

What good looks like: chemical risk assessments in Australia

A practical guide for WHS professionals to complete, risk-based chemical risk assessments under the WHS Regulations.

What is a chemical risk assessment?

A chemical risk assessment identifies how hazardous chemicals at a workplace could cause harm, how likely and serious that harm is, and what controls are needed. A product risk assessment applies this to one specific product at one specific site, across fire, exposure, spills and storage.

Is a chemical risk assessment required?

Not always, but a risk-based approach is. The WHS Regulations don't make a risk assessment mandatory for hazardous chemicals. Part 3.1 (regulations 32 to 38) does require you to identify hazards, eliminate or minimise risks so far as is reasonably practicable using the hierarchy of controls, maintain those controls and review them. The Code of Practice notes that a risk assessment is, *"in many circumstances... the best way"* to do this. **Whatever method you use, it must be holistic:** Part 7.1 covers reactions, fire, stability, spills, damage and emergencies, not just exposure.

What the Code of Practice expects

- **Start with the label and SDS.** A basic assessment reviews them and assesses the risks of using the product.
- **Scale effort to risk.** Generic assessments suit genuinely identical work, but not very high-risk chemicals such as carcinogens. Significant health risk or uncertain exposure needs a detailed assessment.
- **Consult the people doing the work.** "Observe and consult with workers to find out how the job is actually done."
- **Consider the whole picture.** Who could be exposed, how it's used and stored, what it could react with, and whether existing controls work.



The four areas a complete assessment covers

Area	Ask	SDS sections	Key regs
Fire and explosion	Could it catch fire, make a fire worse or react here? Flash point, vapour build-up, ignition sources, static, hazardous areas.	5, 9, 10	354, 355, 359
Health and exposure	How could it enter the body, and what blocks each route? Inhalation, skin and eyes, ingestion, long-term effects, exposure limits, health monitoring.	2, 4, 8, 11	49, 50, 368
Spills and environment	Where does it go if the container fails? Bunding, drains, stormwater, vapour release, clean-up safety.	6, 12, 13	357
Storage and segregation	How is it kept, and what is it kept near? Incompatible neighbours, stability, damage, quantities against placard and manifest thresholds, security, signs.	7, 10, 14	346 to 350, 353, 356, 358

Underpinned by emergency readiness: equipment, plans and information for responders (regs 359 to 362). Sections 1, 2, 3, 15 and 16 of the SDS inform every area.

Six steps to a complete chemical risk assessment

- 1. List the products and get current SDSs.** Start from your hazardous chemicals register and confirm each SDS is the supplier's current version.
- 2. Identify every hazard, health and physical.** Use the GHS classification (Section 2), physical properties (9), stability and reactivity (10), and the dangerous goods class where one applies.
- 3. Assess the risk where the product is stored and used.** Who could be exposed, how it's used, how much is held, what it's stored near, and how likely and serious harm could be. Observe the work and consult workers and HSRs.
- 4. Control the risk using the hierarchy of controls.** Work from the top down and combine controls where one isn't enough.
- 5. Record, communicate and train.** Document it, share it with the people who work with the product, and align training, signage and emergency information.
- 6. Review it.** When controls aren't working, before a change, when new information arrives (an updated SDS or changed exposure limit), or when workers or an HSR ask.



