

Questionnaire 1 (Clarification) Exemption 14 of RoHS Annex IV

Wording of the Requested Exemption:

Lead in single crystal medical ultrasound transducers

Requested validity period: 7 years

1. Acronyms and Definitions

Pb	lead
PIN-PMN-PT	lead indium niobate - lead magnesium niobate – lead titanate
PMN-PT	lead magnesium niobate - lead titanate

2. Background

Bio Innovation Service, UNITAR and Fraunhofer IZM have been appointed¹ by the European Commission through for the evaluation of applications for the review of requests for new exemptions and the renewal of exemptions currently listed in Annexes III and IV of the RoHS Directive 2011/65/EU.

COCIR submitted a request for the renewal of the above-mentioned exemption, which has been subject to a first review. As a result we have identified that there is some information missing. Against this background the questions below are intended to clarify some aspects concerning the request at hand.

We ask you to kindly answer the below questions until 29 August 2020 latest.

3. Questions

1. You explain in your exemption request that single crystal piezo materials of the types are not what is typically considered a ceramic because they are not poly crystalline. Do you think this actually disqualifies them from being defined as ceramics from a material science point of view?

There does not seem to be consensus over the definition, but sources such as the American ceramics society state that it should not. American ceramics society website states:

‘Ceramics are by definition natural or synthetic inorganic, non-metallic, polycrystalline materials. Sometimes, even monocrystalline materials, such as diamond and sapphire, are erroneously included under the term ceramics. Polycrystalline materials are formed by multiple crystal grains joined together during the production process, whereas monocrystalline materials are grown as one three-dimensional crystal. Fabrication processes of polycrystalline materials are relatively inexpensive, when compared to single crystals. Due to these differences (e.g., multiple crystals with various orientations, presence of grain boundaries, fabrication processes), polycrystalline materials should really not be confused with single crystals and should be the only ones included under the definition of ceramics’.

¹ It is implemented through the specific contract 070201/2020/832829/ENV.B.3 under the Framework contract ENV.B.3/FRA/2019/0017

COCIR does not regard single crystal materials are ceramics. If the existing exemption 14-IV is combined with exemption 7c-1 of Annex III, new wording must be added that clearly explains that single crystal piezo material in not ceramics or glass, but are single crystalline materials.

2. You propose to combine exemptions 7c-I and 14 into one exemption. Since the new wording you propose restricts exemption 14 to category 8 applications, it should not be shifted to Annex III. Vice versa, the current exemption 7c-I of Annex III is not limited to cat. 8 and thus cannot be transferred to Annex IV. In case it cannot be clarified whether single crystal piezo materials are ceramics, would you agree to an approach which excludes exemption 14-IV from the scope of exemption 7c-I? We would include such a recommendation into the review report.

In COCIR's opinion, 14-IV is currently excluded from 7c-I of Annex III because 7c-I does not include single crystal materials. One option would be to include in the scope of 14-IV both polycrystalline and single crystal medical ultrasound transducers. Although COCIR has suggested that 7c-I and 14-IV could be combined, we have no objection to continuing with the current status quo, with two separate exemptions. It is more important that the scope of exemptions are clear and that lead in both polycrystalline and single crystal materials are exempt.

Please note that answers to these questions will be published as part of the evaluation of this request. If your answers contain confidential information, please provide a version that can be made public along with a confidential version, in which proprietary information is clearly marked.