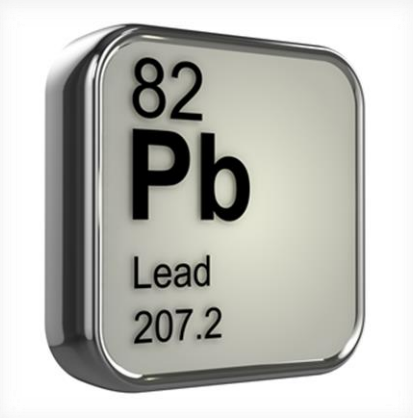
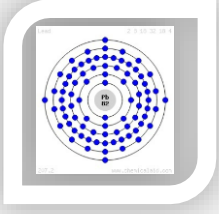


Name of the Element: Lead
Chemical Symbol: Pb
Atomic Number: 82
Atomic Mass: 207.2
Isotopes: Four (^{204}Pb, ^{206}Pb, ^{207}Pb, ^{208}Pb)
Appearance: Metallic Grey
Group: 14
Period: 6
Electron Arrangement: 2, 8, 18, 32, 18, 4
Chemical State: Solid
Melting Point: 327.46 °C
Boiling Point: 1749 °C
Density: 11.34g/cm^3
Magnetic Ordering: Diamagnetic
Poisson ratio: 0.44



A Letter to Lead

Dear Lead,

Please lead me into your world.

We met each other in the ancient times, my heart was attracted to your atomic number 82 times, but I think you should lose weight since your atomic weight is 207.2 atomic mass units...When we hung out, you started melting at 327.46°F ...When we went swimming in a hot tub, you started boiling at 1740.0°C ...When we travelled to the doctors to get health reports, the doctor announced your density was 11.342 g per cm^3. In the classroom you stood solid. Whenever we played Hide-and-Seek, I would find you in zinc, silver and copper. At the bowling match, protons scored 82 points, neutrons scored 125 points and electrons scored 82 points. When we tried lifting each other to see who's stronger, you were heavy but soft.

For many years, you and tin were thought to be the same metal. You were called "plumbum nigrum" for black lead and tin was called "plumbum album" for white lead. Over a million tons of you are recycled every year. People have known about lead poisoning since Ancient China and Ancient Greece. Alchemists associated you with the planet Saturn. Around 98% of all lead-acid batteries are recycled. You are the third most abundant of the post-transition metals on Earth.

Lead, you are very difficult to approach at first. You are classified as a chalcophile under the Goldschmidt classification, meaning that you are generally found being combined with sulfur. You rarely occur in your native, metallic form. Many of your minerals are relatively light and, over the course of the Earth's history, have remained in the crust instead of sinking deeper into the Earth's interior. This accounts for yours relatively high crustal abundance of 14 ppm; you are the 38th most abundant element in the crust.

Most people are scared of you. You are a highly poisonous metal (whether inhaled or swallowed), affecting almost every organ and system in the human body. At airborne levels of 100 mg/m^3, you are immediately dangerous to life and health. Most ingested you are absorbed into the bloodstream. The primary cause of your toxicity is your predilection for interfering with the proper functioning of enzymes. You can cause severe damage to the brain and kidneys and, ultimately, death.

Not many people would appreciate your contribution. You have been used for bullets since their invention in the Middle Ages. You have many uses in the construction industry; your sheets are used as architectural metals in roofing material, cladding, flashing, gutters and gutter joints, and on roof parapets. You are also added to copper alloys, such as brass and bronze, to improve machinability and for its lubricating qualities. The largest usage of you in the early 21st century is in lead–acid batteries. The reactions in the battery between you, lead dioxide, and sulfuric acid provide a reliable source of voltage.

Love,
Girlfriend of yours