CELMA DOM(SM)264

CELMA replies to Öko Institute on CELMA RoHS Exemption request for "Decorative ceramic lamp bases or other ceramic components of luminaires containing lead and/or cadmium in the glaze/colouring"

20 June 2012

Questionnaire for Further Clarification

Exemption Request "Decorative ceramic lamp bases or other ceramic components of luminaires containing lead and/or cadmium in the glaze/colouring"

Background

The Öko-Institut together with Fraunhofer IZM has been appointed within a framework contract for the evaluation of applications for granting, renewing or revoking an exemption to be included in or deleted from Annexes III and IV of the new RoHS Directive 2011/65/EU (RoHS 2) by the European Commission.

You have submitted the above mentioned request for exemption which has been subject to a first completeness and understandability check. As a result we have identified that there is some information missing and a few questions to clarify before we can proceed with the online stakeholder consultation on your request. Therefore we kindly ask you to provide answers for the following questions and to reformulate your request if necessary.

Questions

1. Please indicate in more detail the functionality and technical necessity of lead and cadmium in decorative ceramic lamp or ceramic components. Which technical properties of the substances are needed for the specific applications? Could you please provide technical or scientific based criteria representing the aesthetic ability of the luminaire?

2. For which kind of applications a further exemption from the requirements of the RoHS-Directive will be needed?

3. Please, specify the type and quantity of lead and cadmium
    - in absolute numbers and
    - in percentage by weight in homogenous material.

- Please also provide an estimate of the annual quantities of the lead and cadmium used in the specific applications in EU

4. You mentioned that for the specific applications lead cannot be replaced in glazes.
   - Please provide test results/protocols (e.g. from different brands you mentioned such as Meissen, Delft etc.) that clearly indicate that decorative ceramic lamp or ceramic components containing lead has significant technical advantages over substitutes.
   - Could you please elaborate more detailed the efforts which have been made to develop alternative glazes or colourings during the last three years?
   - Is there a timeline for the next five years for possible substitutes? Which technical and/or market developments are expected for the next five years?

5. You stated that cadmium is used only for bright red/orange colour.
   - Could you provide a typical layout design for decorative ceramic lamps? Are there design options available to reduce cadmium?
   - Could you please elaborate more detailed the efforts which have been made to develop alternative glazes or colourings during the last three years?

6. Please indicate if the negative environmental, health and/or consumer safety impacts caused by substitution are likely to outweigh the environmental, health and/or consumer safety benefits. If existing, please refer to relevant studies on negative impacts caused by substitution.

CELMA replies

With regard to the above questions, it is important to understand that the EU market for glazed ceramic table lamps is relatively small and is almost always a business arising from the conversion of ceramic vases and other ceramic goods for which there are no requirements to limit the lead and cadmium content in the glazes internationally.

As a result of the small proportion of ceramic products which are converted, the ceramic producers have no incentive to investigate the production of cadmium and lead-free alternatives. The lighting industry in this particular area consists of small SMEs that search for artisan suppliers the world over to find decorative objects that can be converted to table lamps. These artisan suppliers of ceramics are not asked by any of their other customers for such detailed technical information and as a result there is no research available to the lighting industry relating to work to find alternatives.

Lead in glazes is used to facilitate the melting of glazing particles which creates a thin glass-like surface on otherwise porous pottery. Lead is also associated with richness of colour in glazes.

Red colours have long been a challenge for the ceramic industry as most red pigments are unstable at high temperatures. The deep red colour produced by cadmium selenium sulphide is prized for its pure deep red colour. Cadmium is also used to increase the vividness of ceramic glaze colours.

Lead and cadmium in ceramic glazes are permitted in cookware and table ware for the preparation and serving of food and beverages as long as they are fired in accordance with the manufacturer's instructions and pass tests to ensure the lead cannot leach into the food or beverage.

The concern of the lighting industry is that compliance with requirements to produce lead and cadmium free ceramic products will outlaw the tradition of small SMEs sourcing decorative ceramics the world over and converting them to light fixtures. These same ceramics can legally be sold in Europe as vases and other decorative items and some are deemed safe for food consumption. However, once a lampholder is attached to the decorative ceramic item it falls within the scope of the RoHS Directive and would be considered illegal.

It has not been possible to establish the quantities of lead and cadmium used in the production lighting fixtures but it is extremely small and being encased in a glass-like substance, the amount leaching into the environment on disposal can be regarded as minimal and considerably less than that from disposal of tableware and other ceramic products.