

NSW mining and extractives industry

What is lead?	Why is it a health hazard?	What are the exposure monitoring requirements for the health hazard?	What are the health monitoring requirements for the health hazard?
<p>Lead is an alkali earth metal.</p>	<p>The lead mining process extracts lead sulphide ore and in this state, lead sulphide (PbS) is referred to as galena and is relatively harmless. When exposed to air or heat, lead oxidises and as a result, forms lead oxide (PbO) which can be harmful. Lead poisoning can occur when lead oxide is inhaled or ingested. Symptoms include but are not limited to:</p> <ul style="list-style-type: none"> → headaches → tiredness → abdominal pain → limb paralysis. <p>Long term exposure can lead to kidney damage, anemia, nerve damage and brain damage.</p>	<p>The Work Health and Safety Regulation 2017 requires a person conducting a business or undertaking (PCBU) to ensure that monitoring is carried out. Lead is an atmospheric contaminant and personal monitoring devices should be worn by workers to obtain real time exposure monitoring. The national exposure standards, limit exposure as a time weighted average of 0.15 mg/m³ over an eight-hour period.</p> <p>The process of exposure monitoring can be complex and it is recommended that expert assistance from a competent person should be sought. As such a suitable qualified occupational</p>	<p>Health monitoring must occur for workers who carry out lead risk work, health monitoring arrangements include the following;</p> <p>For females not of reproductive capacity and males:</p> <ul style="list-style-type: none"> → six months after the last health monitoring of the worker and if the last monitoring indicates a blood level less than 30 µg/dL (1.45 µmol/L) → three months after the last biological monitoring of the worker if the last monitoring indicates a blood lead level of 30 µg/dL (1.45 µmol/L) or more but less than 40 µg/dL (1.93 µmol/L) → six weeks after the last biological monitoring of the worker if the last monitoring indicates a blood lead level of 40 µg/dL (1.93 µmol/L) or more.

What is lead?

Why is it a health hazard?

Lead oxide is most likely to be found once the ore has been mined and the quartz is extracted from the lead ore.

Lead ore is typically stowed in concentrations and it is in these concentrations that lead can oxidise and become hazardous. In addition, activities that, require lead to become hot, such as the use of oxyacetylene, can cause the lead to oxidise.

What are the exposure monitoring requirements for the health hazard?

hygienist should be used in the process.

What are the health monitoring requirements for the health hazard?

For females of reproductive capacity;

- three months after the last biological monitoring of the worker if the last monitoring indicates a blood lead level of less than 10 µg/dL (0.48 µmol/L) ,,
- six weeks after the last biological monitoring of the worker if the last monitoring indicates a blood lead level of 10 µg/dL (0.48 µmol/L) or more.

If blood levels are elevated above the acceptable limits, these workers must be reassigned to work that does not further expose them to lead.

Training and education about the effects and symptoms of lead exposure must be provided to workers who conduct lead work and women who are pregnant should not be permitted to conduct lead-based work during their pregnancy.

Controls for lead

What are the controls?

Lead should be stored in such a way that inhibits the oxidation process and in an area where it is not easily accessed by workers. Access should be limited to authorised workers and with appropriate levels of controls such as limiting the amount of time a worker is in the area, and using the appropriate protective equipment. In addition, practicing hygiene such as workers maintaining personal hygiene through washing and the PCBU providing uncontaminated work clothes, for instance disposal coveralls. When conducting maintenance tasks, the area should be well ventilated.

What are the legislative obligations with regards to health records?

Health records with relation to lead should be kept for 30 years.