Öko-Institut e.V.
Yifaat Baron
P.O. Box 17 71
D-79017 Freiburg
Germany

12th June 2015

Dear Ms. Baron,

Response to 2015 Consultation 1: Exemption 13(b)
"Cadmium and lead in filter glasses and glasses used for reflectance standards"

Nanoco is a well-established UK-based developer and manufacturer of CFQD® cadmium-free quantum dots (free of cadmium and other toxic heavy metals), which can be used in many applications including display screens, lighting, solar cells and biological imaging.

We have previously responded to consultations on proposed extensions of Exemption 39, for the use of cadmium-based quantum dots in lighting and display products.

We are writing to you in order to express our concerns about the possible misinterpretation of Ex. 13(b) as being in some way applicable to the use of cadmium-based quantum dots in lighting and display systems. This concern was raised in the previous Exemption 39 review, and was addressed in the Öko-Institut's final report, issued in April 2014. The conclusion reached was as follows:

"Though it could be that the existing formulation was not taken under consideration in the course of the review, the fact that a specific exemption was granted should clarify that the areas of application in which such materials were permitted for use fall under the scope of Ex. 39 and would thus not fall under the scope of other exemptions. As the scope of Ex 13(b) is narrower in relation to the earlier Ex. 13, the same logic should apply concerning the scope of the current Ex. 13(b), thus also not to be understood to cover Cd QD applications in displays and lighting.

We fully agree with this conclusion, as the cadmium-based quantum dots for lighting and display applications:

- Are not incorporated into glass. They are embedded in plastic resin, which is then encapsulated by glass or by further layers of plastic which are intended to exclude oxygen and water vapour.
- Do not exhibit the sharp absorption filter cut-off or reflection cut-off performance that is the justification for 13(b). They absorb over a broad range of wavelengths.
- Do not act as a filter, since they re-emit light.

However, since some cadmium-based QD manufacturers have claimed in the past that 13(b) does apply to their products when encapsulated inside glass or plastic components for lighting and display systems, we would like to request that the wording of any new or extended exemption should make any such incorrect interpretation impossible.

This is even more important now that the European Parliament has voted overwhelmingly against the proposed Exemptions 39(a) and 39(b) on the 20th of May 2015, which explicitly addressed the use of cadmium-based quantum dots in lighting and display applications. It is possible in this context that suppliers may again seek to rely on Exemption 13(b) to support the use of cadmium in lighting and display applications, although this is clearly not the intent of this Exemption.

In order to prevent potential abuse of Exemption 13(b), we would like to suggest that your report re-confirms that the scope of 13(b) does not include the use of cadmium-based quantum dots, as previously described in the April 2014 report on Exemption 39. New wording of Exemption 13(b) (if an extension is granted) should be adopted to make this clearer, for example:

"Cadmium and lead as additives fused into glass or glazes used for making filter glasses and glasses used for reflectance standards in optical instruments"

We believe that this wording better describes the way that cadmium and lead are incorporated by melting into the glass or glaze used for these products in small volumes for specialised, professional markets. It also ensures that the cadmium and lead cannot be easily released, since they are fused into the glass or glaze and are therefore part of the vitrified structure.

We would like to thank you for your invitation, allowing us to participate in this exercise and provide you with our input.

Yours sincerely,

Andrew Gooda
Quality Director
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