

Lead exposure and lead risk work

Lead is a metal obtained from mining lead ore, which is used in a number of forms including pure metal, alloys (mixtures of metals) and as lead compounds. It has many uses including vehicle batteries, solder, paint pigments and as a stabiliser to protect plastic from sun damage.



Dangers of exposure to Lead

Exposure to lead has long been known to exert toxic effects on the human body. Lead particles can be inhaled through dust or fumes or swallowed (ingested) by eating contaminated food or moving it from hand to mouth with contaminated fingers. Exposure to lead can have a broad range of adverse health effects depending on the amount of lead present and the length of exposure.

Lead risk work

The [Work Health and Safety Regulation 2011 Part 7.2 Lead](#), requires the department to provide employees with information about health risks of **lead process activities** and to notify the Regulator of **lead-risk work**:

- **lead processes** are activities that expose a person to lead dust or fumes and are defined in the WHS Regulation 2011, s392. All lead processes require a risk assessment (WHS Regulation s402).
- **lead risk work** is part of a lead process that is reasonably likely to cause the blood lead level of the person conducting the activity to reach or exceed 0.24 µmol/L (5 µg/dL) for a female with reproductive capacity or 0.97 µmol/ (20 µg/dL) for anyone else. These levels were reduced in a Regulation amendment in July 2023.

Lead risk work requires stringent regulatory compliance that includes health surveillance and biological monitoring. To support the elimination of higher risk chemical activities the [Chemical management procedure](#) prohibits activities that require health surveillance; accordingly, the department encourages the phasing out of lead use.

Even though some departmental staff may undertake activities involving exposure to lead for example soldering, science experiments and plumbing, most activities would **not** meet the criteria of **lead risk work** provided:

- the quantities handled and duration and frequency of exposure are minimal;
- work processes minimise the generation of dust and fumes; and
- local exhaust ventilation is used to control dust and fume exposure by removing dust/fumes away from the breathing zone and discharging it safely.

Provided a [lead activity risk assessment](#) is completed and the exposure risk is controlled appropriately using these controls (above) and the additional safety precautions listed (below, lead **process** work may be undertaken. Any lead processes that include **lead risk work** are not permitted for department employees.

Safety Precautions

To prevent exposure to lead, staff are to:

- eliminate lead process activities wherever feasible e.g. use alternatives to lead where possible such as lead-free paint and PVC, tin or silver solder, etc.

Where elimination is not feasible:

- understand the toxic effects of lead exposure and the hazards and risks of using lead in the workplace BEFORE starting a lead process
- conduct a [lead activity risk assessment](#) (DoE only) for each process using lead to identify lead hazards, control exposure risks and review controls to ensure they remain effective
- use practices that prevent the production of dust containing lead e.g. do not dry sweep or sand lead containing materials or pressure wash (gurney) lead painted buildings
- apply good hygiene practices e.g. confining lead activities to defined work areas, not eating and drinking in lead work areas, hand washing after activity, after removal of PPE and before eating, toileting etc
- ensure all lead compounds are captured in your hazardous chemical register (i.e. via your Chemwatch manifest)

More Information [Workplace Health and Safety Queensland – Working with Lead](#)