



ASSIST

AUSTRALIAN SCHOOL SCIENCE
INFORMATION SUPPORT FOR
TEACHERS AND TECHNICIANS

Published on ASSIST (<https://assist.asta.edu.au>)

[Home](#) > Chemical stores legislations and requirements

Chemical stores legislations and requirements

Posted by Anonymous on Fri, 2015-04-24 12:38

Chemical stores legislations and requirements: Hi fellow technicians.

Can anyone please let me know where to find up-to-date regulations for chemical stores setups/designs in schools?

Our school is looking into refurbishing our very old chemical store and I would like to know what are the current legal requirements for a new store.

I really appreciate your help.

Voting:



No votes yet

Year Level:

Senior Secondary

Laboratory Technicians:

Laboratory Technicians

Showing 1-2 of 2 Responses

Chemical stores legislations and requirements

Submitted by sat on 13 May 2015

Introduction:

Thank you Mario for this excellent question. This is a very big and important matter in supporting the good teaching of school science. The Science ASSIST team recognises the importance of this, and one of our major projects in the coming year will be to establish consistent recommended standards for the design of school science teaching areas, including the chemical storage area to which you particularly refer.

As this work is not yet done, we will attempt to summarise here many of the key points that we expect will form part of the final larger response.

Background summary:

There is no one single reference that provides all the information required to address this issue. Some requirements are set by regulation, such as those in the various building codes and relevant Australian/ New Zealand Standards. These are of a general application and are not specific to, but include, school science areas. Others apply to science chemical storage and laboratory areas, again without specific application to school science teaching areas. Other recommendations arise from consideration of good practice based on past experience, a knowledge of the nature of school science teaching and risk assessment processes. Any proposed design would then be a combination of regulated requirements and best practice considerations. It is the Science ASSIST team's view that there is much room for greater national agreement and consistency in addressing these issues, hence the current Science ASSIST project.

At present, when it comes to the construction of new or upgraded science teaching areas, various educational jurisdictions around Australia have policies that have both similarities and differences in addressing the perceived requirements. We are able to share some of these with you. We also recognise that there are many facilities of earlier construction that would not meet current standards and which should be upgraded as a matter of priority.

Basic features of a school science chemical storeroom.

In a secondary school setting, the storage of chemicals must be facilitated as follows:

- **A dedicated chemical storeroom** (sometimes referred to as a “chemical bunker”) is a dedicated storeroom just for chemicals, which is not to be a shared space with other functions such as computer workstations, desks, or office space. Chemicals should not be stored in an area which is also a workstation for staff such as school science technicians and teachers.
- **Access, egress and security:** A chemical storeroom will commonly have just one door. This must be locked to prevent unauthorised access. The door must open outwards, and must be able to be opened from inside without the use of a key. See also a previous question: [number of exit doors in labs and prep rooms](#).
- **Services and ignition sources:** If flammable liquids are stored, the chemical storeroom must be fitted with spark-proof lighting with the switch located outside the room. There should be no electrical fittings such as power points located within the room, as these constitute ignition sources. There must be no ignition source within 3 metres, measured

laterally, of stored flammable liquids. (AS 1940.2004; section 4.9.7).

- **Ventilation:** Chemical storerooms should be fitted with powered extractive ventilation. This can be achieved with an air inlet grille in or adjacent to the door, and the exhaust vent situated near floor level at the opposite end of the room. The system shall have a capacity of 0.3 cubic metres per minute for each square metre of floor space, or 5 cubic metres per minute, whichever is greater. (AS 1940.2004; section 4.5.5, AS/NZS 2243.10.2004; section 4.5.5). Suitable ventilation is effective in greatly reducing the incidences of chemical sensitivity and allergic responses suffered by school science technicians. See also a previous question which has information regarding ventilation: [Chemical Storage](#).
- **Suitable cupboards/shelving:** These must be compatible with the chemicals stored. Corrosion resistant laminate is commonly used. Particle board or similar is not recommended. (AS/NZS 2243.10.2004; sections 3.4 and 4.5.2).
- **Suitable size:** The chemical storeroom must be large enough for the planned purpose, and to include adequate storage facilities for both the quantity and range of the substances to be stored.
- **Segregation of incompatible chemicals:** The chemical storeroom must allow for the appropriate segregation and storage of incompatible chemical classes, so that in the event of an accidental spillage, the opportunity for incompatible chemicals to mix and react is eliminated. Though recognising the new GHS chemical classification system, existing practice is based on the Australian Dangerous Goods Code classes as given below:

