

Consultation with the parties concerned relevant to evaluating and granting an exception for lead crystal glass in compliance with the Directive 2011/65/EU (RoHS 2)

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1. Introduction

The document is submitted based on the Directive of the European Parliament and of the Council 2011/65/EU¹ of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (the undermentioned “the RoHS 2 Directive”) defining restriction of the use of lead in glass in particular in crystal glass.

This RoHS 2 Directive defines this material in detail in Annex III of this Directive, and simultaneously makes an exception in the Article 5, Par. 2 relevant to the possible use of the material for the term of 5 years from day of the RoHS 2 Directive coming in force. This exception may be renewed.

The European Commission appointed the Oeko-Institute and the Fraunhofer IZM1 assist technically in assessing requests to renew the exception included in the RoHS 2 Directive.

The Oeko-Institute and the Fraunhofer IZM provide the consultation in the name of the European Commission. The aim is to collect contributions of interested parties published on websites². The role of these institutions is to collect and evaluate information given by the parties concerned with the aim of submitting recommendations and reasons for this exception granting.

¹ Directive of the European Parliament and of the Council 2011/65/EU - <http://eur-lex.europa.eu/legal-content/CS/TXT/PDF/?uri=CELEX:32011L0065&from=EN>

² <http://rohs.exemptions.oeko.info/index.php?id=228>

2. Information about lead in crystal glass as well as about the particular use of lead for which the exception is required, and its specific properties

2.1. Crystal glass containing lead is a traditional material used especially for classic light fixtures have being produced in our region since the 18th century.

It concerns glass objects made from lead crystal glass used for light fixtures – chandelier arms, chandelier trimmings, bowls, jars, vases, and other glass objects.

This material has specific properties making its long-term use possible. These properties include in particular:

- a) Optical-aesthetic properties, such as brilliance, typical refraction and diffraction of light, in an interaction with a source of light as well as with machining of these glass parts, especially grinding.
- b) Time stability of glass and interconnected properties.

3. Verifiable reasons for exception concluding references in compliance with conditions given in Article 5 of the RoHS 2 Directive

3.1. Scientific knowledge up to now do not result in any attainment of an equivalent substitute of this material because of its properties

Physical parameter	Lead glass	Lead-free glass	National standard
Refractive index	1.56 – 1.58	1.53 – 1.58	CSN 70 0545
Average optical dispersion	0.012 – 0.014	0.010 – 0.011	CSN 70 0545

Although it was succeeded in attaining refractive index of lead-free glasses on the level of lead glasses as a consequence of their chemical composition development, but in the case of average optical dispersion, which is one of the crucial optical-aesthetic parameters, this development was not successful; the values are not the same in comparison with lead crystal glasses. The average optical dispersion of lead-free glasses is lower by ca 20% in view of lead glasses, which is the cause of lower level of the colour effects perceived on final products.

3.2. Next important knowledge is:

- a) Raw material costs for lead-free glass melt manufacturing are higher than that for lead crystal preparation. The cause of it is the fact, that if high refractive index is to attain, it is necessary to use a more expensive material for glass batch preparing. The price is higher because of higher energy and raw material costs during its production, which results in higher environment load at the same time.
- b) As for lead-free glasses, technological and physical properties, such as meltability, formability, mechanical workability, lead to next production costs and higher energy consumption. Lead-free glass is more corrosive, so it is necessary to change refractory material of processing units. Production of this material is highly energy-intensive. Higher environment load again follows from it.

3.3. The give knowledge results in series consequences as follows:

When having a comprehensive attitude to the environment and human health protection, a counter-productivity of lead substitution in crystal glass is obvious. Because lower lead exposure is attained at the expense of higher emissions arising from higher energy, raw material, and material consumptions.

3.4. So, lead-free glass products become less competitive.

3.5. Users of these products get in a direct contact with them only sporadically for the reason of their location and so these products do not constitute a danger for them.

3.6. It is not a known fact that lead would release from any object made from lead crystal glass, and mounted on electrical or electronic equipment under the influence of electromagnetic radiation.

3.7. From technical, safety, and ecological standpoint it is also necessary to say that lead glass is one of the materials that are used:

- a) for protection against ionizing radiation,
- b) for shielding against dangerous electromagnetic radiation, e.g. microwave one.

