

Consultation Questionnaire Exemption No. 6a (renewal request)

Exemption for „Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight“

Abbreviations and Definitions

EEE	Electrical and Electronic Equipment
EGGA	European General Galvanizers Association
EUROFER	European Steel Association
Pb	Lead

Background

The Oeko-Institut and Fraunhofer IZM have been appointed within a framework contract¹ for the evaluation of applications for the renewal of exemptions currently listed in Annexes III of the new RoHS Directive 2011/65/EU (RoHS 2) by the European Commission.¹

The following applicants have submitted requests for the renewal of the above mentioned exemption.

European Steel Association (EUROFER) and the European General Galvanizers Association (EGGA) request a modification of the current exemptions wording formulation as follows: *“Lead as an alloying element in steel for machining purposes and in batch hot dip galvanized steel items containing up to 0.35% lead by weight.”*

Dunkermotoren and Sensata Technologies request the exemption be renewed with the same wording formulation currently listed in Annex III of the RoHS Directive.

The applications have been subject to a first completeness and plausibility check. The applicants have been requested to answer additional questions and to provide additional information that shall be made available on the request webpage of the stakeholder consultation (<http://rohs.exemptions.oeko.info/index.php?id=228>).

According to EUROFER and EGGA, the presence of Pb in steel is of relevance in machining steel, where lead improves machinability, and in batch galvanized steel, where lead is unintentionally present in the galvanised coating due to the use of recycled zinc ingots. The intentional addition of lead to the galvanizing bath is rapidly declining due to technical innovation.

EUROFER and EGGA do not specify the applications of steel containing lead as it is said to cover a diverse range. According to EUROFER and EGGA, batch galvanized steel is used in small components like fasteners, brackets, fixings etc.

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

Dunkermotoren uses lead based steel alloys in geared parts (“*Verzahnungsteile*”) in engine and transmission components (“*Motoren- und Getriebeteile*”) and indicates an improved machinability that is achieved by lead.

Sensata Technologies did not specify the components applied with steel containing lead. Sensata generally refers to the function of lead in all alloys covered under Ex. 6 (steel, aluminium and copper) such as improved “*micro-machining, electrical conductivity, galvanic corrosion resistance, mechanical relaxation, tribological behaviour etc.*”.

EUROFER and EGGA state that though there is intensive research into alternatives, no substitute for Pb provides improved machinability in line with the required specifications of substitutes regarding overall hot workability.

For details, please check the applicant’s exemption request at:

<http://rohs.exemptions.oeko.info/index.php?id=241>

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. 5 (1) (a) of Directive 2011/65/EU (RoHS II), which can be found under:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32011L0065:EN:NOT>

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

Questions

1. The applicants EUROFER and EGGA have requested the renewal of Exemption No. 6a of Annex III, with the following proposed wording formulation:
“Lead as an alloying element in steel for machining purposes and in batch hot dip galvanized steel items containing up to 0.35% lead by weight”
 - a. Do you agree with the scope of the exemption as proposed by the applicants?
 - b. Please suggest an alternative wording and explain your proposal, if you do not agree with the proposed exemption wording.
 - c. Please explain why you either support the applicant’s request or object to it.
 - d. To support your views, please provide detailed technical argumentation / evidence in line with the criteria in Art. 5(1)(a).
2. Please describe in which applications steel containing Pb is used in EEE.
 - a. Please provide an exhaustive list of applications and describe their typical characterisations.
 - b. Please also specify the functionality of lead in these applications (e.g. specific function and properties, performance criteria, etc.).
 - c. Please indicate how much Pb would be placed on the EU market through these applications per annum. If data is not available, please explain why and provide rough estimations.
3. Please provide data as to whether the 0.35% threshold of lead in steel can be reduced further for either galvanised applications or for machining purpose applications.

4. Please provide an exhaustive list of properties obtained through the intentional addition of Pb to steel alloys. For each property, please detail what performance indicators are or could be used to compare between Pb-based and Pb-free steel alloys and what range of performance is relevant for alloys falling under Ex. 6a.
5. Please provide information concerning possible substitutes or developments that may enable reduction, substitution or elimination, at present or in the future, of steel containing lead for machining purposes:
 - a. In this regard, please provide information as to alternatives that may cover part or all of the applicability range of steel containing lead for machining purposes;
 - b. Please provide quantitative data as to application specifications to support your view.
6. Please provide information as to research initiatives which are currently looking into the development of possible alternatives that could be applicable to part of to all of the application range of steel containing Pb for machining purposes.
 - a. Please explain what part of the application range is of relevance for such initiatives (in what applications may substitution be possible in the future).
 - b. Please provide a roadmap of such on-going research (phases that are to be carried out), detailing the current status as well as the estimated time needed for further stages.
7. Please provide details on the batch galvanizing processes:
 - a. Please provide information as to where recycled zinc with an unintentional content of Pb is typically obtained (what end-of-life applications?) to clarify how the lead is introduced.
 - b. How do you expect the Pb content to decrease in the future as articles reach end-of-life, which have been manufactured after the RoHS and ELV Pb restrictions came into force?
 - c. Can you provide information on the further development of the Pb content in recycled zinc ingots intended for use in EEE over the next 5 years?
 - d. Please provide information on batch hot dip galvanization where Pb is still added intentionally.
 - i. If the intentional addition of Pb to batch galvanizing processes cannot currently be avoided please explain why and in what cases and specify the time frame for this change.
 - ii. Please provide an estimation of the share of batch hot dipped galvanized applications where Pb is intentionally added and the share where Pb is present as an impurity of zinc.
 - iii. What trends related to these shares are expected in light of technical process adaptations in the coming 5-10 years?
8. From the available information it is observed that there are differences related to the function of Pb and the reasons for its presence, in steel alloys where Pb is added intentionally and in steel alloys where it is not. A split of the exemption is thus to be considered, differentiating between steel alloys where Pb is not intentionally introduced and between steel alloys where Pb is added to obtain certain properties:

- a. Do you agree with such a split of the exemption? Please explain why you either support or reject it. To support your views, please provide detailed technical argumentation / evidence in line with the criteria in Art. 5(1)(a) to support your statement.
 - b. Could the formulation additionally be specified relative to the dimensions or weight of batch galvanized steel components in which Pb is present, adding a size/weight threshold to the exemption formulation?
 - c. Please explain if the exemption for Pb where it is intentionally added as an alloying element in steel for machining purposes can further be specified in relation to the properties and performance ranges specified in Question 4?
9. Are there any other aspects you deem to be of importance for the requested exemption?

In case parts of your contribution are confidential, please clearly mark relevant text excerpts or provide your contribution in two versions (public /confidential).

Finally, please do not forget to provide your contact details (Name, Organisation, e-mail and phone number) so that Oeko-Institut/Fraunhofer IZM can contact you in case there are questions concerning your contribution. Please also note, however, that requested exemptions cannot be granted based on confidential information!