

# finanzwelt

Sammelreihe zu Finanzthemen, Ausgabe 1

extra

**OSMIUM**

Spectacular and surrounded by myths

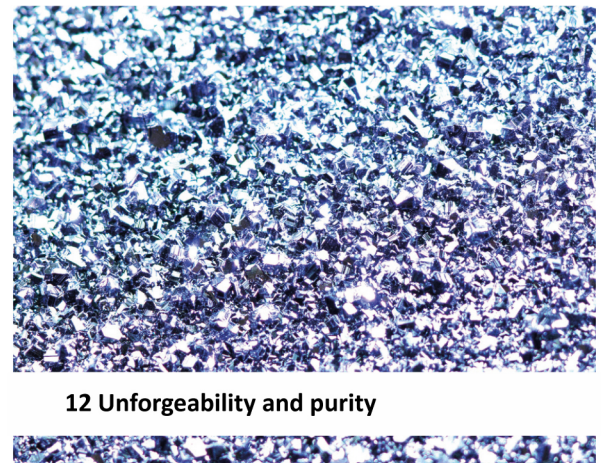




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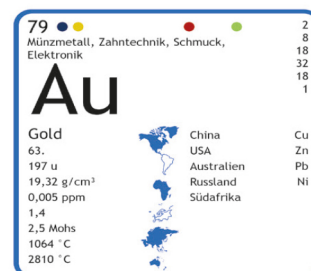
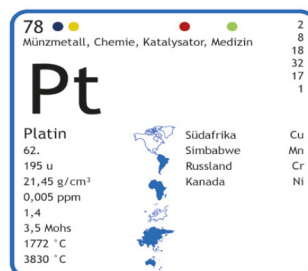
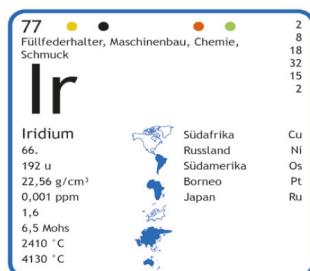
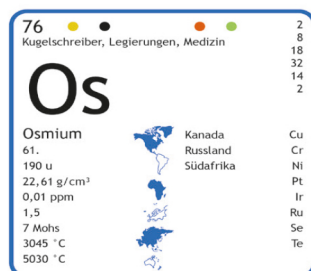
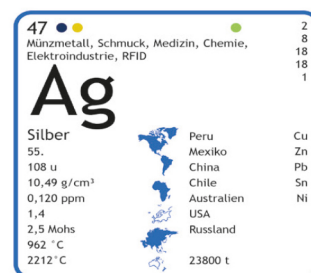
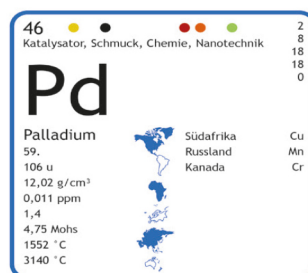
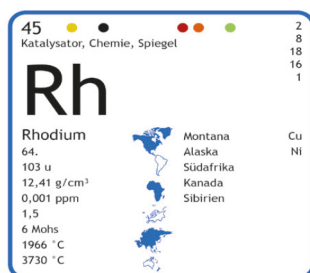
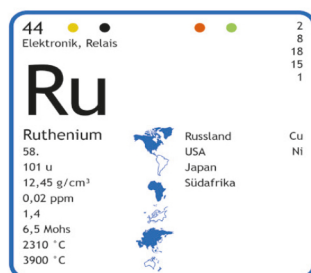
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# Overview

Osmium is the precious metal with the atomic number 76. It finalizes the series of market launches of the precious metals. Osmium is the most noble of the precious metals and captivates with its extraordinary appearance, which is also referred to as the Osmium-Sparkle.

Osmium possesses several physical properties that make it unique. To mention a few: The highest density of all materials and elements, the highest compression modulus of all materials, the best shielding capability against gamma radiation or the highest abrasion resistance of all materials. Among the refractory metals, it also holds a special position with one of the highest melting points and an exorbitantly high boiling point.

The economic numbers are also part of its extraordinary properties. For example, it has the highest value density of all non-radioactive elements. As of today, one can carry around 30,000 Euros in a single cubic centimeter in one's pocket. That is a massive number.

Osmium is the only completely unforgeable metal. Its crystal structure consists of millions of small and perfect mirrors with fixed alignments, allowing for the doubtless recognition of every crystalline Osmium piece. It is stored in the Osmium-World-Database, which is available to the customs authorities and contains every piece of crystalline Osmium with a high-resolution surface scan.

In its raw form, Osmium is a grey and inconspicuous powder that is also harmful to health. However, since

2013, raw Osmium can be crystallized in a similar way to how carbon transitions to diamonds. This makes it totally non-toxic and also transforms it into the most noble of the precious metals.

First and foremost, though, Osmium is simply beautiful. Its sparkle blinds spectators in sunlight, which is why it also known as the "sunshine element". Its color is of a slightly blueish luster and makes it easily identifiable even to non-experts with the naked eye.

The jewelry market treasures Osmium as replacement material for diamond pavé settings, which are expensive to set and have low value, making some jewelry pieces hard to sell nowadays. With the large Osmium surfaces, the intrinsic value of the Osmium inlay now also persists in jewelry.

