

Working with a toxic compound

Lead(II) salts: chronic toxicity

Hazards	References		
CMR	TLV	TLV-STEL	BEI
	0.1 mg/m ³ (i)	0.8 mg/m ³ (i)	400 µg/L (man) (if > 45 years old) 100 µg/L (woman < 45 years old)
R1A			

SUVA 2025

Legend:

R	Reprotoxic (alteration of fertility and/ or of the foetus' development): classes 1A, 1B and 2
TLV	Recommended airborne exposure limit for 8h work/ day (SUVA)
TLV-STEL	Threshold limit value – short term exposition limit (15 min) (SUVA)
i	Inhalable portion
BEI	Biological limit value (SUVA)
GHS	Globally Harmonized System of classification and labelling of chemicals

More information in the **Safety Data Sheet** of the products. Read chapters 2 (hazards), 4, 5, 6 (first aid and intervention measures; apply in addition to the below mentioned EPFL safety rules), 7 (handling & storage), 8 (PPE) and 10 (reactivity & stability).

Health hazards

Lead compounds induce blood poisoning. Exposure to lead can lead to anaemia, nervous system dysfunction, weakness, hypertension, kidney problems, decreased fertility and increased level of miscarriages, as well as low birth weight and premature deliveries.

Lead crosses the placental barrier. Young children and foetuses are particularly susceptible to the neurotoxic effects of lead toxicity. Lactating women should not be in contact with lead salts because, due to its reactivity similar to calcium, it is found in breast milk.

Lead accumulates in the bone marrow and the half-life in the bones is >10 years.

Personal protective equipment

- Lab coat (100% cotton) with the sleeves extended
- Nitrile gloves (minimum 0.11mm; two pairs of gloves recommended) marked EN374
- Safety glasses marked EN166

Remove gloves immediately if contaminated, and wash hands with soap and water. Always wash your hands after your work is done.

Contaminated PPE must not leave the lab!

Reference:

SUVA 2025, Gestis 2025, SDS Sigma-Aldrich 11.3.2025 PbBr₂
WHO, <http://www.inchem.org/documents/ehc/ehc/ehc165.htm>

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Storage and handling

- The lead is exclusively handled in a fume hood or ideally in a glove box.
- The compound is never handled without nitrile gloves.
- A periodic cleaning of surfaces that could be contaminated must be performed to limit the risk of skin contact.
- Respect the chemical incompatibilities of lead salts during all steps, including storage and disposal. Lead salts can react with strong oxidizing agents and with acids.
- Lead must be stored in *a locked ventilated cabinet*, inaccessible to unauthorized people.

Occupational exposure risk assessment

- An assessment by the occupational hygiene team (hygienetravail@epfl.ch) is required to determine whether the working area needs to be classified as a “lead zone”.
- If the number of working hours implying the use of Pb compounds is higher than 200 hours/year (or > ½ day per week), users must complete the online confidential medical questionnaire ([Health at work - EPFL](#)) and send it to the Occupational Health Department (sante@epfl.ch).
- In the event of pregnancy (or pregnancy project), employees should contact the Occupational Health Service as soon as possible and complete the online maternity announcement form ([Maternity protection - EPFL](#)).

IN CASE OF EMERGENCY

Contact the intervention team - **dial 115 (or 021.693.30.00 from mobile phone)**.

In case of projections

In the eyes: use the eye-washer until the bottles are empty, then follow the instructions from the intervention team.

On the hands: immediately wash with tap water and continue until the intervention team arrives.

On the body: 1) go under the security shower immediately and, under the running water, remove your soiled clothes. 2) go under a shower (in a changing room, for example) with a mixer tap and a curtain. There you can keep rinsing while removing the remaining clothes at a more comfortable temperature. Follow the instructions of the intervention team.

In case of a spill: call 115. Only the intervention team deals with the spill.

Reference:

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