



Chemicals

What is the issue?

The safe use, storage and disposal of chemicals in and around the dairy.

Why is it an issue?

Chemical use can be dangerous at any time, but particularly when you are exposed to a chemical concentrate. Aside from direct ingestion, chemicals can be absorbed into the body through:

- exposure to skin;
- breathing in fumes when applying, cleaning, decanting or mixing; and
- ingesting the substance by accident or through poor hygiene.

Chemicals are a necessary part of managing a dairy, but many are classified as dangerous goods or hazardous substances – or both.

Every day, work in the dairy exposes farmers and their employees to a variety of chemicals, such as acids, alkalines (caustics), iodine teat sprays, formalin, antibiotics, vaccines, drenches, lice treatments and veterinary chemicals, including hormones.

‘Dangerous Goods’ are substances that can have an immediate effect on people, the environment or property in the form of fires, explosions, poisoning or corrosion.

‘Hazardous Substances’ are chemicals that may present a more direct risk to a person’s health.

Some chemicals may be classified as both.

What are the consequences of ignoring it?

The inappropriate use of chemicals or poor transport, storage or disposal could, for example, lead to a violent reaction, the corrosion of materials, burns in the case of acids and alkalines, and serious illness in the case of Formalin (a known carcinogen).

How safe is your dairy now?

Do you know exactly which chemicals are in the dairy and how dangerous they are? Do you have up-to-date Material Safety Data Sheets (MSDSs)?



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MSDSs are required for every chemical on-site.

A MSDS contains essential information about the use and storage of a chemical, including:

- * its physical properties and a list of ingredients;
- * guidelines for transport, use, storage and disposal;
- * withholding periods;
- * first aid information;
- * the personal protective equipment (PPE) to be used; and
- * whether it is a hazardous substance and/or dangerous good.

MSDSs are available from your chemical supplier or manufacturer, and a hard copy must be available to employees, usually at the place where the chemical is used.

What can be done right now?

First up, take an inventory of all the types and quantities of chemicals on-farm, and check that all the chemical containers are correctly labelled and not stored in inappropriate containers, such as cordial bottles.

Remove all unwanted, out-of-date and banned chemicals from the dairy and dispose of them in line with the regulations and according to their MSDSs.

The 'hierarchy of control' – from most effective to least effective – is an established process for identifying the most effective way of controlling chemical risks, including hazardous substances.

The hierarchy of control

Elimination: Stop using and completely remove a hazardous substance, e.g. formalin.

Substitution: Use a less-hazardous substance, form or process, e.g. use high-pressure water to remove algae and other residues from concrete surfaces, rather than detergents.

Isolation: Separate hazardous substances from people by distance or barriers, e.g. keep chemicals in a lockable chemical store.

Engineering controls: Use machinery, equipment or processes to reduce possible contamination, e.g. use a closed chemical application system that removes the need to directly handle chemicals.

Administrative controls: Have procedures in place for handling chemicals safely, e.g. restrict access to areas that contain hazardous substances or where they are used, and provide adequate training and information about the chemicals in use.



Personal protection equipment (PPE): Wear protective equipment, e.g. respirators, coveralls, gloves, footwear, goggles or face shields. The PPE must be suitable for the type and volume of chemicals you are using, meet the relevant Australian Standard, and be regularly checked and maintained. PPE should be used when other control measures are not practicable or in conjunction with other controls.

Monitoring and health surveillance: Although not technically part of the Hierarchy of Controls, monitoring the health of workers is an important way to ensure that the control of chemical risks is an ongoing process. As chemical-related health issues can develop over long periods of time, keep any monitoring or health surveillance records for 30 years. The MSDS will provide information about whether health monitoring is required.

Transport & Storage

- When not in use, *all* chemicals should be stored in a locked, purpose-built chemical locker or shed. Chemical storage should provide spill containment and be well ventilated. Do not store chemicals in a work area, such as the vat room.
- Chemicals used in the dairy should *always* be inaccessible to children, preferably behind a child-proof barrier.
- Veterinary chemicals that require refrigeration should be kept in a separate refrigerator that is not used for food and drinks, such as a small, lockable bar-type fridge. When using veterinary chemicals, always follow the stated withholding periods.
- Acids and alkalis should be clearly labelled and distinguished from each other. They should never be mixed together, which risks a violent reaction.
- Have chemicals delivered to the farm wherever possible. If that is not possible, make sure they are loaded, transported and unloaded safely and securely – that does not include the passenger area or boot of a passenger vehicle.
- Return chemicals, including stock sprays, to the locked store after use.

Decanting, Mixing & Use

- Mix chemicals in a ventilated area and on a non-porous surface that can be readily cleaned and with close access to clean, reticulated water for cleaning or first aid.
- Chemical spills should be contained, cleaned up and disposed of according to the label and MSDS.
- Pouring chemicals from a drum risks spills and splashing. It is far safer to use pumps, siphons or gravity taps to extract the contents of a drum. Better still would be the installation of a closed chemical delivery system that removes the need for direct contact.
- Adequate water for removing chemicals spilt on skin and splashed in eyes is not usually considered a problem in dairies, however you need to ensure that what is available is appropriate, for example



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a soft water hand-held shower located where detergents are decanted or used for removing chemicals in the eye.

- PPE should only be used to complement other protective solutions. It shouldn't be the only form of protection you use when decanting, mixing or using chemicals. That said, always make sure you or your employees wear the correct PPE for the task being performed; the MSDS or the label of the chemical will be able to provide you with that information.
- Employers must supply and maintain PPE to their workers that is suitable for the job and in a good, clean condition.
- Employees have a responsibility to wear PPE and maintain it in good condition.
- Follow the stated withholding periods for chemicals used around animals that produce milk or meat.

What are the next steps?

Each farm should have a formal chemical management plan. It should include an MSDS that is no more than five years old for every chemical used on-farm and a plan for dealing with chemical emergencies or spills, including first aid and emergency contacts.

Workplace rules should be put in place for the use of chemicals and be followed by all workers. Those who have a need to use the chemicals, particularly the restricted ones, should be adequately trained under a suitable program, such as the Farm Chemical Users Course (ChemCert or equivalent).

What you should be considering longer term

Are chemicals always necessary? It can be useful to review all the chemicals being used in the dairy and on-farm and work out whether there might be another way of doing a job that does away with the need for chemicals. If chemicals are necessary, perhaps there is another available that poses less of a risk to people.

What actions are not optional

Under the Hazardous Substance Regulations, you must obtain MSDSs for all chemicals used in the dairy and on-farm and undertake regular risk assessments in relation to the transportation, storage and usage of farm chemicals.

If a chemical is classified as Hazardous as per the MSDS, you are required to document the risk assessment (sample risk assessment attached).

Also, the Hazardous Substance Regulations require you to record use and storage in a chemical register.

Where to go for more information

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Standards Australia for PPE information	www.standards.com.au
National OHS Commission	
Hazardous Substances Fact Sheet	www.nohsc.gov.au
Code of Practice on Workplace Hazardous Substances	www.nohsc.gov.au
Hazardous Chemicals Information System	www.nohsc.gov.au
Disposal of chemicals	www.chemclear.com.au
Disposal of empty containers	www.drummuster.com.au
General MSDS information	www.msds.com.au
Chemical training and how to conduct chemical risk assessments	www.chemcert.org.au
MSDS Dairy Chemicals	www.tasmanchemicals.com.au