Adaptation to Scientific and Technical Progress of exemption 8(i) of Annex II to Directive 2000/53/EC (ELV Directive)

Stakeholder consultation

-Questionnaire for ELV exemption review and Industry Position–

Questions and answers

1. *Is there any evidence that the lower melting points of the proposed lead-free indium-based solders would require the continuation of the exemption after 31 December 2011? If you provide test results, please explain the background of the tests, in particular how the test conditions relate to real life conditions.*

   Yes, there is clear evidence that the lead-free indium based solder mentioned above is unable to meet the demands. A solution for future volume production for many cars is still missing. This requires that the expiry date of the exemption 8i has to be extended beyond the current expiry date 1.1.2013.

   Please see details in enclosure 1 (Temperature load measurements and specification)

   - Solder topics
   - Unsatisfactory technical performance in customer specified tests
   - Temperature measurements in vehicles, revised specification
   - Solar radiation load in Europe
   - Relation of test conditions to real life conditions
   - Vehicle design trends

   and details in enclosure 2 (Industry activities 2009 to 2011)

   - Industry activity roadmap 2009 -2011
   - Survey investigated substitutes and results
   - Activity report FGMAJ

   - In the meantime there were changes in car design compared to 2007/8 which need to be considered and reflected in specifications. Also now more data on temperature load is available which could not be provided on short notice during last consultation so estimations were necessary at that time.

2. *Is there any evidence that the use of lead-containing solders is unavoidable for other reasons than the low melting point of the indium-based lead-free solders?*

Yes, there is evidence also in several cases that the use of lead-containing solders is unavoidable for other reasons than the low melting point of the indium-based lead-free solders.
E.g. like aspects of corrosion and instability of indium solders, vague environmental compatibility of using Indium as substitute and especially critical resource issues.

Please find details illustrated in enclosure 3 (Non low melting point related obstacles).

Enclosure 3 refers on technical obstacles and aspects of sustainability, critical resource availability and environment e.g.

- Indium resource availability
- Instability of Indium solders
- Corrosion of Indium solders
- Recycling aspects
- LCI aspects and
- Other environmental issues.

We would like to add that also activities to replace the solder via other joining techniques e.g. by glueing with conductive adhesives were not successful (see details in enclosure 2 industry activity report 2009 -2011)

3. *Which applications covered by exemption 8i require the continued use of lead-containing solders?*

Lead- containing solders are required for following applications:

- Connectors for soldering on glass
    i. Antennas for radio and telecommunication
    ii. Defog heating systems
    iii. alarm systems /intrusion detection systems
    iv. remote key antenna systems

4. *If applicable, please provide an alternative wording of exemption 8i and/or a new date for the expiry of the exemption.*

We propose and ask for the following new wording in annex II :

- 8(i). Lead in solders in electrical glazing applications on glass except for soldering in laminated glazing (3) X (1)

    (3) This exemption shall be reviewed in 2015.

Note: No expiry date can be defined until a broad applicable technical solution is available and determined.

5. *Please provide a roadmap showing the future steps you will undertake including a schedule to find appropriate substitutes for the lead-containing solders in the different applications, where you claim the use of lead to be unavoidable after 31 December 2011.*

   Concerning information on the roadmap and the future steps please see attached enclosure 4 (industry activity roadmap 2011 to 2016).

   Enclosures 1 to 4 attached.