

Zinc

Zinc is a [chemical element](#) with the [symbol](#) **Zn** and atomic number 30. Zinc is a slightly brittle metal at [room temperature](#) and has a blue-silvery appearance when oxidation is removed. It is the first element in [group 12](#) of the [periodic table](#). In some respects, zinc is chemically similar to [magnesium](#): both elements exhibit only one normal oxidation state (+2), and the Zn^{2+} and Mg^{2+} [ions](#) are of similar size. Zinc is the 24th most abundant [element in Earth's crust](#) and has five stable [isotopes](#). The most common zinc [ore](#) is [sphalerite](#) (zinc blende), a [zinc sulfide](#) mineral. The largest workable lodes are in Australia, Asia, and the United States. Zinc is refined by [froth flotation](#) of the [ore](#), [roasting](#), and final [extraction](#) using [electricity](#) ([electrowinning](#)).

[Brass](#), an [alloy](#) of [copper](#) and zinc in various proportions, was used as early as the third millennium BC in the [Aegean](#), [Iraq](#), the [United Arab Emirates](#), [Kalmykia](#), [Turkmenistan](#) and [Georgia](#), and the second millennium BC in [West India](#), [Uzbekistan](#), [Iran](#), [Syria](#), [Iraq](#), and [Israel/Palestine](#).^{[3][4][5]} Zinc [metal](#) was not produced on a large scale until the 12th century in India, though it was known to the ancient Romans and Greeks.^[6] The mines of [Rajasthan](#) have given definite evidence of zinc production going back to the 6th century BC.^[7] To date, the oldest evidence of pure zinc comes from Zawar, in Rajasthan, as early as the 9th century AD when a distillation process was employed to make pure zinc.^[8] [Alchemists](#) burned zinc in air to form what they called "[philosopher's wool](#)" or "white snow".

The element was probably named by the alchemist [Paracelsus](#) after the German word *Zinke* (prong, tooth). German chemist [Andreas Sigismund Marggraf](#) is credited with discovering pure metallic zinc in 1746. Work by [Luigi Galvani](#) and [Alessandro Volta](#) uncovered the electrochemical properties of zinc by 1800. [Corrosion](#)-resistant [zinc plating](#) of iron ([hot-dip galvanizing](#)) is the major application for zinc. Other applications are in electrical [batteries](#), small non-structural castings, and alloys such as [brass](#). A variety of zinc compounds are commonly used, such as [zinc carbonate](#) and [zinc gluconate](#) (as dietary supplements), [zinc chloride](#) (in deodorants), [zinc pyrithione](#) (anti-[dandruff](#) shampoos), [zinc sulfide](#) (in luminescent paints), and [dimethylzinc](#) or [diethylzinc](#) in the organic laboratory.

Zinc is an [essential mineral](#), including to prenatal and postnatal development.^[9] [Zinc deficiency](#) affects about two billion people in the developing world and is associated with many diseases.^[10] In children, deficiency causes growth retardation, delayed sexual maturation, infection susceptibility, and [diarrhea](#).^[9] [Enzymes](#) with a zinc atom in the [reactive center](#) are widespread in biochemistry, such as [alcohol dehydrogenase](#) in humans.^[11]

Consumption of excess zinc may cause [ataxia](#), [lethargy](#), and [copper deficiency](#).