The initial sales of crystalline Osmium, paired with the first watches and jewelry pieces featuring Osmium appearing on the market, gave sudden rise to Osmium's shining reputation as a new tangible asset. The metal boasts several superlatives for tangible asset investors. In America, Osmium has been nicknamed the "next generation metal." Many buyers have opted to invest in Osmium with the intention hold onto it, start a family, and ultimately sell it once the kids have reached their college degree years.

To put it another way:  
Osmium is a long-term tangible investment.



# The Osmium-Institutes and trade

The German „Osmium-Institut zur Inverkehrbringung und Zertifizierung von Osmium GmbH“ has the purpose to ensure a uniform conduct of trade and processing for crystalline Osmium and to advance this internationally. The creation of further institutes around the entire globe is the main focus. These institutes are already established on four continents.

Together with the Osmium-World-Council e.V., guidelines for trade, training and processing are set on annual symposia. Customs agreements for frictionless trade through the international network are negotiated and ratified internationally.

The German Osmium Institute can look back on a long history in metals trading, and emerged from the Commodity-Trade GmbH, which itself was created through a shell purchase a long time ago. Due to the previous work in the metals trade, an experienced team of experts who live and love the field already existed when the company was rebranded into the Osmium-Institute.

A new market brings new tasks and challenges. Osmium was no exception. The information had to be distributed, and the scientific handling of the metal had to be learned. At the same time, a trading network was to be implemented, for which tools and instruments had to be created. The tasks were undertaken by an internal team of experts and a row of advisers and scientists.

Today, certification and market introduction are performed internationally on this basis. Dealers are educated

The development goal of the international institutes is to be able to offer a person of contact to every client in every country who can give valid information in the native language.

Private persons who own or possess Osmium can rely on the Osmium-Institute as an information point that checks authenticity and answers questions on trade, export, import, transport, insurance and storage.

Therefore, the German Osmium-Institute not only has the main task of expanding the network of Osmium-Institutes abroad, but it also works together closely with the regional press.

[www.osmium-institute.com](http://www.osmium-institute.com).

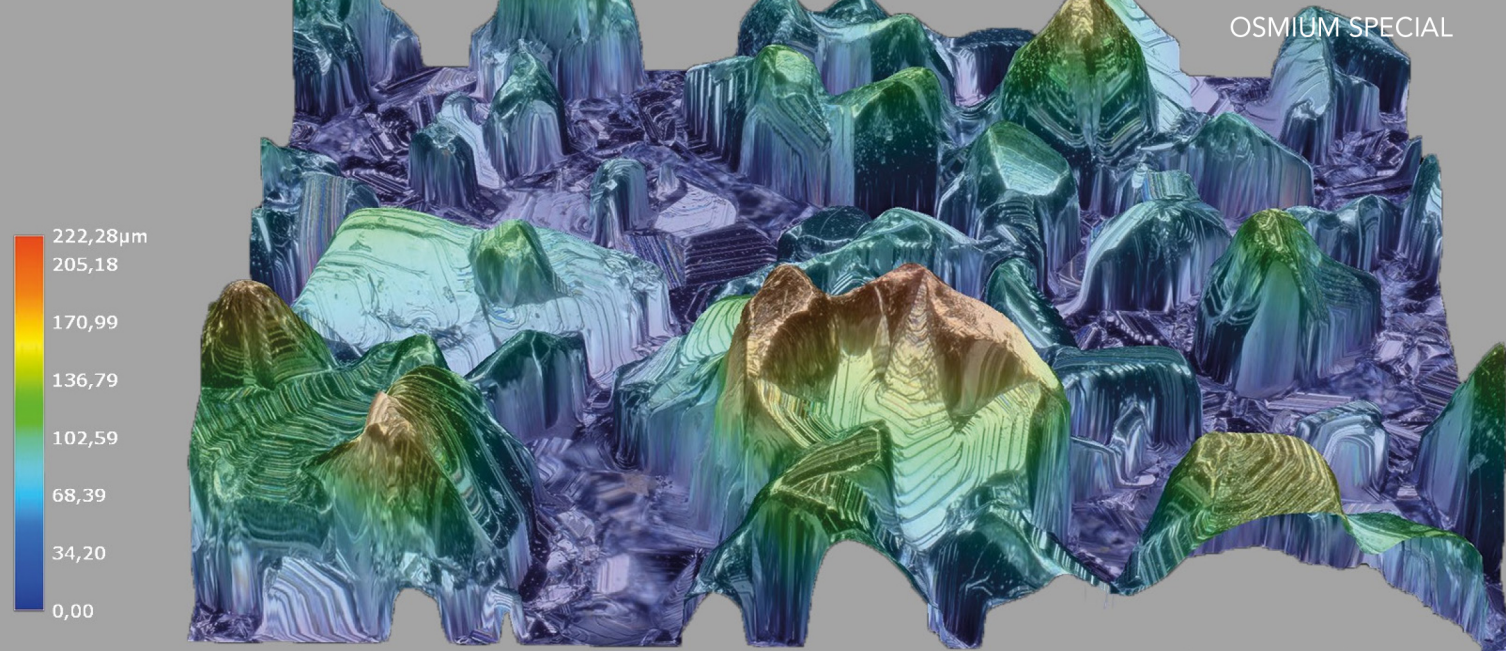
Osmium-Institutes participate in the trade only in regard to the first market placement. All trading tasks lie in the hands of dealers and wholesale partners, as well as their networks in already more than 30 countries around the globe.

