



Mines Safety Bulletin No. 158

Subject: Inspection, testing, maintenance and use of fume cupboards

Date: 18 January 2019

Background

Fume cupboards provide local exhaust ventilation (LEV) to reduce workers' exposure to airborne contaminants such as hazardous fumes, gases and dusts. When installed and used correctly, contaminants within a fume cupboard are captured at their source and are extracted away from workers.

Recent inspections by the Department identified deficiencies in the inspection, testing, maintenance and use of fume cupboards, including:

- equipment that has not been inspected, tested and/or maintained in accordance with AS/NZS 2243.8:2014 Safety in laboratories – Fume cupboards
- equipment that does not work efficiently to capture airborne substances including gases, vapours, aerosols or particulate matter
- the absence of a documented system for the regular maintenance of equipment.

Summary of hazard

Ineffective ventilation may expose workers to chemical fumes, vapours, gases or dusts.

Exposure to these contaminants may lead to worker illness or disease.

Contributory factors

- Failure to verify that engineering controls are effective; that is, that the fume cupboard is performing as designed, or provides minimum flow rates.
- Lack of a systematic inspection, testing and maintenance program for fume cupboards.
- Failure to address or rectify deficiencies identified through inspection and testing processes.
- Incorrect storage of items within or adjacent to the fume cupboard that impact the operability of the unit.
- Safe work practices that do not instruct workers to check that the fume cupboard is fit for use before undertaking tasks
- Poor quality or absence of training for workers on how to operate the fume cupboard effectively, particularly training on how to position the sash when using the equipment.

Actions required

The following actions are recommended to assist in maintaining contaminant levels below exposure standards and as low as practicable:

- Develop and implement a documented system that ensures fume cupboards are regularly inspected, tested and maintained in line with AS/NZS 2243.8:2014 Safety in laboratories – Fume cupboards.
- Include fume cupboard inspections in routine workplace inspections. This may involve
 - checking the inspection/test label to make sure the fume cupboard passed its last test and to make sure the test was performed no more than 12 months ago
 - checking the system can be turned on
 - checking the fume cupboard is clean and is not being used to store large volumes of chemicals or other items
 - checking for visible signs of damage.
- Provide an easy way for workers to identify whether fume cupboards are operating effectively; for example, using a fume cupboard fitted with an airflow indicator.
- If the fume cupboard is found not to be operating properly, immediately isolate the unit and follow normal site procedures to correct the fault. Following any repairs, the fume cupboard should be tested to confirm it is working properly.
- Keep records of inspections, testing and maintenance in the mine's ventilation logbook.
- Implement actions to verify that controls are working as intended, such as:
 - personal exposure monitoring of workers
 - health surveillance where accepted methods exist
 - task observations.

Further information

- Safe Work Australia, *Managing risks of hazardous chemicals in the workplace – Code of Practice*
www.safeworkaustralia.gov.au/system/files/documents/1702/managing_risks_of_hazardous_c
- Health and Safety Executive, *COSHH essentials G201 – Fume cupboards*
www.coshh-essentials.org.uk/assets/live/g201.pdf
- Health and Safety Executive, *Clearing the air – A simple guide to buying and using local exhaust ventilation (LEV)*
www.hse.gov.uk/pubns/indg408.pdf

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