

June 22, 2015

Dear RemPhos customers:

This letter is to provide you with additional information in response to your inquiry on the potential hazardous nature of an LED lamp.

I have reviewed the article titled “Potential Environmental Impacts of Light-Emitting Diodes (LEDs): Metallic Resources, Toxicity, and Hazardous Waste Classification” published by the University of California Davis in 2010.

Over the past 8 years I have had the opportunity to study at great lengths, attended seminars and been a presenter on panels for this very topic.

While I obviously have a vested interest in LED lighting for business purposes, I am truly passionate about the positive impact that my company can make on this planet.

In fact, it is at the core of our mission statement (which can be seen at [www.remphos.com/about-us](http://www.remphos.com/about-us)):

“Focusing on environmentally friendly, efficient LED lighting, our products render energy-wasting traditional lighting obsolete...David is determined to have RemPhos reduce America’s carbon footprint through lighting alternatives and believes that LED technology is a proven solution. He shares his knowledge as a guest presenter at industry conferences, and as an invited student mentor for non-profit and academic presentations.”

The industry leaders have done extensive testing and verification with federal and California state regulations/standards and haven’t found anything substantial to rule LEDs hazardous.

When considering the environmental impact that a lighting product makes, one must consider the entire life cycle from beginning to end:

- Inputs (raw materials)
- Manufacturing
- Transport
- Use
- End of Life

The sum of all these products is the full environmental impact. Perhaps the most extensive and respected report on this subject is the US DOE’s “Life Cycle Assessment of Energy and Environmental Impacts of LED Lighting” published in 2012. This is the only report that has thoroughly analyzed each step of the life cycle **AND** compared the results to the other available alternative lighting technologies such as fluorescent (which includes CFL, cold cathode and typical fluorescent) and incandescent. The entire report can be found here:

[http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/2012\\_led\\_lca-pt2.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/2012_led_lca-pt2.pdf).



**The conclusion of this report is that LED technology has an environmental footprint which is considerably better than any other alternative.**

In addition to the findings of this report, it's important to note that each LED lighting manufacturer has the ability to further improve the environmental friendliness of its product through the choices they make. My company, RemPhos, takes this responsibility seriously. Here are just a few of the measures we take:

- We build our factories to meet the highest environmental standards.
- We build our products using as much recycled materials as possible.
- We obtain RoHs compliance not only on our finished product but we require these documents from our suppliers.
- We use 100% recycled packaging materials and we design packaging in a way that reduces the amount required and makes transporting more efficient.

After reviewing the provided article, I stand firm to my belief that LED technology is the safest, cleanest choice available today for reducing our carbon footprint and doing our part to ensure this planet stays as uncontaminated as possible for future generations.

Thank you for the opportunity,

A handwritten signature in black ink, appearing to read "David L Gershaw".

David L Gershaw  
President

*RemPhos Technologies LLC*

