February 2017

Patrolling Scientific Departments

An information guide for Security Personnel entering and patrolling laboratories

Occupational Health & Safety Service
HSD105M (rev 4)

UNIVERSITY OF CAMBRIDGE

Safety Guidelines for Patrolling Scientific Departments

Certain areas in laboratories present specific types of hazard. However, the risk from these hazards is minimal under normal circumstances.

E.g. a bottle of acid on a laboratory bench could be classed as a hazard BUT the risk to you or any other person from this bottle of acid is insignificant whilst it sits there with the lid securely on.
The same goes for items such as gas cylinders, radioactive substances or 'biological' agents when they are stored or being used correctly.

This leaflet is to explain some **do's** and **don'ts** about patrolling scientific departments within the University.

Important Signs

We are required by law to display the following hazard-warning signs, to indicate that biological or radioactive material might be present or work involving this material might be going on.

It **DOES NOT** mean you will get exposed to radiation or germs/viruses etc when you enter the room.

(*the* 'biological' *trefoil*)

(*the* 'radiation' *trefoil*)

However, if you see these signs on doors (the signs called trefoils) then these should be taken to mean:

'STOP- DO NOT ENTER'

There may be times when you will need to make a judgment as to whether you should enter these areas if there is a real emergency e.g. someone collapsed, being attacked, trespassing etc. It is extremely unlikely you will be putting yourself at risk from radiation, chemicals or biological hazards. However, during normal patrolling, you should not enter these areas.

But you **MUST NEVER** enter a room that displays the following signage, even if you see that a person is lying unconscious in the room, in case there has been an accidental release of biologically hazardous material.

You may find that the signage varies slightly from this, but the important point is that the room is designated as **CONTAINMENT LEVEL 3,** and as such, **access is restricted to authorized personnel ONLY**.

In the unlikely event that you see someone in a Containment Level 3 laboratory who is unconscious, you **must follow your standard emergency protocol for calling your supervisor and the emergency services……..**

DO NOT ENTER THE ROOM

Gases

Gases are used throughout the University. The main categories are:

a. **Flammable gases** (such as natural/domestic gas, propane, butane, hydrogen etc).
Although Oxygen is not flammable itself, it can make things burn explosively.

b. **Asphyxiant gases** (such as nitrogen, helium). Although these gases aren't toxic or poisonous, they reduce the amount of oxygen available for breathing.

c. **Poisonous/Toxic gases** (e.g. carbon dioxide > 5% or carbon monoxide!). These can have serious effects on your health if you are exposed to them.

d. **Cryogens** (i.e. liquid nitrogen, solid CO_2 (dry ice), liquid helium and oxygen). These are kept at very low temperatures and can cause cold burns/frostbite if they come into contact with the skin. They are also often asphyxiants (see above), as a small amount of the liquid or solid evaporates to create a very large amount of gas **(1 litre liquid can typically produce ~700 litres of gas)**.

Under normal operating circumstances and use, all the gases listed above pose no risk to your health and safety.

THE MAIN PROBLEM WOULD BE IF THERE WERE A SIGNIFICANT LEAK.

Gas Leaks

Listed below are simple signs to look out for which indicate that there is a gas leak.

Clues that there may be a gas leak include:

a. Loud and/or persistent hissing noise which is particularly noticeable if nobody is around and using gases for a procedure

b. A strange smell, however many gases have no smell !!

c. A temperature drop, particularly near cryogenic containers (Dewars) and a white mist at ground level (nitrogen) or high level (Helium).

N.B. Under normal circumstances Dewars always vent slowly to atmosphere, which may make a low hissing noise, and perhaps releasing a very small amount of mist that quickly disappears

It is only if the venting is excessive, noisy, producing lots of mist, particularly if there is nobody around that there maybe a problem

If you do notice or discover any of the above, **DO NOT** attempt to solve the problem yourself – leave the area immediately, **retracing your steps, and notify your supervisor.**

NEVER enter an area where either your hand held personal oxygen monitor, or the inbuilt oxygen level sensor is sounding an alarm, even if there are people present in that area – raise the alarm, evacuate the area, and contact your supervisor.

Key points

Laboratories are specialized work areas, which contain unfamiliar items and pieces of equipment. Following the guidance in this leaflet will help you to minimize some of the specific risks associated with patrolling laboratories.

Do not touch or attempt to clear up any apparent chemical spillage - report to a supervisor.

- Do not touch anything you are not familiar with
- Do not touch any laboratory work surfaces or apparatus
- Always observe 'warning' signs
- Wear your oxygen monitor at all times when patrolling scientific departments

If you require any help or advice on issues raised in this leaflet, or have concerns about things you have seen in laboratories, then please contact:

Mr John Hulme
Chemical/Physical Safety Adviser
Tel: 66353

Ms Lisabeth Yates
Radiation Protection Officer
Tel: 66354

Dr Martin Vinnell
Director of Health and Safety
Tel: 39512

Safety Office
Greenwich House
Madingley Road
Cambridge
CB3 0TX
Phone: 01223 333301
Fax: 01223 330256
Email: safety@admin.cam.ac.uk
www.safety.admin.cam.ac.uk/