30 March 2011 amending Annex II to Directive 2000/53/EC of the European Parliament and of the Council on end-of-life vehicles

## Questions

1. Please explain whether the use of lead in the application addressed under Exemption 2(c) of the ELV Directive is still unavoidable, so that Art. 4(2)(b)(ii) of the ELV Directive would justify the continuation of the exemption.
  
2. Please describe in which applications aluminium alloys are used in vehicles at present and indicate the functionality of lead in these applications (e.g. specific function and properties, performance criteria, etc.).  
Please make a distinction between applications in which the use of lead is unavoidable (e.g. due to safety reasons) and other applications.
  
3. Please indicate how much lead would be used under this application per annum and substantiate the amount of lead with a calculation for vehicles put on the European market, and worldwide. If data is not available, please provide estimations.  
In your calculations, please provide detail as to the amounts of lead present in aluminium alloys used per vehicle (where possible please refer to the quantity of material per component and per vehicle in weight and in percentage by weight).  
Please provide an overview for the last ten years and an estimation how this is to evolve in the coming years.
  
4. In case the substitution of lead is not viable, please explain the efforts your organisation has undertaken to find and implement the use of lead-free alternatives in the manufacture of vehicles.
  
5. Please provide information as to lead free alternatives, which are available for certain applications (e.g. tin or bismuth containing alloys). Where reference is made to research or results thereof, please specify what year such studies/results are from.
  - a. If substitutes are not yet applied in the vehicle industry, please explain why lead-free alternatives cannot yet be applied.
  - b. Please specify the effects of lead-free substitutions on material characteristics and performance (e.g. appearance, (long-term) reliability, manufacturing yield, safety, life-cycle aspects)?
  - c. Please indicate which research has been performed during the last years to find substitutes and/or to develop alternatives? Please provide specific documents/evidence supporting the search for substitutes (e.g. roadmap).
  
6. If substitution is not yet possible, please provide information if there are technical developments that allow a further reduction of the quantities of lead present in aluminium alloys? Can the limit of 0.4% be further minimized? If not, please explain why this is currently technically or scientifically impossible / impracticable.

7. Please provide information as to the lead content, which is unintentionally present in aluminium alloys used in the automobile industry through the use of scrap metal.
8. It is understood that possible processes to remove lead from aluminium scrap are in development; Concerning such methods, please provide information as to such processes, also referring to:
  - a. How promising such methods are a) from a technical point of view, b) from an economical point of view?
  - b. What obstacles currently hinder the upscaling of such processes from laboratory scale to large scale?
  - c. What future stages are needed in the development of promising technologies and how much time is needed before this could result in a reduction of lead quantities present in scrap aluminium?

## References

Oeko-Institut 2010: Stéphanie Zangl et al., Öko-Institut; Otmar Deubzer, Fraunhofer IZM: Adaptation to scientific and technical progress of Annex II to Directive 2000/53/EC (ELV) and of the Annex to Directive 2002/95/EC (RoHS), final report; Freiburg, 28 July 2010;  
[http://elv.exemptions.oeko.info/fileadmin/user\\_upload/Final\\_Report/Corr\\_Final\\_report\\_ELV\\_RoHS\\_28\\_07\\_2010.pdf](http://elv.exemptions.oeko.info/fileadmin/user_upload/Final_Report/Corr_Final_report_ELV_RoHS_28_07_2010.pdf)