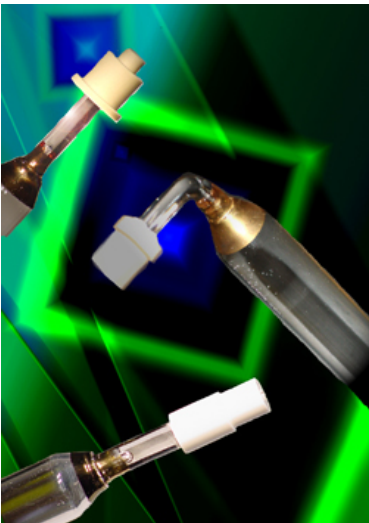


Safety-Ultraviolet Curing Lamps

Ultraviolet curing lamps have health and safety concerns. It is important to know what concerns exist so that they can be dealt with properly. UV curing products are supplied by many companies and it is always best to check with your supplier with any specific concern.

Besides the typical electrical and heat concerns a printer deals with, UV curing systems introduce intense UV light. Shielding is absolutely mandatory. UV lamps produce harmful UV radiation that can cause serious burns to skin and eyes. While thermal burns are felt immediately, UV burns are not felt for several hours. Short exposure to lamp radiation can cause severe burning to eyes and skin. Fortunately, UV light does not reflect significantly from most surfaces. If one does not have a direct line of sight to the lamp or reflector, there typically is not a significant amount of UV energy to worry about. The fact that visible light can be seen does not mean that significant UV energy is present. Normally, even escaping visible light is minimal with a well-engineered UV lamp system. If a large amount of light is escaping, the system supplier should be notified to determine if a problem exists.



Another health concern regarding the UV lamp is the generation of ozone. The interaction of short-wavelength UV light with oxygen causes the generation of ozone. Although it is possible to use an “ozone free” lamp, the negative impact on curing is significant enough that very few people use these lamps. Most suppliers handle the ozone concern by ducting the ozone away from the work environment. Due to the high reactivity of the ozone, the molecule will typically decompose back to oxygen while traveling through the exhaust system.

Finally, high voltages and currents are necessary to energize UV lamps. Lamp wiring should be in separate conduit away from with control wiring. All wires must be kept from the lamp radiation area. Electrical interlocks should be provided on the processor and its power supply. Regular maintenance inspection should be made to ensure these are not defeated in use. *Electrical systems should be serviced only by qualified electricians.*