



SACTA INFORMATION SHEET

1. OBJECTIVE:

To ensure members are aware of the possible exposure to **lead** and to recommend measures to reduce the risk of exposure.

2. BACKGROUND:

Lead is a natural occurring blue-grey metal, of bright lustre, soft and highly malleable. It can be found in two ways: 'organic' or 'inorganic'. Organic lead is found in alkyl lead compounds where the lead is bound to carbon atoms.

Organic lead includes a number of common high pressure lubricants (lead soaps) and the gasoline additives such as tetraethyl lead (TEL) and tetramethyl lead (TML) found in 'leaded petrol'.

Inorganic lead is found in a variety of lead compounds such as in ammunition, solder, sinkers, diving weights and batteries.



High concentrations of lead in the blood may produce the following effects:

- irritability and a shortened attention span
- suppression of appetite with resulting weight loss
- sleep disturbance

- weakness in fingers, wrists and ankles
- fatigue
- hyperactivity
- reductions in intelligence and short-term memory
- infertility
- anaemia

If serious exposure occurs; nerve damage, seizures, intermittent abdominal pain or constipation, coma and even death may occur.

3. ROUTES OF ENTRY

Occupations in which the highest potential exposure to lead exists include mining, primary and secondary smelting, production of lead-acid batteries, pigment production, construction and demolition.

Whilst the risk is lower than above, persons regularly using firearms may also be at risk as ammunition contains small amounts of inorganic lead.



4. LEAD AND ITS EFFECTS

High lead levels damage many systems in the body and can be harmful through acute (short, high dose) or chronic (long term) exposure. Exposure to lead presents varying health risks depending on age. It represents a serious health risk to the unborn child, as elevated maternal blood lead levels are transferred to the foetus and can affect bone development, organs and cause low birth weight. In adults, high levels are generally caused through accumulation of lead affecting various bodily systems.

Inorganic lead enters the body through inhalation and ingestion of dust and fumes that contain lead. Organic lead enters the body by inhalation and percutaneous (skin) absorption. People most at risk are workers in alkyl lead manufacture, gasoline refining, transportation and tank cleaning. Alkyl lead was used as a fuel additive and was phased out prior to 1999 in over 40 countries. It remains in some marine and aviation fuels. The most efficient method of absorption is via inhalation. A much greater percentage of inhaled lead will transfer to the blood stream to raise blood lead levels and be accumulated. **Ingestion occurs through mouthing contaminated objects such as the hands, food or cigarettes.** The risk of lead poisoning is small if lead is handled without melting it or creating dust or fumes.

Ceiling Dust

Significant lead levels are likely to occur in the ceilings of older homes, near major roads or highly industrialised areas. This is due to the use of leaded paints before 1976 and lead in petrol which was phased out in Australia in 2000. Over a period of time, the lead from the lead-paint and petrol may have contaminated the dust found in the ceiling cavity.

5. REDUCING RISK OF EXPOSURE

Minimising lead ingestion requires strict hand hygiene techniques, ensuring hand washing after handling lead (eg ammunition) and ensuring that food items are not contaminated.



Minimising inhalation requires the use of proper ventilation and exhaust systems in enclosed areas (eg indoor firearms ranges or ventilation hoods above soldering areas).

Members should perform a risk assessment if they are presented with a situation where they believe that there is a risk of lead exposure and should seek the appropriate advice or assistance to address the risk.

FURTHER INFORMATION:

This Information Sheet is to be placed in a prominent position where all SACTA members can view it.

**SACTA Information sheet
14 December 2011.**