

1. OBJECTIVE

Guidance on Air Monitoring at RMIT

2. PROCEDURE

2.1. Introduction

Effective risk management should begin at the earliest opportunity during the planning, purchasing and development of work tasks phases. At this early stage there is the greatest chance of finding ways to eliminate or isolate hazards, incorporate effective risk control measures and consider design in engineering controls.

2.2. Risk Management

Health and Safety Regulations requires that no worker is to be exposed to a substance or mixture in an airborne concentration that exceeds the exposure standard for that substance or mixture. Refer to the **SafeWork Australia** publication: **Workplace Exposure Standards for Airborne Contaminants**

The Regulations also require that air monitoring be carried out:

- If it is not certain on reasonable grounds whether the exposure standard is being exceeded or not, or
- If it is necessary to determine whether there is a risk to health

Following a risk management approach as outlined in **HR - HSW-PR09 HSW - Risk Management** Process, the completion of a risk assessment will identify the hazards present and the means by which they can be best controlled. This is the most effective method for identifying whether or not there exists a risk to staff member's health. For example, ways to minimise the risk of chemicals could include:

- Using smaller quantities
- Substituting the chemical with a lower hazard category chemical
- Using in diluted form
- Using in enclosed systems
- Using effective extractions system
- Training staff about the hazards and risks of the chemicals they use
- Using personal protective equipment (PPE) that is well maintained and fit for purpose

Such risk control measures are likely to keep the airborne concentration to well below the exposure standard. If these measures do not reduce the exposure to persons in the work and learning environment, air monitoring may be required. Air monitoring should be used to validate / supplement the risk assessment if and when any doubt remains as to whether the exposure standard has been exceeded.

Direct-reading instruments may be used to rapidly detect flammable or explosive atmospheres, oxygen deficiency, certain gases and vapours, and ionizing radiation. They are the primary tools of initial site characterisation. The information provided by direct-reading instruments can be used to institute appropriate protective measures (e.g. PPE, evacuation), to determine the most appropriate equipment for further monitoring, and to develop optimum sampling and analytical protocols. It is imperative that direct-reading instruments be operated, and their data interpreted, by qualified individuals who are thoroughly familiar with the particular device's operating principles and limitations and who have obtained the device's latest operating instructions and calibration curves.

2.3. Air Monitoring

When air-monitoring has been identified as required due to potential exposure of hazardous material to staff, please contact your Senior Advisor, Health and Safety for advice on the measures to be taken.

An occupational hygienist or suitably qualified person/professional should be engaged if more specialised monitoring is required.

For airborne contaminants, air monitoring involves the sampling of workplace atmospheres to establish a quantitative measure of exposure to hazardous substances through inhalation. The result is then compared to the Workplace Exposure Standard for Airborne Contaminants to assess if the exposure is above the recommended threshold. Where measurements are above 50% of the workplace exposure standard refer to senior adviser for further advice.

Gas monitoring may also be required if the potential for a hazardous atmosphere could exist for example if;

- Oxygen levels could fall to unsafe levels (e.g. because of an asphyxiate gas leak)
- An Oxygen leak could increase the risk of a fire
- The concentration of a flammable gas (or vapour, mist or fume) exceeds 5% of the Lower Exposure Limit (LEL) for that gas
- Combustible dust is present in a form and quantity that could ignite

In Australia, it may be a requirement that air monitoring be accredited by the National Association of Testing Authorities, Australia (NATA). It is expected that on international campuses, air monitoring is accredited by the local equivalent.