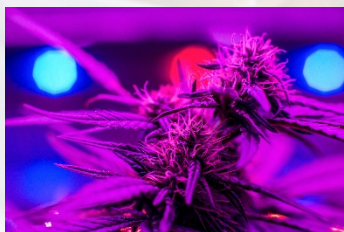


SAFETY MEETING: Grow Lights

CANNABIS

UV Radiation Exposure



Ultraviolet (UV) radiation comes from natural sources (like the sun), and artificial sources (like lights and welding equipment).

Artificial light includes UV radiations in its composition. Research data shows that light bulbs used in indoor grow facilities can emit dangerous levels of UV light radiation. Workers are at risk when they are exposed for long periods of time or work in close proximity to the bulbs.

Extended exposure to UV light is widely known to cause skin cancer, immune system suppression and eye damage.

UV overexposure happens because UV is invisible and does not produce an immediate reaction. Workers in cannabis growing may not always know if they have been exposed to harmful amounts of UV light on the job.

UV radiation accidents often involve work near UV sources where protective coverings have cracked, fallen off or been removed. Depending on the intensity of the UV source and length of exposure, a worker may end up with a work-related injury.

The photochemical effects of UV radiation can be intensified by certain oral and topical medicines including certain prescribed medications, birth control pills and antidepressants.

Labeling on UV sources usually includes a caution or warning, and hazard communication training is especially important to help prevent accidental exposures in the workplace.



UV Radiation Sources

GROW LIGHTS used by the cannabis industry to nurture and grow plants range in variety. These high-pressure sodium, metal halide and wide-spectrum LED lights can emit ultraviolet (UV) radiation, and can cause cataracts, macular degeneration and damage to the cornea.

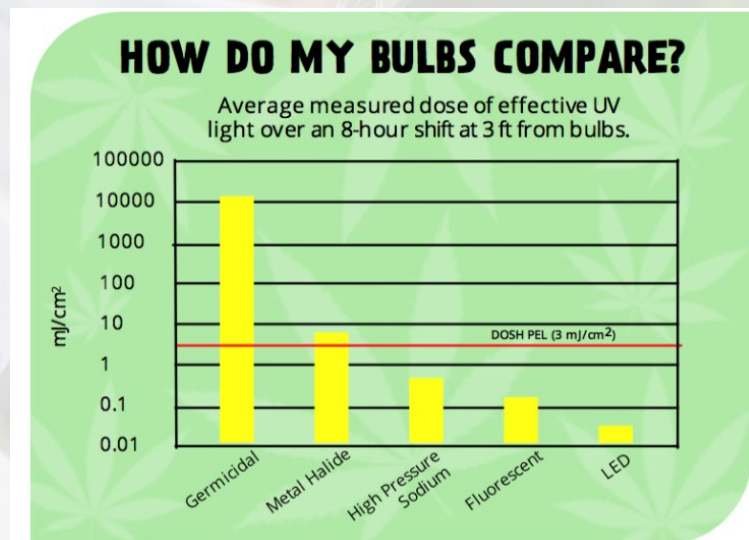


- **Metal Halide Lights:** Contain an inner arc tube that emits intense UV radiation along with visible light, similar to a welder's arc. Normally the outer glass bulb reduces UV radiation to nominal levels. If the outer bulb is broken, UV levels can be significant enough to cause damage to the eyes and skin, including photokeratitis, a painful eye condition that can occur several hours following exposure.
- **LED Lights:** Can potentially emit UV radiation. Prolonged UV exposure may cause damage to unprotected eyes.
- **UV Lamps:** Used as germicidal tools, UV exposure can cause ocular inflammation, and sunburn-like effects on the skin.
- **Fluorescent Lights:** Present a hazard when bulbs break or are damaged. Lead, cadmium, and mercury, which are toxic to humans, are commonly utilized in the composition of fluorescent bulbs, and these metals can be inhaled as vapours when the bulbs are broken.

SAFETY MEETING: Grow Lights

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Disposal of broken or damaged lighting can be hazardous. It is critical that employees know how to properly dispose of these items and have a Hazardous Waste Plan.



Graphic: Northwest Center for Occupational Health & Safety:
<https://deohs.washington.edu/nwcohs/blog/over-exposure-uv-light-hazard-cannabis-growing-facilities-uw-researchers-say-yes>

How do I protect myself?

Elimination / Substitution:

- Consider substituting metal halide lights with safer alternative lights that do not have UV and/or dangerous metals.

Engineering Controls:

- Always operate metal halide and high-pressure sodium discharge lamps with the compatible ballast, rated fixture (open/closed, wattage), and socket.

Administrative Controls:

- All bulbs and lighting fixtures must be installed and operated in strict accordance with manufacturer specifications.
- Immediately remove broken lamps from service.
- A safe work procedure should be followed for the proper clean-up of broken bulbs.
- Develop a program to ensure used and broken bulbs are disposed of as hazardous waste.
- Avoid working in areas where germicidal UV lights are in active use.

Personal Protective Equipment (PPE):

- Provide and require the use of the appropriate glasses or goggles for employees who work in intense lighting areas. Ensure that eye protection is rated for the UV wavelength that is being used.
- Exposed skin should remain covered by wearing long sleeved tops.



Where do I get more information?

- [AgSafeBC - Cannabis Industry Resources](#)
- [WorkSafeBC – UV Exposure from Broken Metal Halide Lights](#)
- [NES Global – Marijuana Industry Hazards](#)
- [Guide to Worker Safety and Health in the Marijuana Industry \(2017\)](#)