RADO
SWITZERLAND

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RADO
SWITZERLAND

HARD MATERIALS. SOFT FEELINGS.


RADO HIGH-TECH MATERIALS
A VISION TAKES SHAPE

A VISION

It all began with a vision unlike any other. There was nothing to see, only a mysterious belief in the power of imagination, our ability to envision a future, then to create it.
We began by imagining a surface without flaws. A surface of extreme purity and beauty. In the years to come we sought, and ultimately found, a way to transform this image into the tangible reality of a watch. The success of this extraordinary mission continues to inspire us as we seek to shape the substance and the surface of the future.

ESSENTIAL BEAUTY

Focused research in materials science and the innovative application of technology have enabled Rado to create incomparable high-tech materials. Our continuing exploration and creative use of these materials gives every Rado watch unique character and value.

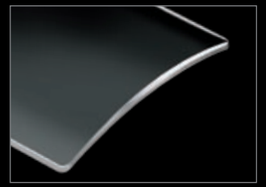
Brilliance. Transparency. Durability. Hardness. These values are inherent in our research and in the design and manufacture of our products – watches whose soft and silky surfaces reveal the essential and enduring beauty of Rado's high-tech hard materials.

HIGH-TECH CERAMICS

Innovative, durable and skin-friendly: introduced by Rado in 1986, high-tech ceramics have become our signature. In metallic or non-metallic colors, with a glossy, satin or decorated finish, they are the most versatile of our materials.

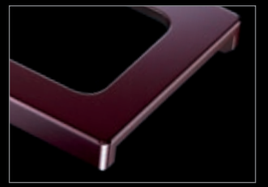
HIGH-TECH HARDMETAL

Pure, simple and extremely tough: we pioneered the use of this material by introducing the world's first scratchproof watch, the Original, in 1962. The success of this icon continues today.



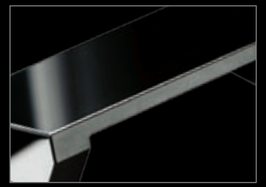
SAPPHIRE CRYSTAL

Perpetual transparency: -scratchproof high-tech sapphire crystal is used throughout our collection. The application of edge-to-edge crystal, metallization and the technology used to set the crystal are distinguishing features.



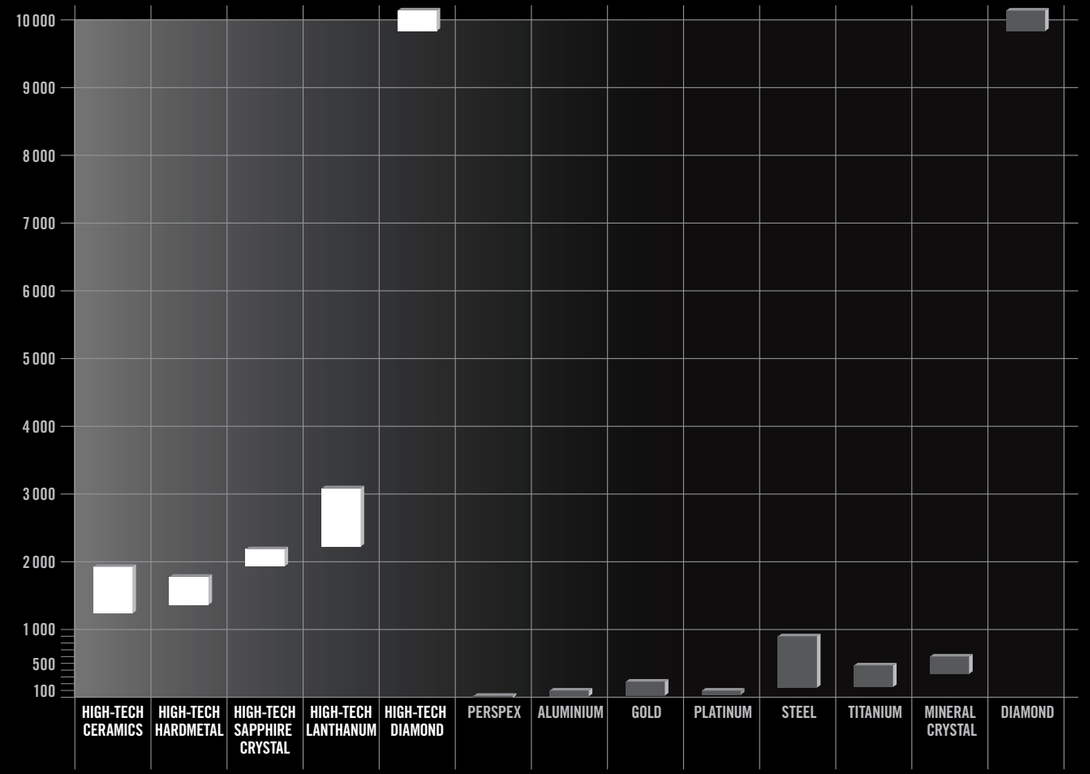
HIGH-TECH LANTHANUM

Rediscovering the strengths of nature: by combining unusual elements, we developed one of the hardest materials in existence – high-tech lanthanum, first used in 1997.



