

Öko-Institut e.V.
F.a.o. Mrs Stéphanie Zangl
P.O. Box 50 02 40
D - 79028 Freiburg
Germany

31 March 2008

Dear Mrs Zangl,

Examination of Exemptions in Directive 2002/95/EC – Exemption 6

We understand that Öko-Institut is currently carrying out an examination of the exemptions included in the Annex to Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive).

Please find attached a joint response to the consultation from Öko-Institut, prepared by the European Copper Institute (ECI), Wirtschaftsvereinigung Metalle (WVM) and the Fédération française des minerais, minéraux industriels et métaux non-ferreux (FEDEM), on behalf of the European copper industry.

Overall, we would like to stress the continued need for “exemption 6”, as no viable alternatives currently exist for industry. We would like to refer to comments previously made, in the context of Öko-Institut’s previous consultation on the exemptions contained in Annex II of the End-of-Life Vehicles Directive.

Please do not hesitate to contact us should you require any further details on the responses given, or any other information.

Yours sincerely,

Rainer Buchholz
WVM

Lene Madsen
ECI

Bernard Hellec
FEDEM

Directive 2002/95/EC on Restriction of Certain Hazardous Substances from EEE

Position on Questionnaire of Öko-Institut concerning Exemption 6

On behalf of the European copper industry, the European Copper Institute (ECI), Wirtschaftsvereinigung Metalle (WVM) and the Fédération française des minerais, minéraux industriels et métaux non-ferreux (FEDEM) are pleased to provide some comments to Öko-Institut's consultation on the exemptions to the so-called RoHS Directive.

ECI, FEDEM and WVM would like to state the continued need for exemption 6 under the RoHS Directive, for the use of lead as an alloying element in copper. We would like to build on comments previously made in the context of a similar consultation by Öko-Institut, on the exemptions allowed under Directive 2000/53/EC (the ELV Directive) and the resulting recommendations of Öko-Institut and Fraunhofer IZM to prolong the same exemption in the context of the ELV Directive¹.

Leaded copper alloys are used in a wide range of electrical and electronic applications. The relevant products include: terminal clamps, branch clamps, wire connectors, terminal blocks, luster terminals, terminals, plug connectors, inserts, connectors, pin plugs, bush, contact bushing, bolts, thread parts, shafts, spindles and tapers.

The lead embedded as tiny nodules in the matrix of these alloys has the function of a chip breaker. The formation of short chips, which are automatically easy to transport away, is facilitated. Only under these circumstances can the wrought products be processed around the clock on fully-automated fast-turning lathes. Another characteristic of the lead is that it acts as a lubricant and therefore reduces the tool wear. This aspect is quite important as other lubricants could cause more environmental problems during machining operation.

Industry is actively working on the development of possible substitutes. Among others, bismuth has been unsuccessfully considered as a potential substitute for lead in two-phase brass alloys. Indeed, the use of bismuth significantly complicates the production of wrought alloys, i.e. rods, wires and profiles. This is due to the increased internal stress in the material caused by the expansion of bismuth during solidification. This is also the reason why these materials are fair more susceptible to stress corrosion cracking. On top of this the risk of bismuth for human health and environment is not well known.

Furthermore, bismuth endangers the ability to produce so-called single-phase copper wrought alloys. These are brass alloys with a copper content of over 61% by weight. Bismuth contents as low as 20 ppm already lead to premature material failure even during the production of wrought products. Alloys containing bismuth are also more difficult to recycle.

¹ Final Report "Adaptation to Scientific and Technical Progress of Annex II Directive 2000/53/EC - Contract N°07010401/2007/470145/ATA/G4, Freiburg, 16. Januar 2008

While tests have been carried out with a view to developing lead-free alternatives, it is not technically feasible for the industry to face a change in the exemption at the moment. As regards information on specific tests, we would like to refer to detailed documentation previously provided in the context of the previous consultation concerning exemption 3 of the ELV Directive. A concentration value of 4 % for lead is still necessary.

The possibility for the industry to produce lead-free alternatives will depend not only on technological developments and testing, but also on the formal approval of such alternatives, their marketing and other aspects related to markets and competitiveness.

Lead free copper alloys exhibit different material characteristics and entail considerable cost increases due to higher copper contents. Due to this fact there is no experience in long term behaviour of the available possibilities. The risk of unexpected fallout of semi- and finished products for these alternative alloys is not tested. The few available alloys are protected by patents at this time, which prevents competition of free market philosophy.

In addition copper alloys from electrical applications are recycled into metallurgical processes. Recycling of lead in secondary copper elements is possible and widely used in copper recycling plants.

Lowering the lead content in copper alloys would severely increase the cost in the material chain in order to keep metal streams separate and would therefore have a strong negative effect on the very well established and functioning recycling processes which would need a complete redesign.

31 March 2008