

# SILVER



## **WHAT IS SILVER?**

Silver is a chemical element with the symbol Ag (from the Latin word *Argentum*) and atomic number 47. It is a soft, white, lustrous metal highly valued for its beauty and malleability. Silver is also an excellent conductor of heat and electricity. It is commonly used in jewelry, silverware, electronics, and photography. It is also used in some medical and industrial applications.

## **WHAT IS THE HISTORY OF SILVER?**

Silver has been known and used by humans for thousands of years. It was first used by ancient civilizations such as the Sumerians, Egyptians, and Greeks for jewelry, ornaments, and currency. The Phoenicians and Romans also mined and traded silver, and it played a significant role in their economies. Silver mining boomed in Central Europe and the Americas in the Middle Ages, particularly in Germany, Bohemia, and the Andes.



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The Spanish conquest of the Americas in the 16th century led to the discovery of vast silver deposits in Mexico, Peru, and Bolivia, significantly impacting the global economy and trade during that time. In the 19th century, new silver mines were discovered in the United States and Canada, increasing global silver production. Today, silver is still mined and used in various industries, with the most prominent producers being China, Peru, Mexico, and Chile.

## WHY IS SILVER A VITAL COMMODITY?

Silver is considered an essential commodity for several reasons:

- 1. Industrial demand:** Silver has various industrial uses, including electronic components, mirrors, solar panels, batteries, and medical equipment.
- 2. Jewelry and silverware:** Silver is also used in the production of jewelry and tableware and is highly valued for its beauty and malleability.
- 3. Investment:** Silver is also a popular investment option, as it has been historically considered a store of value and a hedge against inflation.
- 4. Currency:** Silver has been used as a medium of exchange in currency and coinage for centuries.
- 5. Medical Applications:** Silver has antimicrobial properties and is used in bandages, wound dressings, and other medical instruments.
- 6. Silver is a precious metal.** It also has cultural and historical significance.

All these factors contribute to the importance of silver as a commodity.



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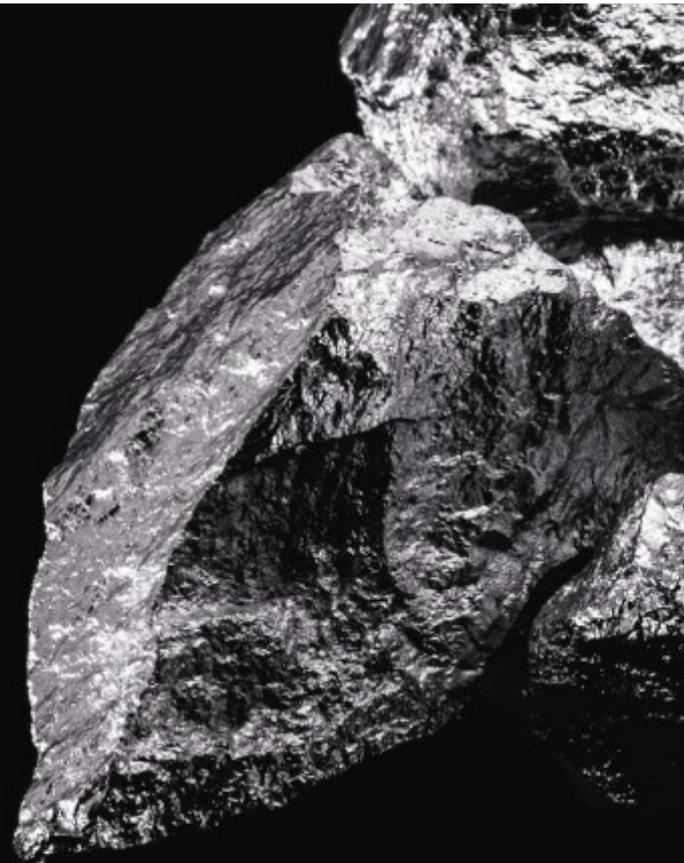
## DID YOU KNOW?

Silver has natural antibacterial properties and the saying, “born with a silver spoon” came from wealthy families who would feed their young children with silver spoons for the germ-killing properties.

## HOW IS SILVER MINED?

Silver is typically mined using one of two methods: underground mining or open-pit mining.

1. Underground mining involves digging tunnels and shafts into the earth to access silver deposits too deep to be mined via open-pit methods. This method is typically used to mine high-grade silver deposits.
2. Open-pit mining: This method involves removing surface layers of soil and rock to access silver deposits. This method is typically used to mine low-grade silver deposits close to the surface.



Once the silver ore is extracted, it is usually crushed and processed through several steps to remove the silver. This can include:

-Heap Leaching: for low-grade silver ore  
-Flotation: to separate the silver from other minerals and impurities  
-Smelting: to melt the silver and separate it from other metals  
-Refining: to purify the silver to a high degree of purity.

Mining silver can have negative environmental and social impacts, such as deforestation, habitat destruction, loss of biodiversity, displacement of local communities, and pollution of air and water. Therefore, it is essential for mining companies to manage these impacts properly and to follow regulations and guidelines to minimize them.



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## DID YOU KNOW?

The compound silver iodide has been used for cloud seeding, to cause clouds to produce rain and try to control hurricanes.

## WHAT EVERYDAY PRODUCTS CONTAIN SILVER?

Silver is used in a variety of everyday products, including:

1. **Electronics:** Silver is an excellent conductor of heat and electricity, so it is used in electronic components such as circuit boards, connectors, and switches.
2. **Photovoltaic cells:** Silver is used in the production of photovoltaic cells, which convert sunlight into electricity.
3. **Jewelry and silverware:** Silver is often used in the production of jewelry and silverware, such as rings, bracelets, necklaces, and cutlery.
4. **Mirrors:** Silver is used to make mirrors because it is highly reflective.
5. **Batteries:** Silver is used in some types of batteries, such as silver-zinc batteries.
6. **Medical equipment:** Silver has antimicrobial properties, so it is used in bandages, wound dressings, and other medical instruments.
7. **Water filtration:** Silver ions are used in water filtration systems to kill bacteria and other microorganisms.
8. **Clothing:** Silver ions are used in some clothing to prevent odor buildup and bacterial growth.
9. **Glass:** Silver is used to make glass more energy efficient by applying a thin layer of silver coating on the glass which reflects heat.
10. **Automotive:** Silver is used as a catalyst in catalytic converter in cars to reduce emissions.

These are just a few examples, but silver has many other uses in different industries, and it is likely that we use it in many more ways than we are aware of.

