

# OSMIUM THE SUNSHINE ELEMENT



Precious metals have always been attractive to investors because of their intrinsic value. The pandemic has shown that in times of crisis people turn to investments that are familiar to them and that have been reliable for centuries. Gold, silver, platinum, and palladium are the first names that tend to come to mind. But did you know that there are eight precious metals? Though gold and silver have secured their place at the top of people's minds over the past centuries, there is one precious metal whose properties outshine those of its better-known siblings.

We are talking about osmium. Osmium is the last and rarest of the precious metals on the periodic table. It belongs to the platinum group metals and is mined together with platinum. Only about 2m<sup>3</sup> of mineable osmium are available in the earth's crust. This is 1,500 times less than the estimated volume of gold. To put osmium's rarity into perspective, it takes roughly 10,000 tons, or over a hundred truckloads filled to the brim with platinum ore to yield a mere 30 grams of osmium. If platinum and osmium are not separated directly from each other, the osmium remains forever as an impurity in the platinum.

In its raw form, the so-called "osmium sponge," osmium is toxic, which is why it has hardly been used industrially or otherwise. In 2014, however, following a 40-year effort, a Swiss laboratory succeeded in developing the crystallization process for osmium. The process changes the physical and chemical properties of osmium so that it becomes non-toxic, safe to handle, and absolutely stunning. In its crystalline form, the unique properties of the last precious metal come to light. Osmium has the highest density of all elements. It also has an incredible high value density; the value of a new sports car fits comfortably into a piece of osmium the size of a poker chip. The property of the highest density of all elements also means that osmium is unforgeable. It is not possible to falsify an osmium bar with a metal of a greater density, because there is no metal more dense than osmium.



Osmium is also unforgeable for another reason: the crystal structure of every piece of osmium is unique. This crystal structure can be scanned, labelled, and used as an identity in much the same way fingerprints can be used to confirm the identity of a person. These crystalline "fingerprints" are over 10,000 times more detailed than a biological fingerprint. Every piece of crystallized osmium goes through the process of certification in the German Osmium Institute near Munich, Germany. Each piece is measured, weighed, and scanned under high-resolution microscopes. The unique crystal structure acts as an identity that is then archived in the Osmium World Database, to which not only osmium owners but also customs authorities worldwide have access.

The database enables accurate authentication of each piece at any time. For the entry in the database, an eight-digit alphanumeric code is generated for each piece of crystalline osmium, known as the Osmium Identification Code (OIC). Entering this code allows you to call up your own data at any time and protects against theft. No piece of osmium that is stolen can simply be resold without presenting the OIC. The security of the database and a second code, the Owner Change Code (OCC), allow private sales from investor to investor.



Not only investors are fascinated by the "Sunshine Element". Osmium is also being used to produce exclusive pieces of jewelry. Its unique sparkle, resulting from osmium's complete and total reflection of all incoming sunlight, outshines diamonds by far. The introduction of osmium into the jewelry market has set off an exciting process: Osmium that finds its way into the jewelry market disappears from the investor market. Osmium is thus becoming increasingly scarce. If osmium becomes unavailable in a few years, a future phenomenon that has been nicknamed the "Osmium Big Bang" may occur. This refers to the interesting price trend that could emerge if the demand for crystalline osmium exceeds the availability of raw osmium. This makes the last precious metal above all one of the most exciting precious metals of our time.

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