Osmium-Institutes support the sales network with relevant information, trainings and contacts. They run many websites, build up information platforms, maintain an FAQ list and operate video channels. They also support social media work by providing media material.

The current research around Osmium makes work at the institutes especially interesting, so that new methods, new application areas, ever better surfaces and geometries are made possible.

Osmium stands at the very beginning  
of an exciting path





# Rare – rarer – Osmium

Osmium is not only the rarest precious metal, but the rarest non-radioactive element of all. Osmium is mined together with platinum. 10,000 tons of platinum ore contain roughly one ounce of Osmium. Also, separation of the metals is complex and expensive.

As soon as the production of platinum declines ever so slightly, Osmium will become even rarer, because there will never be a mine that extracts purely Osmium for economic reasons. Osmium will always remain a by-product. At the moment, the annual amount of Osmium mined slightly exceeds one ton. However, only about 100 kg of this is actually extracted and available for crystallization.

## An example to clarify this rarity:

- Obtaining one ounce of Osmium requires 250 fully loaded 40-ton trucks filled to the brim with platinum ore.
- This ounce fits into the volume of a single sugar cube. About nine cubic meters of Osmium are available within the earth's crust.
- Of which only two cubic meters can be realistically mined. This equates to about 44,000 kg of Osmium. This number is an estimate, meaning it can deviate highly in both directions. However, scientific and reliable studies do not exist yet.
- Therefore, the entire Osmium market would be worth roughly 60 billion US Dollars as of today. Should the prices rise further over the coming years, the entire market could expand to 200 billion US Dollars.

Shortage, application and rarity are reasons to own the element. The current success of Osmium is actually only due to the fact that it was possible to manufacture items that can be semi-finished products for the jewelry market. These semi-finished products are bought by tangible asset investors in order to be sold on to the processing industry at a later point. Any desired shapes can be cut from an Osmium Investors Disk.

For this reason, every piece of crystalline Osmium in the shape of a Disk or Bar should be seen as neutral. It does not depend on the taste in jewelry or the fashion of a particular year. It is processed only when the jewelry is actually due to be manufactured, not before. Bars and Disks are cut very inexpensively with a laser. Cutting costs are not part of the price calculation. Thus, Bars and Disks are introduced to the market at the gram price, which is publicly displayed on the financial websites. Only with more delicate, smaller pieces is cutting performed with the wire-EDM process in order to achieve highly precise cuts with tolerances close to one micrometer.

Since 2021, it is possible to exchange Bars and Disks free of charge at the Osmium-Institutes. This way, Bars can be acquired piece by piece and swapped into a Disk on any given day. No delivery fees or service fees apply.



## Products and packages, what for whom?

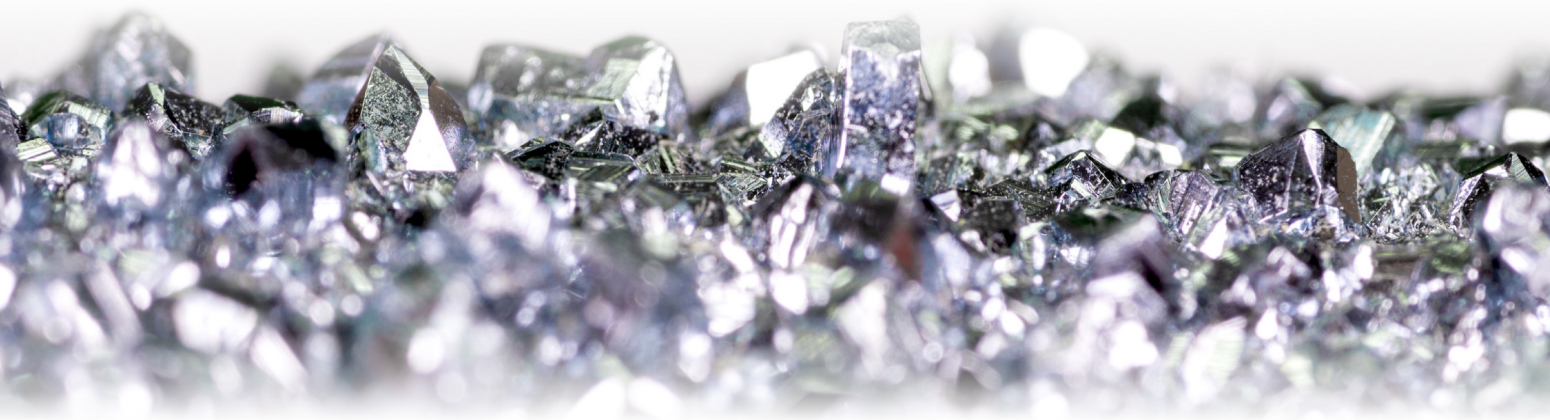
**The decision of which piece of Osmium one should buy, which semi-finished product is stored for the next generation or which piece of jewelry to purchase should depend on one important influencing factor: The shape of the semi-finished product!**

When Osmium is processed in the jewelry industry, by manufacturers, or simply at a small jeweler, the desired shape must be cut out from an Osmium Disk or Osmium Bar. During cutting, the shapes are placed in such a way that the least amount of waste is created. The Osmium resulting from the offcut must be newly distilled, which is a highly elaborate process. Osmium Diamonds, Osmium Stars or the new Triangles and Squares can be bought from around 50 Euros for very small tangible asset investments. Here, several dealers offer collector's boxes that contain, for instance, 40 Diamonds in vials, which can then be added and stocked

This code also enables the owner to take part in the Osmium-Marketplace, where he/she can offer his/her Osmium to wholesalers all over the world after a minimum holding period of six years.

