



Health & Safety

for Schools Officers

Chemicals & Dangerous Goods

- Safe use & handling of fuels and gas cylinders
- Storage of dangerous goods
- Line marking of sports fields
- Sample risk assessment of a hazardous substance
- Risk assessment form



SAMPLE RISK ASSESSMENT FOR HAZARDOUS SUBSTANCES

Hazardous Substance	Hazard Information	Task	Exposure	Existing Control Measures	Conclusion about Risks	Possible Control Measures	Action to be taken	Training
ABC Graffiti Remover	<p>Can cause burns if comes into contact with skin</p> <p>Can cause burns if splashed in eyes</p> <p>Can cause respiratory problems if inhaled in large quantities - vapours have the potential to cause drowsiness and dizziness</p>	<p>Poured from bottle onto rag and applied to wall - normally used on exterior walls of buildings</p>	<p>Exposure is continuous when using product</p> <p>Use on average is once per week</p> <p>Work conducted before school, only Schools Officer exposed</p> <p>Possible Exposure routes:</p> <p>Skin</p> <p>Eye</p> <p>Inhalation</p> <p>Ingestion/swallowed</p>	<p>Latex gloves</p> <p>Nil</p> <p>Nil</p> <p>Nil</p>	<p>Risk significant and not adequately controlled</p> <p>Significant</p> <p>Significant when used in poorly ventilated areas</p> <p>Risk is low (considering it is stored in locked cupboard and only used by Schools Officer, who is the keyholder)</p>	<p>Substitute haz sub with another non hazardous product if available</p> <p>Perform work in well ventilated area</p>	<p>Mr Smith to ensure adequate PPE is purchased and maintained according to manufacturer's instructions</p> <p>Provide chemical resistant gloves as stated in MSDS i.e. neoprene, nitrile or PVC</p> <p>Provide safety glasses with side shields</p> <p>Wear half-face disposable respirator if using large quantities or if performing task for many hours or if using in a poorly ventilated area - ensure good ventilation if using indoors i.e. windows open, ceiling fans on etc</p> <p>Nil</p>	<p>Staff have not been trained in hazards and precautions that should be taken when using this product</p> <p>Mr Smith to ensure training for all staff using this product</p> <p>Evac. proc and fire drills up to date, managed by WHSO and Registrar, First Aid managed by Teacher-aid Admin.</p>

Recommendations: risk is significant but can be controlled by using product in a well ventilated area and using eye protection. Mr Smith to ensure adequate PPE is purchased and maintained according to manufacturer's instructions. Mr Smith to ensure training for all staff using this product. **Approved by:** John Mild (Pr) **Date:** 12/06/07

GUIDE TO RISK ASSESSMENT FOR HAZARDOUS SUBSTANCES

⇒ You need to assess every product that is brought onto school grounds

Date:

Risk Assessment Team: i.e. WHSO, HOD, Teacher-aide etc

Job undertaken: e.g. cleaning paint brushes with turps, putting chlorine in pool, removing graffiti off walls, using power tools that produce dust

Work areas: location in school where the task is conducted

Person (s) exposed to substance: e.g. Schools Officer, Scientific Lab Assistant, all persons in vicinity of work being performed, all Home Economics teachers

Summary of Process: e.g. cleaning graffiti off walls

Hazardous Substance	Hazard Information from MSDS	Task Description of Use	Exposure What degree of exposure is expected	Existing Control Measures	Conclusion about Risks Are there risks still present?	Possible Control Measures	Action to be taken	Training
Name of product	☠ How dangerous is the product, how can it harm you? i.e. irritating to eyes, inhalation may produce health damage	☠ Is the person working directly with the haz sub i.e. turps to clean paint brushes ☠ Is the haz sub a by-product of another process i.e. wood dust generated from manual arts work	☠ Does exposure occur intermittently or continuously and ☠ How frequently does exposure occur? i.e. daily or monthly? ☠ Who is exposed? one person i.e. science lab assistant, or people walking by work area i.e. chlorinating pool. ☠ What is the concentration of the product? ☠ What is the Exposure Route - how does the haz sub enter the body - inhalation, ingestion/ swallowing, skin or eye contact,	☠ What do you currently have in place to control the risk?	☠ Is the risk still significant? Does the information stated on the MSDS indicate that when using this product in this way for this task there is the potential for damage to the workers or others health?	☠ Substitute haz sub with another product i.e. use water based paint instead of solvent based paint ☠ Isolate area by cordoning off work ☠ Perform task out of student hours ☠ Perform work in well ventilated area ☠ PPE - list the type to be worn i.e. nitrile gloves	☠ Who is ensuring controls are being implemented? ☠ Is PPE being correctly used when required? ☠ Who is responsible for reviewing controls?	☠ Have staff been trained in hazards and precautions that should be taken when using this product? ☠ Are workers trained in the proper use and maintenance of control measures? i.e. is PPE readily available, is it clean and functional, is it being appropriately maintained? ☠ Are emergency procedures and first aid facilities up to date? i.e. evacuation procedure, fire drill, location of first aid kits etc

