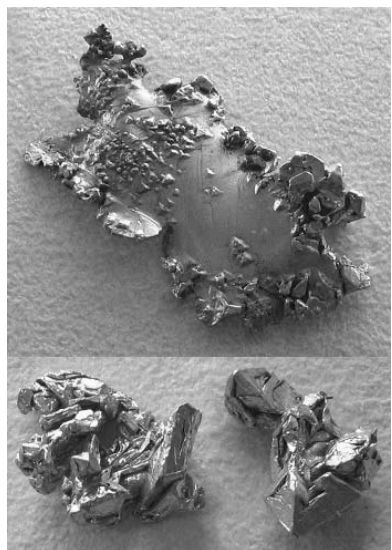


Gold

Gold is one of the most expensive metals in the world. Some of its value comes from its scarcity. Last year, about 2330 tonnes of gold were produced.



Physical properties: Gold has a metallic yellow color, it is very soft (2.5 on a 10 point scale) and is the most malleable and ductile metal we know. A single gram of gold can be flattened to cover an area of one square metre. Gold leaf can be beaten so thin it can become translucent. It is also one of the denser metals (19.3 gram/cm³) we know. Gold is an excellent conductor of heat and electricity. Gold melts at 1064C, and boils at 2856C. Since it forms alloys readily, many cheaper gold alloys are produced and used for industrial purposes. Some examples of such alloys are white gold (alloy of gold with either nickel or palladium) and red gold (alloy of gold and copper).

Chemical properties: Gold is called a "noble" metal because it does not react with most common chemicals. Because gold does not corrode easily, precious objects like jewelry, trophies or bullion

are made from it.

History: Gold has been valued highly since the earliest civilizations discovered it. Because it does not corrode or lose its shine easily, kings and rich people made many valuable items out of it. In many cultures, gold also has a symbolic meaning of wealth and prosperity. The ancient Egyptians used gold to make intricate jewelry and statues, and funeral masks and coffins for dead pharaohs, along with pots of gold for the afterlife. They extracted gold from huge mines all around the Red Sea, and as far away as Arabia. In Greece, the government released gold coins for their people, and legends were written about gold, like the tale of King Midas. Later, in Rome, gold was seen as a great luxury, and statues of emperors and gods were carved out of it. Kings had their crowns and scepters made of gold.

In India, the Mauryan king Ashoka fought a battle that cost 100,000 lives for the kingdom of Kalinga, which had reserves of gold. The Gupta kings of India introduced a gold coinage system, and large statues of deities were made. Large amounts of jewelry were produced by the artisans. In China, kings used gold to create beautiful private sanctuaries in their palaces, surrounding themselves with the metal. They also changed some of their coins to gold. The Mali Empire was famed for its gold reserves, and the king gave away so much gold that the price of gold in Egypt slumped for a decade. The Spanish and the Portuguese came to the New World to exploit the vast amounts of gold the emperors possessed.

All over the world, alchemists worked day and night to make or find the Philosophers Stone, a legendary stone that could turn metals it touched into pure gold. The Chinese believed this stone could give eternal youth. In the 19th century, there were many gold rushes, whenever new deposits were found. Farmers and merchants alike would sell their tools and wares to buy picks,