### Certification and packaging

In the process, every Osmium piece is first submitted to an optical test for penetrations (holes the size of nanometers) and spikes (single, unusually high crystals). Material that doesn't pass the test is rerouted into recycling. In the next step, the cutting edges are examined for errors under the microscope. When this test is also passed, the pieces are scanned in high-resolution 3D. This creates a 3D height relief file as well as in an especially high-resolution 2D



piece by piece, month by month. So-called Starrows are priced at a range of 500 to 2500 Euros and act as a split bar, as they can be broken into single stars by hand. They are the equivalent to divisible bars of gold and silver. People who make the connection between asset investment and jewelry can of course also buy all other shapes. There is a great selection of shapes and inlays. However, if one aims to buy at the price per gram displayed online, the only options are Disks and Bars, as they don't include any processing costs. The larger their surfaces are in relation to their edge length, the easier it is to cut large shapes with little offcut.

In general, all tangible asset investors should aim for a holding period of ten to fifteen years when it comes to precious metals. Osmium is not a product for short-term, speculative trading. For resale, own channels and contacts can be used and the Osmium is reassigned using the Owner-Change-Code.

2D file of the surface. In addition, a compressed point cloud is created, which is the basis for electronic recognition from a large data pool, similar to how a fingerprint database works.

An Osmium-Identification-Code is assigned to certified pieces. The foil box, in which the Osmium is packaged, has a QR-code and the OIC imprinted on it. Bars and Disks also include an acrylic bar that features a laser engraving of the code. Osmium is shipped in a highly protective packaging box and comes with a USB drive containing additional information, a brochure in native language and several trinkets.



# Crystallization and sparkle

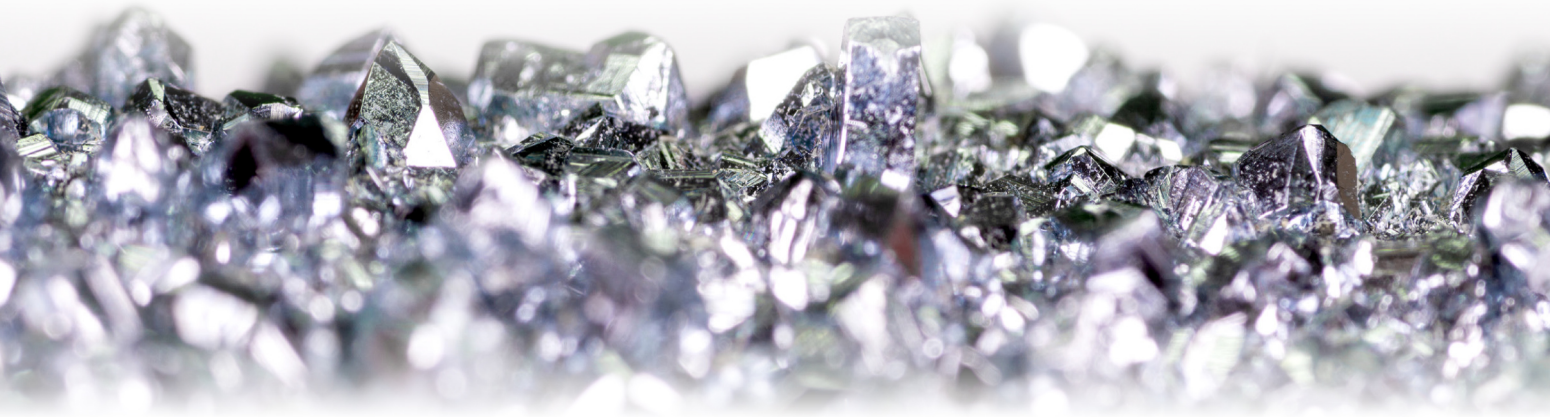
Jewelers and processing companies are increasingly using Osmium to create jewelry. The main reason for this is its uniquely beautiful crystal surface. The crystals form on flat structures with a sheet thickness of about one millimeter.

The shapes of inlays for jewelry can therefore be very creative. Only a few processing guidelines must be adhered to when setting it. Jewelers receive the guidelines for working with Osmium from the Osmium-Institutes.

When jewelry is being created, Osmium is fitted to the piece like a diamond or gemstone. Every jeweler or producer has the possibility to order almost any shape to use in jewelry. It is merely important to define the grade of crystallization, the sheet thickness and the edge widths of the inlays for further processing.

As a result, the underside is smooth and the upper side is covered with large crystals. Purity is always identical and does not depend on the size of the crystals.

Because the grade of crystallization depends on the sheet thickness of the Osmium, which in turn is bound by the crystallization time, smaller and larger crystals form accordingly. Small crystals lead to more of a twinkle. Thicker Disks are grown and used for more spectacular pieces with slightly larger crystals. They can also be seen at a greater distance in the sun, because sunlight is reflected in a perfect parallel way on the surface of every crystal and can therefore reach the human eye with great light intensity from far away.



