

zinc

chemical element
Also known as: Zn

zinc (Zn), chemical element, a low-melting metal of Group 12 (Ib, or zinc group) of the periodic

Element Properties

atomic number	30
atomic weight	65.38
melting point	420 °C
boiling point	907 °C
density	7.133
oxidation state	2
electron configuration	[Ar]3d ¹⁰ 4s ²



Transition metals	Solid
Hexagonal	Equal relative strength

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Occurrence, uses, and properties

A little more abundant than copper, zinc makes up an average of 65 grams of every ton of Earth's crust. The chief zinc mineral is the sulfide sphalerite (zinc blende), which, together with its oxidation products smithsonite and hemimorphite, constitute nearly all of the world's zinc ore. Native zinc has been reported from Australia, New Zealand, and the United States, and the leading early 21st-century producers of zinc are China, Australia and Peru. For zinc's mineralogical properties, see native element.

Zinc is an essential trace element in the human body, where it is found in high concentration in the red blood cells as an essential part of the enzyme carbonic anhydrase, which promotes many reactions relating to carbon dioxide metabolism. The zinc present in the pancreas may aid in the storage of insulin. Zinc is a component of some enzymes that digest protein in the gastrointestinal tract. Zinc deficiency in nut-bearing and fruit trees causes such diseases as pecan rosette, little leaf, and mottle leaf. Zinc functions in the hemoscytopsin of snails' blood to transport oxygen in a way analogous to iron in the hemoglobin of human blood.

Metallic zinc is produced by roasting the sulfide ores and then either leaching the oxidized product in sulfuric acid or smelting it in a blast furnace. Zinc is won from the leach solution by electrolysis or is condensed from the blast furnace gas and then distilled of impurities. For specific information on the mining, recovery, and refining of zinc, see zinc processing.

