



The University of Hong Kong

# SAFETY MATTERS

June 15, 2009

To: List "C"

## Accidental Exposure to Ultra-violet Radiation

An incident happened recently in the University where a staff member was accidentally exposed to ultra-violet light from a germicidal UV lamp for a few hours and suffered minor eye injury from the exposure. Fortunately, the injury appeared to be temporary. This accident was mainly due to ineffective safety design of the concerned room where a UV germicidal lamp was left on when people were in the room. In this particular incident, the administrative measure to have the UV lamp turned off before people entering the room failed to work.

In general, UV radiation has many applications. Some examples of UV sources are germicidal lamps, mercury lamps, welding equipment, polymerizing equipment and UV-fluorescence microscopes. While some sources are well enclosed, some instruments such as germicidal lamps are designed to have an open source. UV radiation, depending on its wavelength, can produce various harmful effects. These include erythema (sunburn on the skin), inflammation of the eye and the tissue around the mouth. Long-term effects may include premature skin aging, cataract and skin cancer. Exposure to UV radiation should therefore be minimized.

In particular, the use of germicidal lamps in laboratories, clinical areas or biological safety cabinets should be taken with caution. If you are using germicidal lamps in these situations, you should have one or more of the following safety features put in to prevent accidental exposure of people to UV radiation:

- Strictly controlled access to the room when the UV lamp is on;
- Key-controlled switch of the UV lamp to prevent accidental activation;
- Warning light and sign outside the room to indicate the hazard;
- Suitable light fixture with baffles to prevent direct exposure of people in the room;
- Interlocking the UV lamp with the room general lighting so that the UV lamp is turned off when the general lighting is turned on;
- Interlocking the UV lamp with the door so that the UV lamp is turned off when the door is opened.

The most appropriate combination of the above safety measures should be based on operational needs. If your department is using or considering the use of UV germicidal lamps or other UV equipment, and you would like some advice on the safety precautions, please do not hesitate to call the Safety Office on 2859 2400 or email [safety@hku.hk](mailto:safety@hku.hk).

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