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The European Commission

To whom it may concern

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**Betreff:**

**Consultation Questionnaire Exemption No. 4(f) of RoHS Annex III**

Dear Sir or Madame.

Regarding the Consultation Questionnaire Exemption No. 4(f) of RoHS Annex III please find here our answers to best of our knowledge.

We are a manufacturer of engineered wood-boards with 1 plant in Germany and 2 plants in Poland. We employ around 1.500 employees in total. We have a high degree of refinement of our products and paint around 100.000.000 m<sup>2</sup> of engineered wood-boards per year. We use UV lamps to cure the paint film.

**Answer 1a:**

We support the wording, scope and the extension of the exemption at least until 2026. There are no suitable alternatives for our painting process to cure the paint-film without a fundamental loss of performance. With an alternative technology like UV-LED, we cannot achieve sufficient curing of the paint-film. This has several harmful effects (see 2a). For sufficient curing with UV-LED, Photoinitiators would be required that are precisely matched to the emission spectrum of the LED. But these are not available from the raw material suppliers side. Questions when such Photoinitiators can be expected, are not answered. While the development of UV LEDs moved steadily, on the raw material side nothing has changed in the last 10 years. That's why we expect a very long time until such Photoinitiators will be available. If any.

**Answer 1b:**

From our point of view, shortening the period of validity does not make sense, as it will certainly take a long time until adequate UV LEDs (production speed vs. LED power) are available and the raw materials industry can offer adapted Photoinitiators. Our entire product range of coated boards (100.000.000 m<sup>2</sup> / a) is protected with transparent UV varnish. The elimination of mercury-containing UV lamps would mean the loss of these surfaces, as they cannot be realized with alternative light sources, currently. The surfaces cured with UV-LED turn yellow, do not meet the quality requirements, has unpleasant odor due to incomplete polymerisation. Switching to a different paint system (e.g. hydro-based) cannot be implemented with the existing coating-lines and does not meet the quality requirements with regard to physical and chemical stress.

**Answer2a:**

There are no suitable alternatives for our coating process to cure the paint film, while maintaining the quality requirements and comparable emissions from the paint surface. In order to enable the use of

monochromatic UV LEDs, adapted Photoinitiators would have to be available, but these are not available on the market. The use of alternative Photoinitiators in the UV-coating in connection with UV-LED, leads to a massive, unacceptable yellowing of originally white surfaces. In addition, incomplete curing of the UV lacquer film appears. This leads to strongly reduced surface-resistances and exceeding the VOC emissions from the paint film. Furthermore, the incomplete curing by UV-LED leads to unpolymerized Monomer, Polymer-and Photoinitiator residues that have negative health effects on the end customer. The increased emissions go hand in hand with an unpleasant odor. The existing UV lacquers must be equipped with available Photoinitiator (tailored for Ga-doped lamps) that respond to the emission spectrum of the UV-LED. This increases the price of the paint and thus our production costs, by estimated 30% or higher.

**Answer 3:**

Well-known manufacturers of UV LEDs are:

-Efsen

-Dr. Hönle

-Easytec

-Heraeus

As far as we know, no product from the manufacturers mentioned, is able to provide a 1:1 replacement for HG-lamps. A partial replacement of HG-lamps is theoretically conceivable. Example: 3 out of 6 HG lamps are replaced by UV LEDs. So far, there are no examples of practical implementation (comparable with our painting process) in the industrial sector. It will not be possible, to replace UV-lamps without adapting the UV coating system using appropriate components. The only thing that is certain is, that the costs / painted m<sup>2</sup> will increase significantly. The LED-manufacturers do not make any statements about the feasibility for our painting process.

**Answer 4b:**


If the exception clause is not extended, the stored mercury lamps, as well as the UV curing systems, consisting of ballasts, transformers, lamps, etc. belt cooling, transports, lamp housings, reflectors, shields and switch boxes. All our UV- units yields an estimated 35-40 tons of waste, of which approx. 5-10 tons are electronic waste.

**Answer 4d:**

If it is not possible to replace UV lamps with a suitable alternative technology, we will no longer be able to serve our customers. This means, that an essential part of our added value is eliminated. This would not only eliminate jobs in the coating-lines, but also in the areas of administration, work preparation, further refinement and logistics. That would be a life-threatening situation!

Even if the use of UV LEDs should be possible, as previously described, the product will be more expensive and in this case, previously more inefficient technologies (foils / CPL lamination) become competitive. This will also lead to a significant drop in sales, which, however, is difficult to quantify from today's perspective.

Mit freundlichen Grüßen / Best regards / Z pozdrowieniami



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