



ZINC

30
Zn
Zinc
63.38

WHAT IS ZINC?

Zinc is a chemical element with the symbol Zn and atomic number 30. It is a metallic element commonly used in construction, electrical and electronic applications, and as an alloying agent in manufacturing various products. Zinc is also an essential mineral for human health, playing a role in the immune system, wound healing, and cell growth.

DID YOU KNOW?

Zinc has the element symbol Zn and atomic number 30, making it a transition metal and the first element in Group 12 of the periodic table. Sometimes zinc is considered to be a post-transition metal.

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DID YOU KNOW?

Zinc was used by the ancient Greeks and Romans, but it was not as common as iron or copper, probably because the element boils away prior to reaching the temperature required to extract it from ore. However, artifacts do exist proving its early use, including a sheet of Athenian zinc, dating back to 300 BCE. Because zinc is often found with copper, the metal's use was more common as an alloy rather than as a pure element.

WHAT IS THE HISTORY OF ZINC?

Zinc has been known and used by humans for thousands of years. The ancient civilizations of India and China both used Zinc in medicinal and metallurgical applications. In Europe, Zinc was first mentioned in the writings of the Roman naturalist Pliny, the Elder in the 1st century AD. However, in the 12th century, Zinc was recognized as a different metal. As a result, smelting zinc from its ores was developed in the 16th century in India and the 18th century in Europe.

In the 18th and 19th centuries, zinc production increased significantly by using Zinc in galvanizing to protect iron and steel from rust. The opening of the Zawar zinc mines in India in the 18th century and the discovery of large deposits in the US in the 19th century also contributed to the growth of the zinc industry.

Today, Zinc is widely used in many industries, and it is the fourth most commonly used metal in the world, behind iron, aluminum, and copper. It is also an essential nutrient for human health and is used in various medicinal products.





ZINC

DID YOU KNOW?

The element name is believed to come from the German word "zinke," which means "pointed." This is likely a reference to the pointed zinc crystals that form after zinc is smelted. Paracelsus, a Swiss-born, German Renaissance physician, alchemist, and astrologer, is credited with giving zinc its name.

WHY IS ZINC A VITAL COMMODITY?

Zinc is an essential commodity for several reasons:

- 1. Industrial uses:** Zinc is widely used in various industries such as construction, automotive, electrical and electronic, and galvanizing. It also produces multiple products such as brass, bronze, and zinc alloy die-castings.
- 2. Medical and nutritional uses:** Zinc is an essential mineral for human health and is used in various medicinal products such as cold remedies, prenatal vitamins, and wound healing ointments. It also plays a vital role in maintaining a healthy immune system, wound healing, and cell growth.
- 3. Environmental uses:** Zinc is used in various environmental applications such as air and water purification and heavy metal removal.
- 4. Limited resources:** Zinc is a relatively scarce commodity, and mines are located in a limited number of countries, which makes it vulnerable to supply disruptions.
- 5. High demand:** With the growing world population, the market for Zinc is expected to increase in the coming years, particularly in emerging economies, where Zinc is used extensively in the construction and automotive industries.

Overall, Zinc is a versatile and valuable commodity that plays a crucial role in various industries and human health. However, it is considered an essential commodity with limited resources and high demand.



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HOW IS ZINC MINED?

Zinc is typically mined from ore deposits, which are Zinc concentrations in the earth's crust. There are several methods of mining zinc, depending on the type and location of the deposit. Some of the most common ways include:

1. **Underground mining:** This method is used for deeper deposits of zinc ore. Miners access the ore through shafts or adits (horizontal openings) and extract the ore using underground mining techniques.
2. **Open-pit mining:** This method is used for shallower deposits of zinc ore. The ore is extracted by removing the overburden (the earth and rock covering the deposit) and then using heavy machinery to remove the ore.

Once mined, the zinc ore is typically crushed and ground to release the zinc-rich minerals. These minerals are then separated from the waste rock using various methods such as flotation, gravity separation, or magnetic separation. The resulting zinc concentrate is then transported to a smelter, which is processed further to produce zinc metal.





ZINC

DID YOU KNOW?

Although galvanization is used to protect metals against corrosion, zinc actually does tarnish in air. The product is a layer of zinc carbonate, which inhibits further degradation, thus protecting the metal beneath it.

WHAT EVERYDAY PRODUCTS CONTAIN ZINC?

Many everyday products contain Zinc, including:

1. **Construction materials:** Zinc is used in the production of roofing materials, gutters, and flashing, as well as in the galvanization of steel and iron to protect them from rust.
2. **Automotive parts:** Zinc produces various car parts, such as gears, engine blocks, and cylinder heads.
3. **Electrical and electronic products:** Zinc produces batteries, motors, and components.
4. **Cosmetics:** Zinc is a common ingredient in sunscreen, as well as in some lotions, creams, and ointments.
5. **Medicines:** Zinc is used in many medications, including cold remedies, prenatal vitamins, and wound healing ointments.