* Risk must be reassessed every five years OR if there is any change in the process or work method

Approved by: WHSO and/or Principal

Signature:

Date:

Recommendations:

RISK ASSESSMENT FOR HAZARDOUS SUBSTANCES

Date:
Job undertaken:
Work areas:
Person (s) exposed to substance:
Summary of Process:

Risk Assessment Team:

Hazardous Substance	Hazard Information (taken from MSDS)	Task (Description of Use)	Exposure (What degree of exposure is expected) Concentration x time	Existing Control Measures	Conclusion about Risks	Possible Control Measures	Action to be taken	Training

Risk must be reassessed every five years OR if there is any change in the process or work method

Approved by:

Signature:

Date:

Recommendations:

HAZARDOUS SUBSTANCES REGISTER

NB: Where the product is identified as a hazardous substance, an MSDS and a completed risk assessment must be kept in your register

No.	Product Name	Quantity Stored	Storage Location	Location of MSDS	Risk Assessment Register Number	Date for Next Assessment (no later than 5 years from last assessment)	Controls in Place	Priority Level for Risk Assess. (optional)
1	<i>(example) Weed-b-Gone</i>	<i>5 Litres</i>	<i>J/G shed</i>	<i>J/G shed</i>	<i>1</i>	<i>20/07/2000</i>	<i>Personal protective equipment, good hygiene practices, stored in locked chemical cabinet.</i>	<i>2</i>
2								
3								
4								
5								
6								
7								

Safe Storage and Handling of Lawn Mower Fuel

Engine fuel is highly flammable and can be dangerous for the users of machinery. The associated risks can be reduced through the safe storage and handling of fuels e.g. lawn mower fuels and containers. The following precautions should be followed to minimise the chance of fuel fires and operator injuries.

Storage of Lawn Mower Fuel

- Flammable liquids must be stored in suitable containers.
 - Metal containers are suitable, providing they are of good quality and well sealed and suitably labelled
 - The only suitable plastic containers are those specifically marketed for the purpose of fuel storage. These will be embossed with a marking indicating that they comply with the requirements of **AS/NSZ 2906:2001- Fuel containers, portable, plastic and metal.*
- All containers must be clearly labelled as containing flammable liquids.
- Food and drink containers, or glass containers, must *not* be used for the storage of fuels.
- Containers should be stored in a well-ventilated place, well clear of electrical equipment and other potential ignition sources.
- Mower fuels are not compatible with almost all other classes of dangerous goods. It is recommended that fuel is stored at least 5 metres from all other dangerous goods stored at the site.
- The volume of flammable liquids stored on site should not exceed 250 litres. Stored quantities in excess of this amount will require licensing as a 'Dangerous Goods Location' under the Queensland Dangerous Goods Safety Management Regulation and must be stored in accordance with the requirements of *AS1940:2004 - The Storage and Handling of Flammable and Combustible Liquids.*

**Australian Standard/ New Zealand Standard*

- The volume of individual containers storing fuel should not exceed 20 litres.
- Fuel storage containers should be contained within a storage area or room with ****bundling**.
*** bundling can be a tray or barrier designed to contain liquid spills eg. leaking fuel / chemical containers*

When handling fuel to fill a mower:

- Always refuel outdoors where it is well ventilated.
- Use a funnel when refuelling to minimise spillage.
- Do not smoke while refuelling or whenever handling the fuel.
- Add fuel before starting the engine. Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot.
- If fuel is spilled, do not attempt to start the engine. Be sure to move the machine away from the area of spillage and avoid creating any source of ignition until the fuel is evaporated and the vapour dispersed.
- Replace all fuel tank and fuel container caps securely.



