

Chemical Management Workshop Presentation – Rae McKean

The need for a chemical inventory:

The main reason for this inventory is to comply with safety regulations. In the event of a fire, a full list of all chemicals on site and their location is critical to minimising damage to an area of the school where chemicals are stored. The Health and Safety in Employment Act 1992 was designed to promote sound management practices in relation to health and safety in the workplace. *The Health & Safety in Employment Regulations 1995* set out the standards to be achieved for health & safety in schools. Compliance with all aspects of the *Health & Safety Code of Practice for state primary, composite and secondary schools* is binding on such schools. The obligation is on the Board of Trustees as your employer, to ensure the health & safety of employees and students.

This code of practice is found at: www.minedu.govt.nz/Property/Health/Safety

Building the inventory:

There are a number of ways to develop your chemical inventory, use whatever suits your particular needs. Some technicians record the chemicals room by room, each with an individual spreadsheet, others record all the information on one spreadsheet with separate columns across the top for each room. Categorising also varies depending on how your chemicals are stored. Many schools use a straight alphabetical system.

Others prefer to have their chemicals recorded in Zones that match the way their chemicals are stored. Remember to date the inventory.

- Cross reference any chemicals that are known by more than one name.
- Include the chemical's formula beside the written name.
- It is also useful to note if it is in powder, crystal or liquid form.
- Expiry dates should be noted on the actual container .
- Date of purchase can be useful to record – helps in management of planning for budget purposes.
- Chemicals cannot be stored indefinitely, so a date for disposing of the chemical should be allocated if it is no longer required.
- A visual inspection can often indicate that a chemical is past it's use-by date e.g. cloudiness in liquids, colour change, solids that have gained spots, damaged containers.

Access of information:

Always remember that a hard , printed copy of this register should be stored off site as well as in at least 2 other locations around the school in the event of a fire. It is vital that the appropriate people know where to access this information very quickly as the fire department needs to know what potentially dangerous chemicals the school is storing to try & reduce as much damage as possible.

Hazard warning symbols should be placed in strategic places so that the fire service knows very quickly where potential hot spots are likely to be.

It is a good idea to include a column on your spreadsheet indicating if you have a MSDS sheet that goes with your chemical you have in stock. It will also act as a reminder to ask for one next time you order a chemical if you don't have one relevant to that chemical. **MSDS** should also be readily accessible- an alphabetical ring binder should be accessible to all laboratories in event of an accident.

Time can be critical in an accident and whilst it is useful to have this information stored on a computer, the information needs to be very quickly accessed in an emergency.

Storage of chemicals:

All chemicals should be stored according to their compatibility.

The key rules are as follows:

1. Store acids separate from bases
2. Keep oxidising agents separate from reducing agents
3. Keep active metals separate from oxidising agents
4. Store volatile solvents separate from oxidising agents
5. Keep conc. acetic, nitric and sulfuric acids separate from each other.

Zoning ideas:

- Concentrated acids
- Oxidising agents
- Bases
- Organic Solvents
- Water reactives
- General dry lab. Chemicals
- Gas cylinders

Many schools suffer from a major lack of space-safety cabinets can provide some protection in the segregation of chemicals. The "Safety in Science" book distributed by the Ministry of Education to all schools throughout New Zealand gives some good guidelines as to how to safely store chemicals. A phone call to your local council or OSH office may be of use- their assistance and knowledge varies throughout the country. It can be worthwhile to persevere to make contact with the dangerous goods inspector and draw on their knowledge. However, make sure your HOD is aware of what you are doing, it is far better to have their support in such issues as you may need to gain the support of your BOT at a later date to obtain funding to make some improvements to gain a safer workplace.

Rae McKean
Workshop Presenter