The company Oslery GmbH is responsible for the processing that happens before the Osmium is fitted into jewelry. Here, inlays are planned and cut upon request. For the initial fitting of the shape, a stainless-steel template is always included in order to not damage the Osmium.

When one observes the crystalline structure of Osmium and turns it around, the underside is shiny and metallic, but not spectacular. For this reason, many people who encounter Osmium for the first time assume that the Osmium crystals are mounted on a different metal. This is not the case, because every Osmium-Disk starts to crystallize at many points on a large surface at the same time, which grow together during the crystallization process. This is why these crystals are very small and break up to the upside with continuing growth.

The sparkle, meaning the size of the reflective surfaces, is categorized in five levels. Level one has very small surfaces and is used for cutting letters and filigree structures that are even slightly flexible. Level five is very rough and used for large and extraordinary jewelry pieces. This sparkle can be seen by the human eye at distances up to 30 meters in sunlight, outperforming diamonds with ease.

Apart from the jewelry market, Osmium is generally used as a long-term tangible asset. This application can mainly be attributed to its unforgeability and value density. One can say that 90% of all crystalline Osmium disappears in the darkness of safes for a long time.



**When Osmium is purchased online, several simple rules apply:**

Osmium is sold by Osmium-Institutes and certified Osmium dealers only after pre-payment. If one wishes to know whether a dealer is certified, then a simple phone call to the hotline of the Osmium-Institutes is sufficient to receive this information.

Osmium is not only offered in single pieces, but also in packages and compilations with similar sparkle grades. These so-called Investor's Boxes are priced anywhere between 500 Euros per box and 10 Million Euros per box.

Some dealers offer these boxes with a so-called "overfill," which comes at no additional cost for the client. The Osmium-Institutes are available for post-certification and can act as a trustee when goods are delivered.

The payment methods for Osmium are interesting, as Osmium can not only be paid for in Euros, US Dollars, CHF, AUD and GBP, but also in Bitcoin. Payment in gold or other precious metals can also be made at Osmium-Institutes and its dealers.

The institutes exchange gold at the ask price, because the metal is usually forwarded straight to processing companies. Osmium-Institutes do not intend to make profit in regard to other precious metals. For this reason, exchanging goods for goods at high precious metals prices can be an interesting option.

# Payment method for Osmium

## Osmium vs. BTC & ETH

Osmium is so unique that investors like to compare it to the digital investment alternative Bitcoin. Osmium, as the last precious metal, and Bitcoin are establishing their reputations and are finding their way into the portfolios of investors. It is thus an opportune time to make a direct comparison between the two assets.

**Osmium can be bought with cryptocurrencies such as Bitcoin and Ethereum. This is an opportunity to find a good exit**

**point from Bitcoin at times when it is reaching ever new highs and some profit taking seems sensible.**

To be frank, the main driver for Bitcoin is the shadow market of the internet. Also, Bitcoin attracts mainly speculators and soldiers of fortune. The logic is captivating, because Bitcoin has created great fortunes. At the same time, owning Bitcoin is also hoping that the least possible number of other cryptocurrencies possible floods







The comparison between Osmium and Bitcoin emerged on the basis of the following similarities:

**Similarities:**

- Available amount is limited
- Can be bought online
- Absolute unforgeability
- Both offer the speculative chance of great price increases.

**But there are also great differences:**

- Osmium has intrinsic value, because it is a physical metal that is crystallized and stored in an actual safe.
- There can never be a “second Osmium”, because metals can’t be invented, programmed or simply created.
- No matter what the future will bring, no matter how the markets will develop, no matter how society evolves, physical Osmium won’t disappear, but will remain unchanged and eternal.

the market and that Bitcoin remains the number one cryptocurrency in the future, simply because it was the first. It has no intrinsic value, but is and remains pure speculation.

With new cryptocurrencies from Amazon, Apple, Banks and states being planned or already introduced, the speculative money of precisely these people who think they can assess the risks and potential rewards is finding new alternatives. Osmium, on the other hand, stands at the

very beginning of a new market. It was only introduced a few years ago as the last precious metal.

## Fact comparison

Osmium is a precious metal that shows interesting parallels to Bitcoin. However, Osmium has the advantage of being a commodity and physical merchandise. The metal’s price fluctuations are also much lower than the high volatility of Bitcoin.

## What makes the exchange interesting?

If you assess the current BTC and ETH prices as a good point to sell, then you can purchase Osmium within seconds and pay with your BTC or ETH.

**No exchange fees are charged for this.**





## Resale of Osmium

**In order to organize the resale of Osmium on the still not very liquid market, there is a market place where Osmium from private can be offered for sale.**

In order to use it, the owner of Osmium enters the OIC of one of his/her pieces on the site [www.osmium-identification-code.com](http://www.osmium-identification-code.com). In order to legitimize himself/herself as the rightful owner, the Owner-Change-Code has to be entered in the next step. This code is used when Osmium changes ownership and this transfer is recorded in the Osmium-World-Database.

Now, the intent to sell can be entered with a desired positive or negative spread. After the six-year lockup period, the offered Osmium becomes visible to dealers in the entire world. This not only applies to classic Osmium dealers, but also to gold and silver dealers who would also like to expand into Osmium. A match is then sought after between end clients and requests from dealers in order to initiate a sale.