Safe Storage and Handling of LPG Gas Cylinders

Storage of a LPG Gas Cylinder

- Keep the cylinder valves closed when not in use and fit and tighten the plug to the cylinder valve internal thread.
- Ensure that the cylinder is stored upright (vertical) at all times and is not at risk of tipping over.
- Inspect the cylinder on a regular basis to ensure it is in good condition, free from rust and housed properly.
- Ensure the cylinder is stored in an area that is adequately ventilated and not susceptible to excessive temperature rise.
- Store the cylinder in a secure location to protect against falling, damage, being hit by ride on mowers, vandalism etc
- Provide separate storage for LPG away from the oxidising gases (e.g. oxygen) by at least 3 metres.
- Use the cylinders only in well ventilated areas.

Do **NOT** store the cylinder in close proximity to an ignition source, or in locations that could jeopardise escape from the building in the event of a fire.

Before the cylinder is connected to an appliance, it is essential that you check:

- the LPG cylinder's date stamp is less than 10 years old. LPG cylinders must be re-tested every 10 years, and should not be used if the cylinder is "out-of-date".
- the LPG cylinder is in good condition, and must be free from damage and rust.
- the LPG cylinder valve is clean and in good condition.
- the hoses and appliance fittings are in good condition.

- Give special attention to the rubber o-rings and rubber parts used on LPG regulators, and replace these as required.

Suspected leaks can be checked by using soapy water; check cylinder, valve and connections to the appliance (e.g. barbeque, heater, camp light etc). Always rinse and dry the connection when the leak test is finished. **Never use a match or cigarette lighter.**

While using the cylinder, it is essential that you check:

- all LPG cylinders are kept outdoors, upright, away from sources of heat, whether in use, or spare.
- that the cylinder cannot be warmed by a barbeque, heater or other appliance
- the LPG cylinder valve is closed when the cylinder or appliance is not in use.

Do **NOT** use or store a cylinder inside a hot car

When finished, it is essential that you check:

- the cylinder valve is closed.
- the cylinder is stored safely, full or empty, away from sources of heat.
- dirt, spiders and insects do not get inside the valve outlet during storage. Plastic plugs are available to keep the valve outlet clean.
- the appliance is stored safely to avoid damage.

Note: Never store a cylinder upside down.

Line Marking of Sporting Fields

Most schools will need to perform line marking in grassed areas to demarcate playing areas and sporting fields for a range of activities. In the past, many schools have used sump oil or similar products as a cheap, durable and easy to apply line marking solution.

Schools should review their processes for line marking to ensure they are in line with recommendations made by the Environmental Protection Agency (EPA).

The EPA has released information that states “the use of waste oil [sump oil] for line marking on playing fields is discouraged and all reasonable and practicable measures should be used to find a more environmentally benign alternative.”

The EPA also advises that “environmentally benign alternatives to using waste oil for line marking include, but are not limited to:

- 1) organic-based water soluble paints;
- 2) water-based vegetable dyes;
- 3) chalk; and
- 4) glyphosate-based weed killers”.

When reviewing your procedures please be aware that it is an offence under the *Environmental Protection (Water) Policy 1997* (s 31) for a person to deposit or release oil, paint or herbicides in a place where it could reasonably be expected to be washed into a roadside gutter, stormwater drain or a [body of] water.

Companies specialising in line marking products and equipment can often assist with appropriate and durable alternatives dependent on field type and conditions.

The following table provides information about some commonly used line marking products;

PRODUCT	COMMENTS
Agricultural lime	“Calcite” may be used as a dry line marking material.
Calcite (Whiting, Calcium Carbonate, CaCO ₃)	These products are classified as Hazardous Substances and therefore Material Safety Data Sheets (MSDS) must be obtained and risk assessments completed.
Coloured Oxides; Use Iron (Red) or Zinc (White) Oxides only.	Note that the MSDS for oxides warn about eye damage and potential for oxides to mark the clothes of players. Classified Hazardous Substance; MSDS and risk assessment required
Water Based Plastic Paint	If the grass cover is good, remarking may not be necessary for up to 4 weeks. The addition of a wetting agent, i.e. white oil, will also assist in ensuring longer “life” of fluid.