This will usually require the segregation of the following chemical classes:

- Class 2: Flammable Gases
- Class 3: Flammable Liquids
- Class 4.1 Flammable Solids
- Class 4.2 Spontaneously Combustibles
- Class 4.3 Dangerous When Wet
- Class 5 Oxidising agents
- Class 8 Corrosives

Segregation in different jurisdictions:

This segregation is currently achieved in different jurisdictions and sites in two different ways, or by a combination of these. In some states, such as South Australia, segregation of incompatible chemical classes is by way of dedicated storage units for Flammables (Classes 3, 4.1, 4.3), Spontaneously Combustibles (Class 4.2), Oxidisers (Class 5), and Corrosives (Class 8), with the latter including further segregation of incompatibles such as acids and alkalis. In other states, such as Western Australia, segregation is commonly achieved through “vertical segregation”, with measures to ensure that incompatible classes are well separated, and that no chemical is stored above any incompatible substance. It is noted that, for the purposes of storage and segregation and because of the relatively small quantities involved, school science chemical storage areas will normally be classified as “minor storage”. The greater segregation distances that apply to large stored quantities would not apply to schools.

Science ASSIST will be seeking specialist advice regarding best practice for the segregation

of school science chemicals, and we anticipate this to be available later in 2015. Below we provide some links to some state jurisdictional guidance materials, which contain good general advice for chemical storage in schools.

References

ASTA Science ASSIST. 2015. [number of exit doors in labs and prep rooms](#)

ASTA Science ASSIST. 2015. [Chemical Storage](#)

Queensland Department of Education, Training and Employment 'Guideline for Managing Risks with Chemicals in DETE Workplaces' November 2013, Queensland Department of Education, Training and Employment website
<https://education.qld.gov.au/curriculum/ Documents/guideline-managing-ch...>

Queensland Department of Education, Training and Employment 'Health & Safety Fact Sheet: Science Laboratory & Preparation Area Safety' September 2013, Queensland Department of Education, Training and Employment website
<https://education.qld.gov.au/initiativesstrategies/Documents/fact-sheet-science-laboratory-preparation-area-safety.pdf> (Link update July 2019)

South Australian Department for Education and Child Development 'Hazardous Chemicals Procedure' December 2013, South Australian Department for Education and Child Development website <https://myintranet.learnlink.sa.edu.au/library/document-library/procedur...> (login required)

Standards Australia. 2004. AS/NZS 2243.10:2004 *Safety in laboratories Part 10: Storage of chemicals*. Sydney, Australia.

Standards Australia. 2004. AS 1940—2004 *The storage and handling of flammable and combustible liquids*. Sydney, Australia.

Victorian Department of Education & Early Childhood 'Guidance Sheet 1, Chemical Storage' Victorian Department of Education & Early Childhood Development website (Accessed May 2015) <http://www.education.vic.gov.au/Documents/school/principals/management/g...> (Link updated: October 2017)

Victorian Department of Education & Early Childhood Development. 'Guidance Sheet 2, Dangerous Goods Classification System' Victorian Department of Education & Early Childhood Development website
<http://www.education.vic.gov.au/Documents/school/principals/management/g...> (Link updated: October 2017)

Chemical stores legislations and requirements

Submitted by Mario6806 on 13 May 2015

Many thanks to Peter and the Science ASSIST team for such a detailed reply. It will definitely help with our current project designs for our chemical store.

Source URL: <https://assist.asta.edu.au/question/2786/chemical-stores-legislations-and-requirements>