Applying the hierarchy of controls to hazardous chemicals

The hierarchy of controls for hazardous chemicals

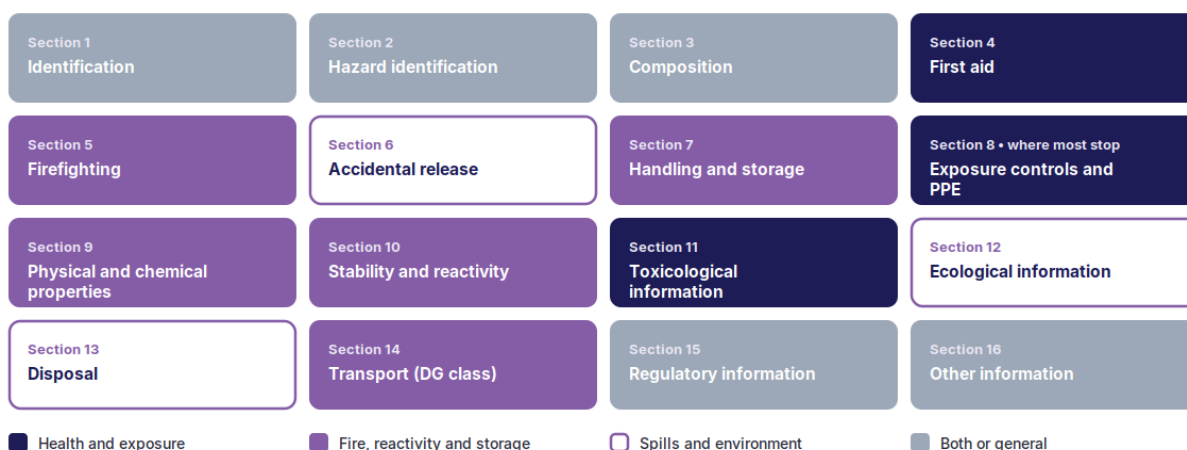


The test: an assessment that starts and ends with gloves and goggles hasn't applied the hierarchy.

Which SDS sections to use

Section 8 is one section in sixteen

Where the safety information sits in a Safety Data Sheet, beyond the exposure controls.



SDSs are a starting point. Always confirm the information against how the product is stored and handled on your site.



What a chemical risk assessment template should include

- Product name, SDS version and date, GHS classification and dangerous goods class
- Site and storage location, quantity held, and the task or activity assessed
- Who could be exposed: workers, contractors, visitors and the public
- Hazards across all four areas, with existing controls and whether they work
- Risk rating before and after controls, using likelihood and consequence
- Additional controls chosen using the hierarchy, with owners and due dates
- Who was consulted, sign-off, and the next review date

Self-check: is your chemical risk assessment complete?

- ☐ It covers fire and explosion risk, including ignition sources.
- ☐ It covers spills, leaks and where a release would go.
- ☐ It covers storage and segregation, including what the product is stored next to.
- ☐ Quantities have been checked against placarding and manifest thresholds.
- ☐ Controls follow the hierarchy of controls, not just PPE.
- ☐ It uses SDS sections beyond Section 8 (such as 7, 9 and 10).
- ☐ The workers who store and handle the product were consulted.
- ☐ There is a review date and clear review triggers.

8 of 8: complete. 5 to 7: close, with gaps. 0 to 4: mostly an exposure assessment, answering one question in four.



Do the rules differ in Western Australia and Victoria?

The legislation and regulation numbers differ, but every jurisdiction expects hazards to be identified, and risks controlled across health, fire, spills and storage. The four areas apply everywhere.

Jurisdiction	Hazardous chemicals	Dangerous goods storage
NSW, Qld, SA, Tas, ACT, NT, Cth	WHS Act and Regulations: Part 3.1 risk management and Part 7.1 hazardous chemicals.	In the same WHS Regulations: manifests, placards, notification and emergency plans.
Western Australia	WHS Act 2020 and WHS (General) Regulations 2022, closely aligned with the model laws.	Dangerous Goods Safety Act 2004 and its storage and handling regulations. Sites above manifest quantities need a licence, manifest, site plan and emergency plan, plus a risk assessment for each dangerous good and installation, reviewed at least every five years.
Victoria	OHS Act 2004 and OHS Regulations 2017: register, SDSs, hierarchy of control, exposure standards, health monitoring.	Dangerous Goods Act 1985 and Storage and Handling Regulations 2022: identify hazards, control risk using the hierarchy, stability, spills, manifests, notification, emergency plans.

Workplace Exposure Limits apply in all jurisdictions from 1 December 2026, with Victoria adopting them through its own regulations.

Always check the requirements that apply to your site. Sources: model WHS Regulations; Safe Work Australia Code of Practice, Managing risks of hazardous chemicals in the workplace; WorkSafe WA; WorkSafe Victoria.

See how DGXprt Product Risk Assessments work through all four areas.
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