Health & Safety Fact Sheet

<p>Vegetable Dye</p>	<p>These are completely harmless. Cost is the greatest deterrent. Players clothing can be subject to soiling upon contact.</p>
<p>Pressure Pack Spray Applications e.g. Berger, Mini Stripper, Speedy Stripper</p>	<p>This method utilises “safe” aerosol paint which proves very costly. The average quantity used to mark a football field varies but ranges from 2 to 3 cans per week based on the efficiency of the operator and the cutting of grass. It is estimated that initially at least 6 cans would be required to mark a rugby field. The advantages of this method are ease of application and no preparation or clean up is necessary.</p>
<p>Glyphosate-based Weed Killers ("Round-Up, Zero")</p>	<p>Frequent use of glyphosate-based weed killers to mark sporting fields may cause divots or depressions.</p> <p>Classified Hazardous Substance; MSDS and risk assessment required</p>
<p>Hydrated Lime (Slaked lime, Calcium Hydroxide, Ca[OH]₂)</p>	<p>Quick lime must not be used.</p> <p>Hydrated Lime in its dry form must not be used.</p> <p>Due to the alkali content of lime there are risks to the persons who have the responsibility of preparing and applying the mixture (even in wet form) and <u>extreme</u> care is necessary at all times.</p> <p>If Hydrated Lime is applied wet in the form of a spray rather than in its dry form, the chance of injury to players is reduced considerably.</p> <p>Classified Hazardous Substance; MSDS and risk assessment required</p>

Other resources:

Environmental Protection (Water) Policy 1997

<http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/E/EnvProWatePo97.pdf>

Used Oil – health and environmental impacts – Factsheet 3

Australian Government; Department of Environment and Water Resources

<http://www.oilrecycling.gov.au/pubs/factsheet-3.pdf>



Storage of Dangerous Goods

In accordance with current legislation, schools can keep up to the prescribed amounts of dangerous goods listed in the table below on the school premises before they are recognised as a “Dangerous Goods Location” – this classification requires specific, detailed legislative compliance that is extremely onerous for a school to undertake and upkeep - so keeping your levels below the specified amounts is important.

Are incompatible substances stored away from each other? e.g. herbicides stored away from insecticides and fungicides, petrol stored separately to pool chemicals

- ⇒ Refer to the MSDS for storage segregation requirements
- ⇒ Pool chemicals require special attention, they can be dangerous and under certain conditions may explode or cause fire
- ⇒ When handling pool chlorine, are you using clean, dry, impervious scoops (not wood) when transferring chemical? Bare hands must not be used.

Material	Prescribed quantity from Regulation – you must be under this amount
Unleaded petrol Lead replacement petrol Super, Premium	250L
Liquid pool chlorine Chlorine	1000L 50L
LPG cylinder (45kg)	500L
Diesel fuel	10 000L
Paints and lacquers	250L
Kerosene	1000kg or L
Methylated spirits	1000kg or L
Round Up	Not classified as a Dangerous Good
Mineral Turpentine	1000kg or L

Useful Contacts for Hazardous Substances and Dangerous Goods

- ⇒ Dangerous Goods Safety Service at CHEM Services **3247 8444**
(Chemical Hazards and Emergency Management Unit)
- ⇒ Workplace Health and Safety Queensland **1300 369 915**
- ⇒ Environmental Protection Agency (EPA) Waste Management **3225 1827**
- ⇒ Poisons Information **131126**
- ⇒ Contact your Regional Health and Safety Consultant if you require more information

Health & Safety Checklist

Chemical Safety for Schools Officers

Before you start work

- Have you chosen the right product for this job?**
 - ▶ Is there an alternative product that is less hazardous?
 - degreasing with a detergent instead of a chlorinated or volatile solvent or
 - using a combustible liquid (diesel) instead of a flammable liquid (petrol or kerosene)
- Have you read the current Material Safety Data Sheet (MSDS)?**
 - ▶ The MSDS must be no more than 5 years old.
- Has a risk assessment been conducted for the hazardous substance?**
 - ▶ Do you understand what needs to be done to use the product safely?
- Have you got the right Personal Protective Equipment (PPE)?**
 - ▶ Is it in good condition – are you maintaining it in accordance to the manufacturer's instructions?
- Is the ventilation adequate to be using this substance?**
 - ▶ Do you need to open doors and windows, turn on ceiling fans or adjust air-conditioning?
 - ▶ Is the area free of ignition sources?
- Have you ensured that other people - staff and students - will not be exposed to the product?**
- Is water available in the event of an accident with chemicals?**
- Is appropriate clean up equipment close-by?**
- Do you have a method to contact help in the event of an accident with chemicals?**

Handling the chemical – pumping, decanting, dispensing, filling, using.

- When transferring chemicals use methods that reduce the generation of vapours and minimise splashing or spillage.**
 - ▶ Make sure you have adequate room to work efficiently and safely
- Is the container the substance is being transferred into suitable?**
 - ▶ Don't use a plastic container that could be softened or made brittle by the chemical
- If you have decanted a product into a smaller container – is it correctly labelled?**
- Dispose of spilt chemicals according to the MSDS. Do not put spilt chemicals back into their container.**