





Lead and its compounds

including Lead oxides, bromide, nitrate(V), ethanoate (acetate) etc

Substance	Hazard	Comment
Lead (metal) and lead compounds (solid) ie, carbonates, oxides, sulfide, chloride, bromide, iodide, nitrate, sulfate, ethanoate (acetate), chromate.	 HARMFUL	DANGER: harmful if swallowed or inhaled; may damage organs through repeated or prolonged exposure; may damage the unborn child. Very toxic to aquatic life.
Lead nitrate, ethanoate (acetate) Concentrated solutions (if 1 M or more)	 HEALTH HAZARD	Includes cerussite, white lead, litharge, massicot, red lead, galena. Lead chromate(VI) is used in the yellow lines on roads. Old paints often contained lead sulfate or other lead pigments. Young children may be at risk if they chew old objects painted with a lead-based paint.
Lead nitrate, ethanoate (acetate) Concentrated solutions (if 1 M or more)	 ENVIRONMENTAL HAZARD	Tetraethyl lead was added to petrol to improve the combustion characteristics but leaded petrol has been phased out in most countries because when burnt in cars, it produces particles of lead compounds. Note that most lead compounds are insoluble in water or very nearly so. In soft-water areas, (old) lead pipes may very slowly dissolve exposing people to low levels of lead over very long periods of time.
Lead nitrate, ethanoate (acetate) Most solutions (if less than 1 M but 0.015 M or more)	 HEALTH HAZARD	DANGER: harmful if swallowed or inhaled; may damage organs through repeated or prolonged exposure; may damage the unborn child. Very toxic to aquatic life.
Lead nitrate, ethanoate (acetate) Extremely dilute solutions (if less than 0.015 M)	LOW HAZARD	

Typical control measures to reduce risk

- Wear eye protection.
- Use the lowest possible amounts and concentrations
- Preferably, heat lead compounds in a fume cupboard; avoid raising dust (eg, by dampening powders).
- Less-volatile compounds (eg, oxides) may be heated in small amounts in a well-ventilated room (but not if those who are, or who might be, pregnant are present).
- Use lead nitrate rather than lead ethanoate (acetate) when a soluble lead salt is needed.
- Wash hands after using lead or its compounds.

Assessing the risks

- **What are the details of the activity to be undertaken? What are the hazards?**
- **What is the chance of something going wrong?**
eg, solution spurts out of a test tube when heated or dust is breathed in.
- **How serious would it be if something did go wrong?**
eg, could anybody be exposed to dangerous lead levels for long periods of time?
- **How can the risk(s) be controlled for this activity?**
eg, can it be done safely? Does the procedure need to be altered? Should goggles or safety spectacles be worn?

Emergency action

- **In the eye** Flood the eye with gently-running tap water for at least 10 minutes. Consult a medic.
- **Swallowed** Do no more than wash out the mouth with water. Do **not** induce vomiting. Consult a medic.
- **Spilt on the skin or clothing** Brush off any solid. Remove contaminated clothing. Drench the skin with plenty of water. Rinse contaminated clothing with water.
- **Spilt on the floor, bench, etc** Scoop up any solid. Try to avoid raising dust. Rinse the area with water, diluting greatly. Solutions should be treated with mineral absorbent (eg, cat litter).