But of course, Osmium can also be offered directly to jewelers, manufacturers or private tangible asset investors. For this purpose, the current certificates for one's own pieces are always available online.

Those who are not totally convinced when buying from private can make use of the post-certification of Osmium pieces by the Osmium-Institute, which costs 70 Euros.

It should be mentioned that there is Osmium in existence from the time before the Osmium-World-Database was created. Such pieces must certainly be post-certified before a sale or purchase. In these cases, post-certification and the assignment of an Osmium-Identification-Code are always free of charge.



# The Osmium price and the Osmium big bang

**The Osmium price is not a market price like the prices of gold and silver, but a spot price that originates in Switzerland.**

Apart from supply and demand of raw Osmium and crystalline Osmium, another influencing factor for the calculation of the price comes from additional data, such as the harvest rate. It indicates daily how much percent of the grown Osmium must be returned into recycling.

The quality criteria for crystalline Osmium were extremely increased a second time several years ago, because the watch industry and jewelry industry demanded a constant sparkle and do not accept crystallization spikes, which in conclusion led to more recycling and a strong price increase.

A reason to own Osmium is the observation that, after initial clients were from the field of well-informed jewelry makers, it is now becoming more mainstream.

Furthermore, processed Osmium almost completely disappears from the market. It is worn as jewelry or is stored securely at home. Osmium cannot be melted down like gold and silver without losing its crystal structure and therefore its feature for authentication.

Also, more and more objects of art containing Osmium are being built and sold on the market at extreme prices. The selection ranges from chessboards and dominos to musical instruments.

The Osmium market is supplied by a so-called “natural monopoly,” meaning that there is only one company in the world which can crystallize Osmium and only one institute that ensures the international market introduction.

The price development that is called the “big bang” could spark a special case in the market when non-availability occurs in the future. This scenario is actually possible, but hard to predict on a time scale. Clearly then, those who buy Osmium should not speculate, but have a longterm horizon.

So far, the creation of an Osmium exchange on which Osmium will be freely traded has not yet reached beyond the point of endeavor. Before this happens, questions to how traded Osmium is cut and delivered must be addressed.

Only an investor who owns a large stock of tradeable Osmium-Bars would be able to establish trade on an exchange in a sensible way.

It could be a good thing that the precious metal is currently changing ownership directly from one hand to another. One only needs to look at the decoupling of the Dollar from gold and the consequences that were brought upon us by today’s financial world and its inflationary environment as well as the general turning away from tangible assets.



