



Safety Instructions for UV-Kleen (UV)

The National Institute for Occupational Safety and Health (NIOSH) USA recommends that the time of exposure to intensity of $100\text{uW}/\text{cm}^2$ at 253.7nm UV-C should not exceed 1 minute. When averaged over 10 sec, this value is $600\text{uW}/\text{cm}^2$; and over 1 sec, it is $6000\text{uW}/\text{cm}^2$. These values are significantly lower than any UV light currently available in the market. UV radiation is invisible to the naked eye, however, it may cause skin irritation, potentially leading to skin cancer and cataracts. However, with appropriate training and the use of PPE, UV light is safe to use for disinfectant purposes. It is highly recommended to use the following precautions when operating UV-KLEEN™ UVC products:

- 1) Read and follow the operating manual directions before operating the units
- 2) Authorized personnel is required to operate the unit
- 3) Wear appropriate personal protective equipment (PPE) such as UV blocking safety goggles, full sleeves, and UV blocking face shield
- 4) Cover arms and neck and limit exposure time.
- 5) Ensure the application area (room) is vacant, and any occupants/operators wear proper PPE mentioned in item 3 above
- 6) Never look directly at the UV light and always wear proper eye protection
- 7) Do not expose the UV light to humans, animals, and any other living organisms
- 8) Do not walk toward the unit while it is ON or in operation. Be sure to turn off the unit before approaching
- 9) Consult a physician immediately for any irritation or symptoms due to possible over-exposure

If exposed to UV lights:

- 1) If eyes are irritated: Wash your eyes with clean water immediately
- 2) Always consult a physician or eye doctor for any physical discomfort or eye irritation



Safety Instructions for UV-Kleen (Ozone)

High output Ozone generators are used in some UV-KLEEN™ product line. During the operation, a high amount of ozone is generated in a short period of time, which is intended to disinfect the area by oxidizing the pathogens. While short term exposure is acceptable with Ozone generators, prolonged exposure can irritate or damage the respiratory system.

The UV-KLEEN™ systems are equipped with Ozone sensors that continuously sense the Ozone values in the room to make sure the levels never exceed 1ppm. 1 ppm is lethal enough to kill bacteria, viruses, and spores in the room. The UV-KLEEN™ systems are forced to shut down when the 1 ppm level is reached in the room. The following precautions need to be followed when operating Ozone generators:

- 1) Never operate the unit with personnel in the room
- 2) Approach the unit with proper PPE as mentioned above for UV system. N95 rated masks should be used when operating the ozone units
- 3) Keep the unit out of reach of children
- 4) Unplug the unit when not in use
- 5) After use of the ozone generator, ventilate the space with sufficient airflow to remove ozone odor, as well as to decrease the ozone concentration to safety standard level. The recommended hold-up period depends on the room size, and is normally 10-30min after the ozone module is completely turned off.
- 6) Follow the specific instructions provided with the each unit.

If exposed to excessive Ozone:

- 1) Immediately turn off the unit and ventilate the area. Walk away from the unit and rest
- 2) Ventilate the space with sufficient airflow to decrease the Ozone levels in the room
- 3) If the person has difficulty in breathing, oxygen can be administered by a competent individual using the appropriate equipment. A competent individual is an occupational health professional or workplace first aider who has received training in oxygen administration and whose competency is assessed on a regular basis.
- 4) Seek additional medical help if needed.