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Scientists discover why gold doesn't 'rust' – 25th May 2026

Level 4

Gold has fascinated us for thousands of years. It is a symbol of elegance and wealth. Scientists have discovered why it never loses its shine. Researchers found that gold does not rust or change colour because of the structure of atoms on its surface. The atoms rearrange themselves into unique zigzag patterns. This minimizes reactions with oxygen. As a result, the metal does not become discoloured, even after thousands of years.

Gold is one of the softest metals. It can easily be hammered into thin sheets. Gold can be beaten to a thickness of 0.1 micrometres. This is one hundred times thinner than human hair. Its purity is why people have used it for jewellery and currency for more than 5,000 years. It is also used in electronics, dentistry, spacecraft technology, and medicine. Researchers say gold will remain a key part of many industrial processes.

Level 5

Gold has held an allure for thousands of years. This precious metal is a symbol of elegance and wealth. Scientists have discovered how it stays in such perfect condition and never loses its shine. Researchers in New Orleans found that gold does not rust or change colour because of the structure of atoms on its surface. A researcher said the atoms naturally rearrange themselves into unique zigzag patterns. This minimizes reactions with oxygen. As a result, the metal does not become discoloured, even after centuries of exposure to the elements.

A low level of reactivity to oxygen is called chemical nobility. Gold is the most noble metal. It is also one of the softest metals, which means it can easily be hammered into thin sheets. Gold can be beaten to a thickness of less than 0.1 micrometres. This is one hundred times thinner than a human hair. Its purity is why we have used gold for jewellery and currency for more than 5,000 years. It is also used in electronics, dentistry, spacecraft technology, and medicine. The researchers believe gold will continue to be a key part of many industrial applications.

Level 6

Gold has held an enduring allure for thousands of years. This precious metal has remained a symbol of elegance and wealth. Scientists have discovered how it stays in such pristine condition and never loses its shine. Researchers from Tulane University in New Orleans found that gold does not rust or change colour because of the structure of atoms on its surface. Dr Matthew Montemore wrote that the atoms naturally rearrange themselves into unique zigzag patterns that minimize chemical reactions with oxygen. He said: "This makes the gold much more resistant to oxidation." As a result, it does not become discoloured, even after centuries of exposure to the elements.

A low level of reactivity to oxygen is called chemical nobility. Gold is the most noble of all metals. Its resistance to bonding with oxygen means it maintains its shininess for thousands of years. It is also one of the most malleable metals, which means it can easily be hammered into thin sheets. Gold can be beaten to a thickness of less than 0.1 micrometres — a hundred times thinner than a human hair. Its pure form is why humans have used gold for jewellery and currency for more than 5,000 years. It also has important uses in electronics, dentistry, spacecraft technology, and medicine. The researchers believe it will continue to be integral in industrial applications.