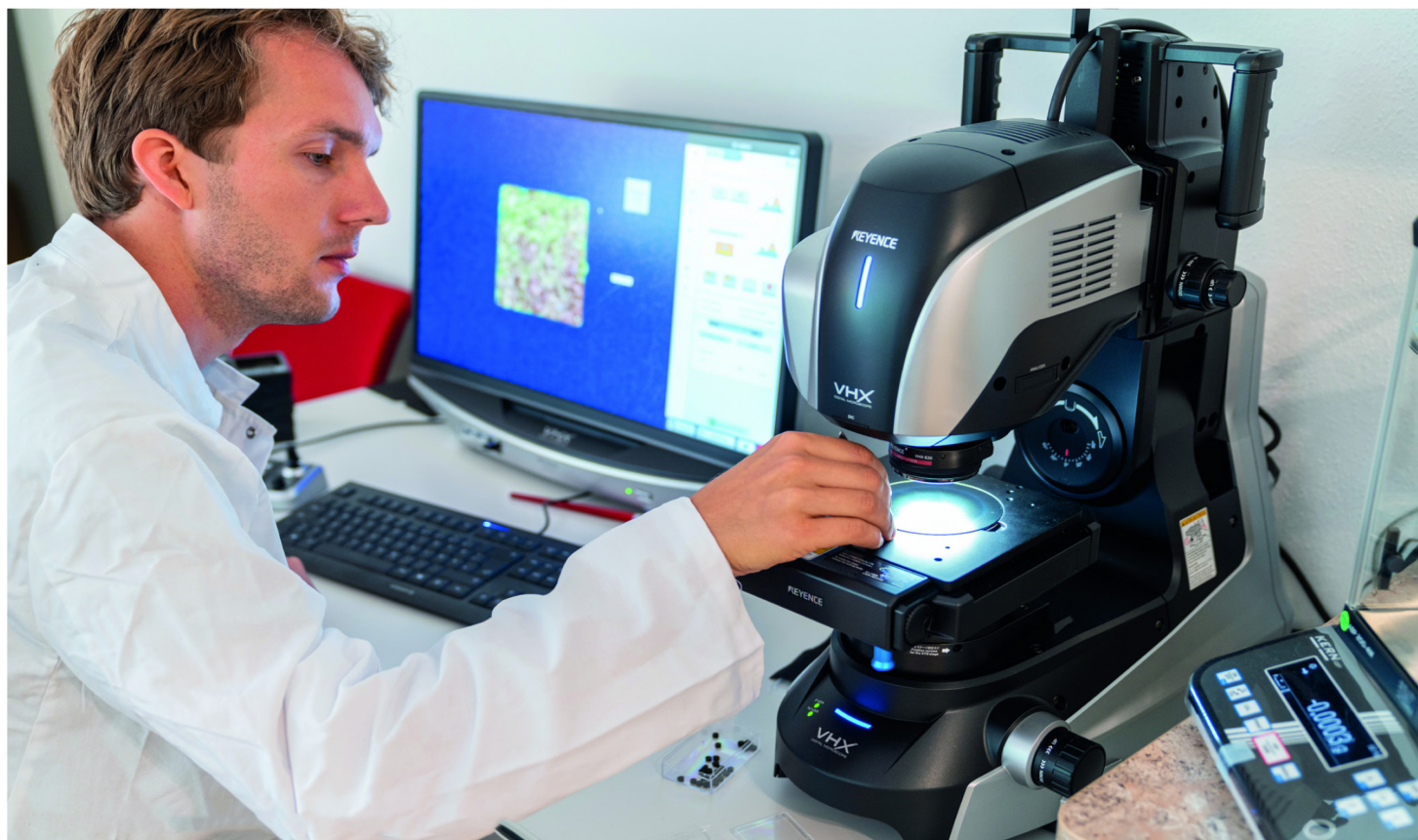
violin with osmium inlay

At the moment, an especially exclusive violin is being produced that will trump all previous ones.

In the case of Osmium, one is not merely talking about scarcity and the search for new deposits, but about a likely occurring non-availability, which has never occurred with any other element before.

However, the Osmium big bang is of course a theoretical observation where a high scarcity can lead to a shift in supply and demand. A great price development can take place if demand remains strong and unchanged.





## Unforgeability and purity

**Osmium is totally dimensionally stable in its crystalline appearance and cannot be reversely altered, be it chemically or mechanically. Among other aspects, this distinguishes it from the easily malleable gold. A striking advantage that arises from this property is the fact that it is impossible to forge or fake Osmium.**

Its crystalline structure is similar to a fingerprint and recognizable with extremely high certainty. Lines and their crossing points are used as a standard to identify fingerprints.

In this analogy, the unique fingerprint comprises every tip of an Osmium crystal, which is always inclined in three-dimensional space, has a certain angle when meeting the crystal within the ground plate and also features a clearly identifiable surface. Also, every crystal that emerges from the material has a defined length.

Even a normal, just three-millimeter-large Osmium Diamond has over 1000 of such macroscopic features. When observed microscopically, there are millions. The number of changeable sizes multiplies with larger surfaces of Osmium structures.

For this reason, the claim that Osmium is 10,000 times more secure than a fingerprint is an understatement, as the actual number is far higher. Exact numbers cannot be calculated, because when in doubt, ever smaller and more detailed structures on the Osmium piece can be examined, making the security almost infinitely scalable on high resolution scans.

When gold is counterfeited, a piece of metal with similar density is often inserted into the gold bar or the lesser metal is coated with a more or less thick layer of gold. There is no metal with the same density as Osmium.

This kind of forgery is only hypothetical anyway, because Osmium is delivered in very thin structures as Bars, so a real inner space to fill doesn't actually exist.

Raw Osmium is delivered with a purity of 99,9 %. During the preparation for crystallization, the purity is increased to between 99,999% and 99,9995%.

Osmium is not at all affected by corrosion, radiation or discoloration.



# Osmium on the internet

There are many websites and journalistic and scientific papers about crystalline Osmium. Those who are interested in Osmium and its history can order a small book by writing to the email address [info@osmium-institute.com](mailto:info@osmium-institute.com). It includes the main publication about Osmium in original writing. The small book is delivered free of charge.

It contains over 100 bibliographies about Osmium that can be traced on the internet by interested readers.

In addition, many valid internet platforms with information exist, as well as a new science book on Osmium.

Internet sites for quick information are [www.osmium.info](http://www.osmium.info), [www.osmium-landingpage.com](http://www.osmium-landingpage.com) or [www.oslery.com](http://www.oslery.com). Within the coming years, the sites of Wikipedia and other scientifically operating platforms will be corrected and completed thanks to further scientific studies.

One can view and purchase Osmium at [www.buy-osmium.com](http://www.buy-osmium.com) as single pieces or package offers from the Osmium-Institutes.

The hotline **+49 (0)89 744 88 88 88** employs multilingual staff of the Osmium-Institutes around the clock that are able to answer special questions concerning Osmium.

For more information, one can also visit the Osmium-World-Council website, at [www.osmium-world-council.com](http://www.osmium-world-council.com). It also features a large press review with news on Osmium.

## Information sources and legal assistance

Information can be obtained at the "Osmium Institut zur Inverkehrbringung und Zertifizierung von Osmium GmbH" in Germany.

Osmium offers are available at [www.buy-osmium.com](http://www.buy-osmium.com). Detailed requests may be made by email, phone or post.

In the case of court disputes, the Osmium-Institute offers legal assistance in the area of attempted forgery with falsified Osmium as raw Osmium, sintered Osmium or melting beads.

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Imprint

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# Osmium – trading forms

In general, Osmium can be bought in four different manifestations. They differ in their workability, their security against forgery and their toxicity. Many findings to these properties exist at the institutes. However, not all tests with sintered Osmium cubes and melted beads are completed. Particularly long-term tests concerning the harmlessness of cubes and melted beads do not exist yet.

Osmium in the form of its compounds is mostly supplied under sufficient safety conditions in the international chemical trade for its respective scientific use.

