

Lead in Chemistry Questions with Solutions

Q1. Galena is an ore of-

- a) Ag metal
- b) Pb metal
- c) Cu metal
- d) Fe metal

Correct Answer: (b) Pb metal

Q2. The symbol for lead is "Pb," which stands for the word plumbum. What does plumbum mean?

- a) Waterworks
- b) Plumber
- c) Pipes
- d) Moving

Correct Answer: (a) Waterworks

Q3. Lead is-

- a) Radioactive pollutant
- b) Noise pollutant
- c) Air pollutant
- d) Water pollutant

Correct Answer- (c) Air pollutant

Q4. The chemical formula of lead sulphate is-

- a) Pb_2SO_4
- b) $\text{Pb}(\text{SO}_4)_2$
- c) PbSO_4
- d) $\text{Pb}_2(\text{SO}_4)_3$

Correct Answer: (c) PbSO_4

Q5. Lead alloys containing _____ lead are used as bearing metals.

- a) 2-3%
- b) 8-10%
- c) 14-16%
- d) 17-20%

Correct Answer: (b) 8-10%

Q6. State True or False- Pencil leads are made of lead metal.

Answer. False.

The lead in the pencils is made of graphite powder, a carbon allotrope, rather than lead metal.

Q7. Name a metal that is non-lustrous.

Answer. Lead is a non-lustrous metal.

Q8. Which alloys contain lead metal? State one property of that alloy.

Answer. The alloy that contains lead metal is Solder. It contains some amount of tin as well. Solder has a low melting point, making it ideal for welding electrical wires.

Q9. Why is lead toxic?

Answer. The toxicity of lead can be explained as follows-

- The element Lead has the greatest impact on the central nervous system.
- It is especially hazardous to babies and children, whose development can be hampered by lead exposure.
- Lead is a poison that accumulates over time. Unlike many toxins, there is no safe level of exposure to lead, despite the fact that it is present in many common materials.

Q10. What are the properties of lead?

Answer. Some of the properties of lead are as follows-

- Lead (Pb) is a highly malleable white lustrous metal with a soft texture.
- In addition to being a good conductor of electricity, the metal is highly corrosion resistant.
- When burned in air, the metal in powdered form produces a bluish-white flame.
- Lead fluoride is formed when lead is mixed with fluorine at room temperature.

Q11. Which food products contain lead?

Answer. Fruits, vegetables, meats, grains, seafood, soft drinks, and wine may contain high levels of lead. Cigarette smoke contains trace amounts of lead as well.

Q12. What is lead used for?

Answer. Lead is widely used in automobile batteries, pigments, ammunition, cable sheathing, lifting weights, diving weight belts, lead crystal glass, radiation protection, and some solders. Corrosive liquids are frequently stored in it.

Q13. Why is lead so toxic?

Answer. Lead is toxic primarily because it preferentially replaces other metals in biochemical reactions (e.g., zinc, calcium, and iron). By displacing other metals in the molecules, it interferes with the proteins that control the activation and deactivation of specific genes.

Q14. Discuss the environmental effects of lead.

Answer. Lead poisoning is bad for life on earth

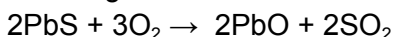
- Lead concentrations in the environment rise as a result of using leaded gasoline.
- Other human activities that contribute include fuel combustion, industrial processes, and solid waste combustion.
- Lead can enter water and soils through corrosion of leaded pipelines in a water transportation system, as well as corrosion of leaded paints, resulting in lead poisoning.
- When lead interferes with phytoplankton body functions, it can disrupt them. Phytoplankton is an important source of oxygen production in seas, and it is consumed by many larger sea creatures.
- Lead intervention disrupts soil functions, particularly near highways and farmlands, where extreme concentrations may exist. Lead poisoning affects soil organisms as well.
- Lead is a particularly hazardous chemical because it can accumulate not only in individual organisms but also throughout entire food chains.

Q15. How is lead extracted?

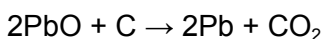
Answer. Lead is a metal with medium reactivity. Middle reactive metals can be found in carbonate or sulphide ores. Metal sulphide ores are first converted into oxides through the roasting process. The oxides are then calcined so that they can be reduced to their respective metals. Calcination is used to produce metal oxide from carbonate ores.

The primary manufacture of lead involves three stages:

- a) Ore Concentration- The process used is froth flotation.
- b) Smelting- The reaction for smelting is:



Extraction of lead from lead oxide: Lead oxide is reduced to lead metal by heating it with carbon.



- c) Refining

Practise Questions on Lead

Q1. Why is lead used in the ceramic industry?

- a) To increase strength
- b) To increase water resistance
- c) To increase lustre
- d) To increase electrical conductivity

Correct Answer: (c) To increase lustre

Q2. Softening of lead means:

- a) Conversion of lead to PbO
- b) Conversion of lead to Pb_3O_4
- c) Removal of impurities (metallic) from lead
- d) Washing lead with HNO_3 followed by alkali solution

Correct Answer: (c) Removal of impurities (metallic) from lead

Q3. Which of the following methods is used to remove lead present in silver?

- a) Cupellation
- b) Distillation
- c) Poling
- d) Lavigation

Correct Answer: (a) Cupellation

Q4. Is lead dangerous?

Answer. Lead poisoning can cause anaemia, weakness, kidney and brain damage, and even death. Extremely high levels of lead exposure can result in death. Because lead can cross the placental barrier, pregnant women who are exposed to it are also exposing their unborn child. Lead can harm a baby's developing nervous system.

Q5. What is lead material?

Answer. Lead is a chemical element with the atomic number 82 and the symbol Pb (from the Latin plumbum). It is a heavy metal with a higher density than most other materials. Lead is soft and malleable, and it has a low melting point.