Owing to a necessary functionality, these object made from lead glass are an integral part of electrical and electronic equipment, e.g. X-ray apparatuses, microwave ovens etc.

3.8. Lead oxides are synthesized into other substance: crystal glass, so that their toxicity is reduced in the significant way.

3.9. Strictly controlled conditions and methods are applied during production, so that emissions of hazardous substances are kept from escaping to atmosphere.

3.10. They do not constitute a danger for environment: they meet the requirements relevant to a safety disposal (according to CD 2003/33/EC).

3.11. Crystal glass is removed from the restriction of the REACH Regulation relevant to lead in objects.

3.12. Therefore, the exception renewing do not wear down the REACH Regulation.

4. Social and economic effect of the possible cancellation of the existing exception relevant to lead in crystal glass.

4.1. Components made from crystal glass represent a considerable part of the product portfolio of the company PRECIOSA – LUSTRY, a.s. PRECIOSA – LUSTRY, a.s. has been considered to be a knowledge upholder. It has ranked among top world producers. To a large extent, the production of these crystal glass objects is based on a traditional hand manufacture. The reduced use of lead crystal glasses would result in reducing product portfolio with a direct impact to number of jobs in the region. Nowadays, the

company PRECIOSA – LUSTRY, a.s. gives employment to almost 600 employees in the north of Bohemia (Kamenický Šenov). Cooperating smaller businesses in the vicinity are connected with the production of assortment using this glass as well. As for the Czech Republic, it is the region where a support of employment is important.

- 4.2. PRECIOSA GROUP, the part of which the company PRECIOSA – LUSTRY, a.s. is, ranks among important employers with ca 5 thousands of jobs. With respect to the position of the dominant employer, it attends to a local development, by means of its Foundation and supporting public or non-profit-making organizations (schools, hospitals, sport activities etc.) on the one hand, or directly by means of own sponsor's or other presents on the other hand.
- 4.3. Reduction of the company competitiveness in the sphere of crystal light fixtures production will have other negative impact. This fact may lead to disappointment of our customers requiring products with tradition, i.e. products preserving traditional materials and manufactured according to surviving formulas with a portion of a handwork. Products of PRECIOSA – LUSTRY, a.s. can be seen in buildings of prestige where also character of the given building calls for crystal light fixtures having their characteristic signs from the standpoint of the time of its construction. One of such requirements is the type of glass given. In some cases offices for the preservation of historical monuments or other institutions specify it with aim to preserve a consistency of cultural heritage and wealth, especially in buildings of historical importance – castles, palaces, theatres, churches, cathedrals and other similar buildings.
- 4.4. Reducing competitiveness of producers of these components or products within the bounds of the European Community and reducing their prevention against a negative influence of other producers, especially Asian ones as well. One of the main interests of the European Community should be to preserve economic and cultural heritage, if health of inhabitants of the European Community is not at risk.

5. Summary and recommendations

Like one of the traditional Czech producers of light fixtures and lighting technique using crystal glass containing up to 24% lead for these object production, the company feels deeply hurt by the restriction following from the RoHS 2 Directive. Therefore, within the bounds of the current consultation relevant to the point given of the RoHS 2 Directive, PRECIOSA – LUSTRY, a.s. is submitting proposals and recommendations as follows.

- 5.1. As for the evaluation, given in sections 2 to 4, we suggest to renew validity of the exception or define the permanent exception of RoHS 2 for:**
- a) Lead in crystal glass according to Annex I (categories 1, 2, 3, and 4) of Directive of the Council 69/493/EHS – RoHS 2 Directive, paragraph 29 of Annex III,**
 - b) Lead in glass for optical purposes – RoHS 2 Directive, paragraph 13 a) of Annex III.**

5.2. We support similar standpoints of glass producers in the Czech Republic that are hurt by these problems, with the aim to uphold the standpoint of the Czech producers.

5.3. We support similar standpoints of glass producers within the bounds of member states of the EU that are hurt by these problems, with the aim to uphold the standpoint of the EU producers.

5.4. We support similar standpoints of glass producers within the bounds of EDG (European Domestic Glass) that also claim to renew the exception relevant to crystal glass, and coordinates next process of the public consultation opened within the bounds of the European Commission organs.

In Jablonec-nad-Nisou, 12. 10. 2015

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