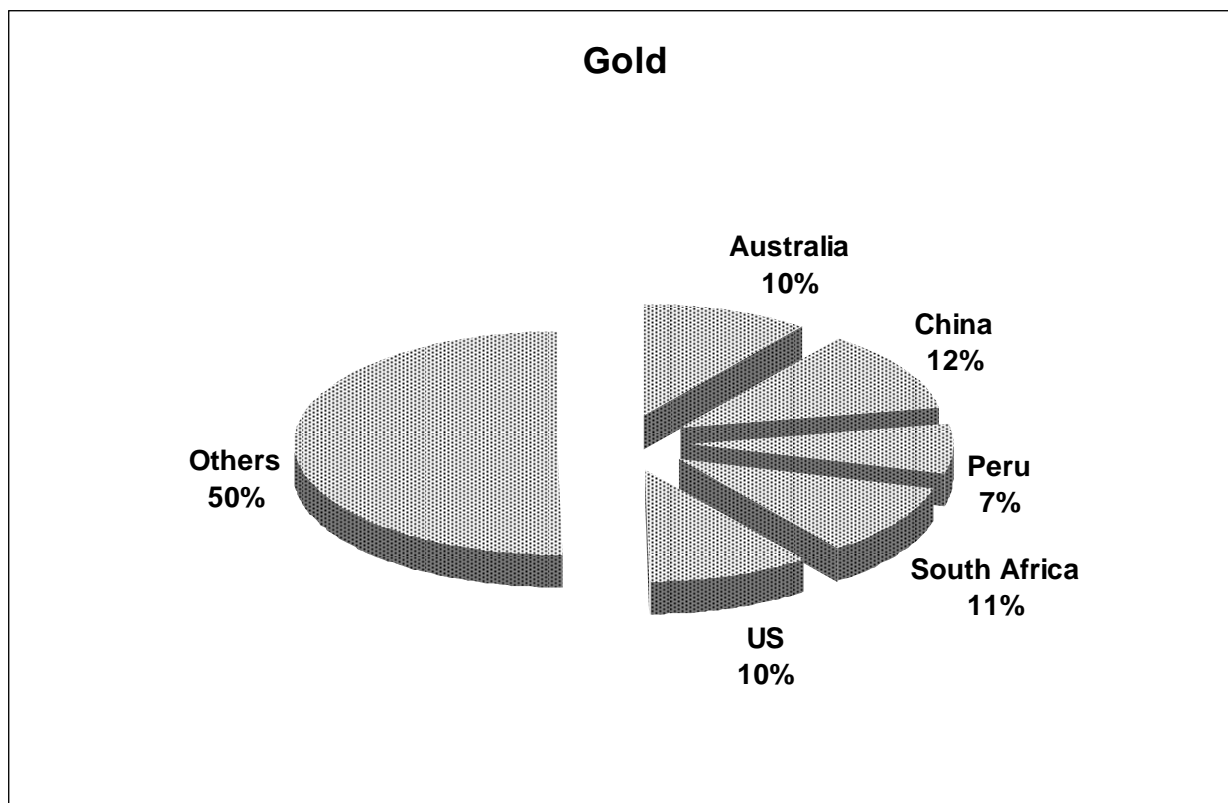
In India, large amounts of gold are given as gifts during marriage. On wedding day, some brides wear as much as 2.5 kilograms of gold on just their head, and struggle to hold their heads straight.

shovels and spades to prospect for gold. They would drain rivers looking for gold nuggets, the largest of which approached 5 kilograms. Transnational companies still set up huge mines above deposits, and drive local villagers away if they get in the way of mining. Even today, people spend considerable effort to scrape pieces of gold ore out of the ground, in the hope that they might find a substantial deposit and become rich.



Production: 50% of all the gold ever produced has come from South Africa, though China is now the highest producer of gold. Gold is mined as an ore, and people extract anywhere from 0.5-30 grams of gold for every 1000 kilograms of ore mined. The oceans hold large amounts of gold, but in extremely low concentrations. Claims of finding gold from the ocean are viewed with suspicion. The use of mercury to separate gold from its ore puts people at risk of mercury poisoning. Other ways of finding gold include panning, where you look for pure gold nuggets, and dusting large areas like streets. The top five producers of gold are China, South Africa, the United States, Australia and Peru.

Pie Chart of Top 5 Gold Producing Countries...



Uses: The primary use of gold is as a universal currency. The Federal Reserve Bank of New York stores 28 pound gold bars, each worth over three hundred thousand dollars. The bank is constantly transferring dozens of bars in transactions between clients. Gold is also used to make

trophies, cups, medals and jewelry. Special coins, like a Canadian Gold Maple Leaf coin, can contain up to 99.999% gold. Other uses of gold arise in electronics and medicine. Electrical connection points are often coated with a thin layer of gold to improve the connection. An example is the gold plating of headphone jacks to improve sound quality. Some critical electric wires in electric circuits are made of gold to improve the flow of electricity. Some rare luxury items like gold phones and laptops are made from it as well. For cosmetic purposes, people sometimes have gold facials to improve their skin.

Health: In medieval times gold was been prescribed as a medicine to cure ailments, since people believed that something so beautiful must be good for your health. Now gold alloys are used in dentistry, to fill cavities and make new teeth that claim to be better than porcelain teeth. The injection of small amounts of gold helps reduce the pain and swelling of rheumatoid arthritis. Gold is inert, so the consumption of gold flakes does no good or bad, and gold leaves the body unaltered. However gold flakes are put on some drinks to indicate wealth, though they have no effect on health.

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