

Hazard Reduction

For laboratory chemicals, all of the following options should be routinely employed. Stocks of chemicals should be kept to a working minimum both in the individual lab and in the School. For a particular task, the least hazardous chemical that will do the technical job should be chosen. That chemical should be in an appropriate container. Fume cupboards are used to contain emissions and can also act to provide useful dilution ventilation for the lab.

Consider all methods of hazard reduction when undertaking any work, including:-

Engineering Controls

Elimination - of the technique/process/chemical.

Substitution - of the material or technique. eg. replacing benzene with toluene as a solvent.

Segregation/isolation - of people from the process. eg using automation or remote handling techniques when using radioisotopes.

Process Control - by using pellet material/liquid (rather than powder), master batching, pre-packaging etc.

Enclosure - of the process

Ventilation - of the workplace and of the source, eg use a fume cupboard (not laminar flow)

Administrative Controls

These methods are less satisfactory than engineering controls as they are more dependent on individual users acting with knowledge and responsibility.

Personal Protection - The use of PPE is an integral part of reducing the safety hazard risk.

See p Error! Bookmark not defined. However, PPE should not be seen as a solution to reducing the hazards of an experiment. More it is there as a backup in case the other controls fail. All the other practical engineering solutions

(listed above) should be implemented (or considered) first. Safety glasses must be worn in all laboratories and workshops under the ANU policy.

Maintenance - of plant for optimal performance

Restriction - of exposure, by limiting/controlling the number of employees, hours worked, loads, rest periods, job rotation, overtime

Work Practices - changes in methodology or technique can reduce exposures.

Education and Involvement of the Workers

Work Environment

Supervision