DuPont Electronics and Imaging Division
DuPont

13 May 2019

Oeko-Institut e.V.
Institute for Applied Ecology
Merzhauser Str. 173
79100 Freiburg
Germany

Re: 2019 Oeko Institute Consultation on use of cadmium Quantum Dots in Display and Lighting applications

Dear Sir,

We would like to provide our comments to the latest requests for cadmium exemption to EU RoHS, the new exemption for lighting and further extensions to Exemption 39a.

We are disappointed to see that cadmium products and applications are still being researched and developed for the Electrical and Electronics (EEE) Industry despite cadmium being an original high risk element introduced under the RoHS Directive of 2006.

The fundamental principle should be applied that cadmium is toxic and should not be contemplated for development into EEE products. The fact that such exemptions exist only appears to encourage continued development and penalises those companies seeking to develop “non RoHS” substance products.

The latest series of applications suggests that cadmium products are not only being further developed but that new cadmium products are being researched for the market.

Our particular comments to the three current applications is that they continue to weaken RoHS and extend the use of cadmium in the environment through EEE.

1. Applications for further extension and modification to Exemption 39a

Current exemption 39a

Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display and projection lighting applications (< 0,2 µg Cd per mm2 of display screen area)

Najing proposal to extend and modify exemption 39a

Cadmium selenide in downshifting cadmium-based semiconductor nanocrystal quantum dots for use in display lighting applications (<0.1 µg per mm2 of display screen area) *Requested 2 year period*	This might appear to be a significant reduction in cadmium use however, the total quantity is dependent upon display screen size which are increasing in most domestic settings. It also offers a possible route into lighting applications which was specifically removed for the last extension (EU/2017/1975) following the consultations of 2013 and 2015.

Osram proposal to extend and modify exemption 39a

Cadmium in downshifting semiconductor nanocrystal quantum dots directly deposited on LED chips for use in display and projection applications (< 5 µg Cd per mm² of light emitting LED chip surface). *Requested 5 year period*	This proposal removes the specific cadmium selenide reference which opens up the exemption to a whole range of new cadmium substances. This suggests research is continuing into new cadmium products rather than into cadmium free alternatives. It also offers a possible route into lighting applications which was specifically removed for the last extension (EU/2017/1975) following the consultations of 2013 and 2015.

2. New Application for cadmium Exemption in lighting

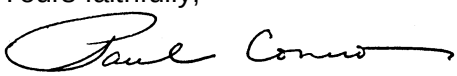
LightingEurope request for new exemption

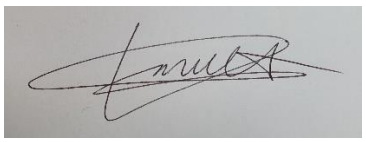
Cadmium (<1000 ppm) in luminescent material for on-chip application on LED semiconductor chips for use in lighting applications of at least CRI 80.	This proposal targets lighting which was specifically rejected by the European Commission in the last extension of 39a (EU/2017/1975) following the consultations of 2013 and 2015. It presents a new wide dispersive use of cadmium in the environment through EEE.

There should be no need for cadmium quantum dots in either display screen technology or lighting. It is clear that major television manufacturers are already using cadmium free quantum dots as commercial alternatives. Alternative LED options for energy efficient lighting is already commercially available; cadmium QDs here would provide a wide dispersive use of cadmium domestically and in the environment.

For and on behalf of DuPont Electronics and Imaging,

Yours faithfully,





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