Ultraviolet Safety

Ultraviolet curing carries with it a number of risks. HID Ultraviolet is committed to the safe operation of UV curing equipment and strongly encourages all users to receive appropriate training from their equipment manufacturer and/or formulator before ever turning on a machine.

Ozone

Ozone is generated by deep UVC light, such as that generated by many pieces of UV curing equipment. It tends to be destroyed by high temperatures, so a lamp will generally output the most during warm-up.

Ozone can be detected in extremely low concentrations, down to 10ppb. OSHA regulations limit exposure to 100ppb averaged over 8 hours.

Ozone exposure has been linked to many cardiopulmonary problems, asthma, bronchitis, heart attacks and eye irritation.

Some equipment manufacturers either use or offer lamps which do not generate ozone at all. For certain specialized applications, this can impact curing. Check with your coating supplier.

Mercury

The standard for site-applied UV curing is a mercury dosed lamp. As a toxic metal, care must be taken with lamp disposal, especially with broken lamps. Lamps can contain up to 250mg of mercury, which can cause damage to the central nervous system, kidneys, and other organs.

HID Ultraviolet's equipment is very low in mercury, containing less than 15mg, or little more than a standard fluorescent lamp.

Exposure

The ultraviolet region of the electromagnetic spectrum lies slightly outside the range of human vision, beyond blue and violet light. It is generally split into three bands: UVA, UVB and UVC. UVC is not found naturally at ground level, as it is filtered out naturally by the ozone layer, but UVA and UVB are both present in some concentration from the sun.

Each band presents unique hazards since they penetrate different layers of the skin and eyes differently.

All three ultraviolet bands have been linked to skin cancer. Long term exposure to UVA can contribute to aging effects, while UVB is responsible for sunburn.

Both UVA and UVB over long term exposure have been linked to cataracts. UVB and UVC can cause photokeratitis, or welder's flash.

Always wear UV blocking glasses or a UV blocking face shield and appropriate skin protection when working with or near any UV curing equipment. Talk with your equipment manufacturer for more details on what you should do to protect yourself.

Negligence

Operating a piece of UV curing equipment is a bit like using a chainsaw. It can be done safely, but a reckless or uneducated user is a serious hazard. There is some inherent level of danger present, but proper training and safety gear makes UV equipment very safe.

Pay attention and be careful!

Ultraviolet technology is safe when all the risks are understood and the operator trained.

HID Ultraviolet is happy to answer any questions you may have about UV curing, and offers free training at our facility for anyone who purchases HID Ultraviolet equipment. If you have any questions, feel free to contact Dan Dayon by phone at **(973) 383-8535 x205** or by email at **ddayon@hid.com**

HID Ultraviolet

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