

Stakeholder contribution to the renewal Exemption No. 13a (Annex III)  
Exemption for „Lead in white glasses for optical applications“

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in the name of the Fraunhofer Group for Light & Surfaces,  
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## Questions

1. The applicant has requested an exemption for “lead in white glasses for optical applications” specifying that such glasses are in use in products falling under various categories of Annex I. Should an exemption be granted it is to be added to Annex III of the RoHS Directive.

a. Do you agree with the scope of the exemption as proposed by the applicant?

Yes, we fully agree with the scope and the text of the applicant.

b. Please suggest an alternative wording and explain your proposal, if you do not agree with the proposed exemption wording.

No alternative wording is needed, the explanation of the proposal is fine.

c. Please explain why you either support the applicant’s request or object to 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.

Photonics is indispensable – not only to our society, but also to innovations and growth in Europe. It has evolved into one of the most important key technologies in Europe with a major economic base and considerable potential for growth. European companies rank among the world market leaders in many sub-segments of photonics and, together with the research landscape, have contributed mayor effort towards consolidating a powerful position on the world market and safeguarding this over the years. The world market share is even significantly higher in the sub-segments of photonics belonging to the powerful core sectors in Europe (production technology, image processing and measurement technology, optical components and systems, and medical technology). Photonics is an enabling technology in nearly all application areas; it is used in production, security, consumer products, space applications, automotive, health, mobility, sensing, digital communication, IT, lighting and much more.

Photonics needs optical systems, which mostly contain optical glasses with specifically defined physical properties. These properties (dispersion, refractive index,...) are determined exclusively by the chemical composition of the glass. Lead-oxide based glasses have particular properties and are, in many application absolutely indispensable. In fact lead glasses are an enabler to achieve defined optical properties and functionality. Without these

properties, many applications (e.g. in security, automotive, ...) cannot be realized. Thus lead is essential for photonics and its ongoing economic success in Europe.

In fact, advances in optical technologies are strongly driven by the desire for more resource efficiency in economic and societal processes and thus linked to the reduction of the resource footprint to Europe's society as a whole.

Up to now, no substitute was found to replace lead in glass; there exists no alternative. Thus, we strongly support the applicant's request!

*2. According to the applicant, where alternatives have been developed, they have been implemented to eliminate the need for using leaded optical lenses. However, for most applications alternatives still do not exist that could allow fully replacing leaded optical lenses in the full application range.*

*a. Please provide information concerning possible substitutes or developments that may enable reduction, substitution or elimination, at present or in the future, of "lead in white glasses for optical applications";*

As already described in the exemption request, for most applications there exists no alternatives for using lead containing optical lenses. There is ongoing research (since years) to find substitutes, but up to now no substitutes for all lead containing optical glasses have been found. There is actually no way to see how lead can be completely substituted in optical glass/lenses. In the moment, lead is absolutely necessary to ensure the quality of optical systems in nearly all application fields.

*b. In this regard, please provide information as to alternatives that may cover part or all of the applicability range of leaded optical lenses;*

We have no further information on possible alternatives that are currently available.

*c. Please provide quantitative data as to application specifications to support your view.*

We have no more quantitative data to support our view as was already mentioned in the exemption request.

*3. Please provide information as to research initiatives which are currently looking into the development of possible alternatives for some or all of the application range of lead-based white optical glasses.*

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).

As already mentioned before, there is ongoing research to find substitutes, but up to now no substitutes for all lead containing optical glasses have been found.

This covers – of course – all applications of optics! Here no separation on (single) applications can be made!

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.

No stringent roadmap can be given at the moment. There is actually no way to see how lead can be completely substituted in optical glass/lenses.

Jena, 15.06.2015



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