**Only crystalline Osmium should be used as an investment.**

## Manifestations

### Osmium in its raw form as sponge

Raw Osmium is a flammable powder with black-grey color that is transported under high safety precautions and packaging effort. Because of its fine spread it also forms Osmium tetroxide at room temperature. The presence of Osmium tetroxide in the air is noticeable even at low doses due to its onion-like odor. Even heavily diluted mixtures of the sublimate in laboratory air have caused health irritations and complaints occurring in the eyes and lung tissue. **Raw Osmium has no place in private hands!**

### Osmium in crystalline form

Crystalline Osmium has the highest density and a closed crystal composite with perfect surfaces. It is the last of the eight precious metals to be introduced to the market. According to studies of recent years, crystalline Osmium does not give off any Osmium tetroxide, even when exposed to pure Oxygen at temperatures of up to 400 Degrees Celsius. **Crystalline Osmium can be confirmed to be absolutely safe in regard to health.**

### Osmium as melted bead.

Osmium melted beads have nothing to do with beads or pearls, but are drops of the metal. They are formed to an irregular, spherical object under an electric arc. They are the size of a drop of water and have an irregular surface filled with pores. **For this reason, it seems likely that they also form Osmium tetroxide when exposed to air, just like raw Osmium.**

### Osmium as a cube

Osmium is sintered to Cubes for element collectors. This happens behind protective glass and below the melting point. Sintering leaves a condensed, grainy compound of the raw Osmium pores, which are partly closed in the sintering process, increasing the density in the process. Pores in the sintering process also suggest that, similar to melted beads, small amounts of Osmium tetroxide are formed when the cube is exposed to air-oxygen. Even the smallest amounts are harmful to health. **The long-term effects are not known and have not yet been researched in detail.**



# Economic meaning of the trading forms

## Osmium in raw form as sponge

Raw Osmium is the base material for forensic use and several scientific areas of application. There are no usages of industrial nature. Efforts have been made to tighten the terms of approval for its use via the REACH agreement in order to make the private or ineligible ownership of raw Osmium prosecutable.

## Osmium as melted bead

Osmium in the form of a melted bead is the easiest way to come into contact with forged Osmium online on Ebay and other platforms. Even X-ray fluorescence analysis requires very defined adjustments to be able to distinguish the Osmium from the very similar lines in the spectrum of iridium. This means that false positive results are likely to occur. The melted beads that actually do consist of Osmium are classified as harmful to health by the Osmium-Institutes until long-term studies in regard to contact with organic tissue and in the body exist.

## Osmium as a cube

Osmium should not be purchased in cubic form or other forms as an “investment”. Because Osmium cannot yet be technically grown in crystals that grow up to one closed cubic centimeter, raw Osmium is sintered into cubes for element collectors. This is partly done with a pure substance and partly with the admixture of transition metals, which improve the compound in the sintered metal, but dramatically decrease the purity of the raw Osmium at the same time.

Osmium can then be cleansed of these metals with extreme effort. Sintered cubes are absolutely unsuited for any kind of further processing. When they are disposed, the owner is more likely to face a fee than to receive a refund.

Most available Osmium cubes on the market are produced for element collectors. One can assume that, due to their high interest in chemistry, element collectors possess an adequate, specific chemical knowledge in order to handle Osmium cubes in the right way. They are most likely already familiar with dangerous substances, such as mercury or bromine.

Within a collection, sintered Osmium can be regarded as harmless when kept in responsible hands. Touching it with the hand should also not cause any direct health implications. However, it is advised to store a sintered Osmium cube in a tightly closed glass vessel which is not exposed to any high temperatures, so long as the room is not under protective gas. Opening a vessel for a longer time period should only be done under an air extractor and safety precautions must be upheld.

In the area of sintered Osmium cubes, there is no certainty or guarantee in regard to purity or the core of the cube. This statement should not suggest that honorable companies do not solely work with pure raw Osmium, but in the area of metals forgery there are generally many companies that operate in grey areas. They are often based abroad in Asia and sell internationally through the internet.

The sintering process makes it very easy to add a worthless metal powder with slightly differing density into the core.

Osmium-Institutes are already carrying out studies on the safety of sintered Osmium cubes that will be completed in the coming years. Should the studies lead to positive results, then Osmium cubes will also be certified by Osmium institutes and listed in the Osmium-World-Database, provided they come from handpicked manufacture that abides by ethical sourcing guidelines. If the purity of a cube is clearly proven, then the surface of the cube can also be added to the Osmium-World-Database under certain circumstances. As a substitute for sintered cubes, the Osmium-Institute offers 1 cm<sup>2</sup> flat bars made from crystalline Osmium for element collectors.

## Osmium in crystalline form

Osmium reaches its highest density in crystalline form and is completely harmless to health. The Osmium-Institutes can present long-term exposure tests of Osmium should they be needed in arbitrations and court cases.

These studies can be demanded by courts. At the same time, Osmium-Institutes can provide experts who can testify before court as appraisers if requested.

The most important property of crystalline Osmium for trade is the absolute unforgeability of its thin crystal structures. First indications of its authenticity are the reflecting colors that can be seen in the observable light spectrum as well as its heaviness.

Total assuredness over the authenticity can be achieved through the Osmium database, where every single piece of crystalline Osmium is stored with a high-resolution scan. The scans can be queried by owners and customs authorities.



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The eighth and last precious metal

