

# Prohibited and high risk chemicals in department workplaces

A number of chemicals are banned from purchase and use in Department of Education (department) workplaces because of their inherent risks to staff, students and others. The prohibited chemicals are listed by occupation or student groups in department facilities below.

## Prohibited – All department staff

- [Asbestos-containing materials](#)
- [CCA treated timber](#)

## Prohibited – All department staff and students

- Potassium chlorate (potentially explosive)
- Benzene
- Carbon tetrachloride
- Known carcinogens and restricted hazardous chemicals listed in *Work Health and Safety (WHS) Regulation 2011 (Qld)*, [Schedule 10](#).
- The use of *WHS Regulation 2011 (Qld)*, [Schedule 14](#) substances in a way that requires health monitoring

## Prohibited – All department campuses with years K - 6 students

All state school campuses where kindergarten to year 6 students attend are prohibited from purchasing and using schedule 7 poisons\* under the [Medicines and Poisons \(Poisons and Prohibited Substances\) Regulation 2021](#).

## Prohibited – Schools Officers in department schools

The following chemicals have been prohibited for use by schools officers in department schools for pest management. There are alternative, effective and less hazardous substances that can be used as herbicides and pesticides which pose lesser health and environmental risks and do not necessitate health monitoring as required by the [WHS Regulation 2011](#).

- Schedule 6 poisons\*
- Schedule 7 poisons\*
- Organophosphate pesticides (e.g. Chlorpyrifos, Malathion)
- Creosote
- 2,4-D based herbicides

Refer to the product SDS (section 3) to identify organophosphate and 2,4-D ingredients and SDS sections 2 and/or 15 to identify the poison schedule before purchasing herbicides, pesticides, insecticides and fungicides. This information can also be found on the product label.

Schools officers are permitted to use S6 and S7 poisons (such as pool chemicals) as long as they are not prescribed for use as pesticides, insecticides, fungicides, algicides OR herbicides.



\*Poisons are categorised into schedules - the higher the number of the schedule, the higher risk of harm to humans. **Schedule 6** (S6) poisons have distinctive packaging and have a clear warning of POISON along with safety directions on the product label. These substances must be kept out of reach of children. These poisons have potential for causing harm to humans.

\***Schedule 7** (S7) poisons are substances that have a high potential for causing harm to humans and includes strychnine, cyanide and hazardous laboratory reagents, agricultural and veterinary chemicals. They have a clear warning of DANGEROUS POISON on the label. These substances must also be kept out of reach of children. S7 poisons are listed in the [Standard for the Uniform Scheduling of Medicines and Poisons \(SUSMP\)](#)

## Prohibited – Cleaners in all department schools

School cleaners must only use chemicals listed on the mandatory [standing offer arrangement](#) (SOA) provided by the department. Household cleaning products are not permitted.

- Bleach (this includes all derivatives of bleach products and all brands) is not permitted for everyday general cleaning purposes.

Note: a specified bleach product from the SOA may be used when specifically directed by a supervisor for infection control cleaning or mould removal.

If an employee has a requirement to purchase a chemical that is not on the SOA list or already approved for use, the employee must obtain approval from their principal/manager or their delegate. Use the [chemical pre-purchase risk assessment](#) to seek approval.

## High risk substances with uncertain or unpredictable risk levels

A number of other chemical substances pose potentially major health and physical risks. Department workplaces are to consider very carefully whether the curriculum/industry relevance of experiments, demonstrations, cleaning, maintenance and/or agricultural/horticultural activities involving these substances is sufficient to warrant the risk of use. In such cases, minimum quantities should be obtained, stored and used. Such substances include but are not limited to:

- heavy metals and the salts of heavy metals
- very strong oxidising (e.g. nitric acid, nitrates), reducing (chlorides) and toxic agents
- caustic/corrosive (very strong acids, hydroxides) chemicals
- extremely flammable or volatile, explosive, carcinogenic and halogenic chemicals
- substances subject to hazardous decomposition
- environmental toxins (e.g. agricultural chemicals)
- substances and materials that may be diverted for [illicit drug manufacture](#) and security sensitive chemicals ([SSANs](#))

While not a comprehensive listing, specific examples of these substances are listed in Table 1 below.

The potential risk posed by chemicals are to always be considered through a documented risk management process before they are introduced into the workplace.

**Table 1: High risk substances with uncertain or unpredictable risk levels**

These chemicals present an unpredictable or uncertain risk in relation to worker health and safety, safe storage and handling in department workplaces, or may be considered too dangerous for use by students and inexperienced personnel. They must be stored and handled according to the information provided in the safety data sheet and only used by very experienced and competent workers. It is recommended that these substances are eliminated from the workplace by substituting with less reactive, less toxic and more stable compounds. This list is by no means exhaustive. However, it does cover some of the more common chemicals used.

All chemical users are reminded that the risks associated with chemical use in department workplaces must be assessed to ensure that chemical risks do not outweigh the occupational and/or educational benefit or outcome for an activity.

Chemical	Characteristics
Acrylonitrile	Restricted carcinogen. Any use requires permission for use by the Regulator ( <i>WHS Reg 2011 S380-384, Schedule 10</i> ).
Alkaline metals - Potassium, sodium, calcium, lithium	React violently with water to form hydrogen which ignites or explodes. Highly flammable.
Ammonium chlorate	Violently explosive.
Ammonium perchlorate	Violently explosive, highly reactive.
Aniline, phenylamine	Extremely toxic, carcinogenic.
Arsenic compounds	Extremely toxic, carcinogenic.
Beryllium salts	Highly toxic and carcinogenic.
Bromine	Highly corrosive, oxidiser, volatile liquid, poison fumes.
Carbon disulphide	Very low flash point, extremely flammable, highly volatile, very toxic. Use for spray painting requires permission from the Regulator ( <i>WHS Reg 2011 S380-384, Schedule 10</i> ).
Cadmium compounds	Highly toxic heavy metal, carcinogen, some compounds are very strong oxidisers.
Chlorates (all)	Dangerous explosion risk. Explosive mixtures easily formed.
Chromic acid, chromium (VI) oxide, chromium trioxide, chromic anhydride, Red zinc chromate, inorganic chromates and dichromates	Highly toxic and corrosive, poison. Hexavalent compounds are known to be carcinogenic. Powerful oxidizers.
Cyanide containing compounds	Extremely poisonous, with acids forms toxic and poisonous hydrogen cyanide gas.
Diethyl ether	Low flash point, extremely flammable, peroxide former (explosion risk).
Ethylene Dichloride	May cause cancer, low flash point, extremely flammable, may form explosive compounds.
Ethylene Oxide	May cause cancer, low flash point, extremely flammable, extremely toxic.
Epoxy Resins (Uncured)	Toxic, respiratory and skin sensitiser, possibly carcinogenic.
Ethylene dibromide	Restricted carcinogen. When used as a fumigant or genuine research or analysis requires permission for use by the Regulator <i>WHS Reg 2011 s380-384, Schedule 10</i> . Residues may be found in wood dust.

Chemical	Characteristics
Fluoride compounds	Can evolve hydrofluoric acid if acidified, all are highly toxic and poisonous.
Formaldehyde	Toxic, carcinogen, severe sensitiser, skin irritant.
Gun wash (liquid hydrocarbons)	Highly flammable, possibly carcinogenic, toxic
Halogenated solvents (e.g. carbon tetrachloride, chloroform, trichloromethane, trichloroethane)	Extremely toxic and suspected carcinogens, bio accumulative pollutants.
Hardite	Extremely toxic, carcinogenic.
Hydrofluoric acid	Extremely toxic. Very dangerous.
Inorganic lead and lead compounds including, metal, acetates, carbonates, nitrate, sulphides, paints, and solders	Highly toxic, cumulative effects from prolonged exposure, poison, some lead products may cause cancer.
MEKP (methyl ethyl ketone peroxide)	Shock sensitive, special storage and use requirements. Experienced users only.
Mercury compounds	Highly toxic.
Methylene chloride	Possible carcinogen, highly toxic.
Methyl iodide	Extremely toxic, may form explosive compounds.
Millon's reagent (mercury + nitric acid)	Highly corrosive, highly poisonous.
Naphthalene compounds	Highly toxic, carcinogenic impurities.
Nickel and nickel compounds	Possible carcinogen, toxic, sensitiser.
<a href="#">PCBs</a> , polychlorinated biphenyls (Imports of PCBs to Australia have been banned since 1986.)	Moderately toxic, probably carcinogenic. Requires regulated disposal. Contained in electrical equipment (e.g. capacitors). If equipment was produced after 1979 or imported after 1986 then the equipment should be PCB-free.
Perchloric acid	Powerful oxidiser, highly corrosive, violently explosive mixtures with combustible materials and metals.
Phosphorus, white, white phosphorus, yellow phosphorus, red phosphorous	Extremely toxic- emits poisonous gas which can be fatal, ignites spontaneously in air, extreme fire hazard.
Picric acid	Explosive when dry and compacted or in contact with metals.
Potassium cyanide	Extremely poisonous. Releases poison gas when even slightly acidified.
Sodium amide, sodamide	Highly toxic, flammable, reacts violently with water.
Sodium azide	Extremely toxic, poison, explosive reaction with metals.
Sodium dithionite	Toxic by ingestion and inhalation. Allergen. Powerful reducing agent.
Sulphur dioxide (gas generator or gas cylinder)	Poison gas at high levels. Corrosive irritant to eyes and skin.
Toluene	Highly flammable, highly toxic, possible carcinogen.
Tolidine	Highly toxic, carcinogen.
Trichloroethylene	Highly toxic, carcinogen, may form explosive compounds.
Vinyl Chloride	Restricted carcinogen. Any use requires permission for use by the Regulator <i>WHS Reg 2011 S380-384, Schedule 10</i> .
Xylene	Toxic.
Zinc Chloride	Corrosive, toxic.