HIGH-TECH DIAMOND

Incomparable and enduring brilliance: the Rado high-tech diamond surface offers resistance equal to that of natural diamonds. Our invention and use of this surface has earned us an entry in the Guinness Book of Records for the world's hardest watch.

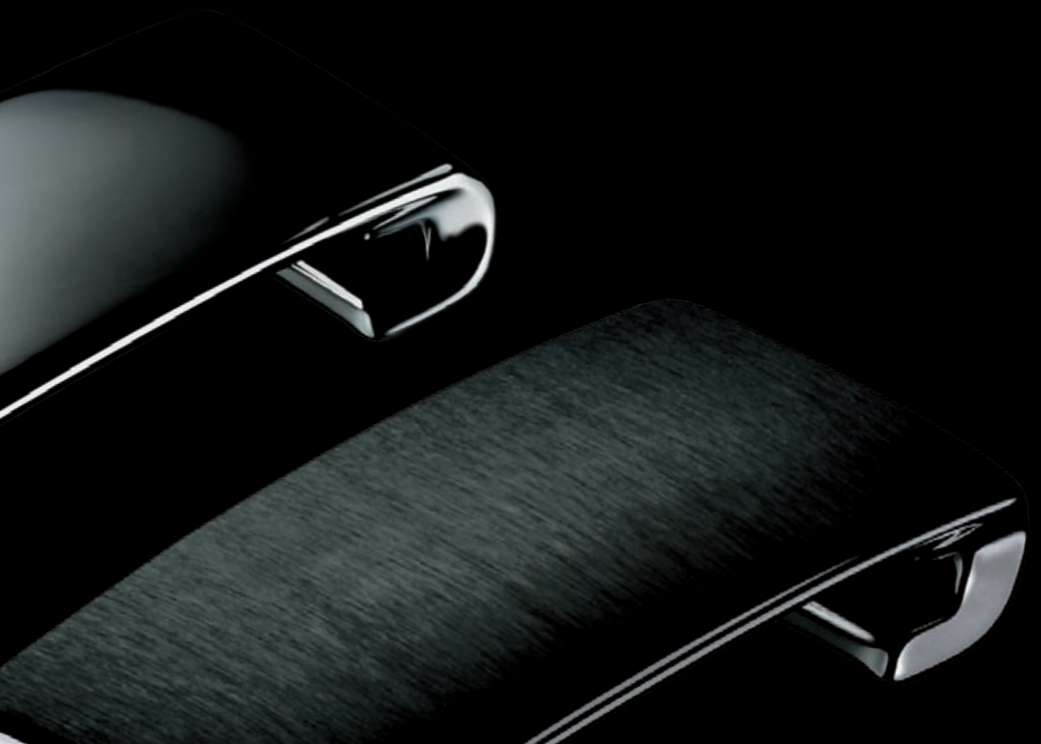


VICKERS HARDNESS SCALE

We focus on the future. We use hardmetal, high-tech ceramics and high-tech diamond. The durability and extreme hardness of these materials guarantee timeless beauty and brilliance.
The Vickers scale is used to indicate hardness: the higher a value, the greater the resistance to scratches.

Our materials commence at Vickers 1,200 - far higher than gold, steel or platinum. The top value of 10,000 is attributed only to natural diamonds and to the Rado high-tech diamond surface.

■ RADO HIGH-TECH MATERIALS
■ TRADITIONAL WATCH MATERIALS



HIGH-TECH CERAMICS 1,200 -1,900 VICKERS
HIGH-TECH BRUSHED CERAMICS 1,200 -1,900 VICKERS

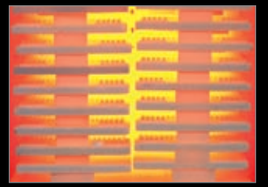
We make extreme demands of the materials we use. Hardness alone is not enough: innovation, durability, brilliance and skin-friendliness are equally essential. In the mid-1980s, Rado engineers discovered a substance that fulfilled all these requirements, but had not been used in the watch industry before: high-tech ceramics.

Extremely resistant, it had been applied in medicine, Formula-1 motor racing, and on the heat shield that enabled the Space Shuttle's re-entry into the earth's atmosphere. Our pioneering application of this material led to the iconic Rado Ceramica watch.

We developed a great variety of colors: apart from black, white, gold and platinum, we currently offer high-tech ceramic watches in pink, azure, burgundy, blue and metallic purple as well.

The raw material is ultra-fine zirconium-oxide or titanium-carbide powder with a grain size of about 1/1000th mm, approximately one fiftieth of the diameter of a human hair.

The powder is homogenized and granulated. A process known as Ceramics Injection Molding (CIM) enables us to produce well-defined and highly complex shapes, such as case or bracelet elements.



The pre-shaped forms are heated in a special furnace at a temperature of 1,450°C. This process is known as “sintering” and results in the full density and absolute hardness of all high-tech ceramic elements.

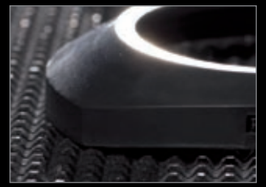
Depending on the surface desired, the individual elements are polished, given a satin finish or further decorated.

HARDMETAL
1,400 -1,700 VICKERS

In 1962, only five years after the brand was launched, we astounded the world with a revolutionary product: the world's first scratch-proof watch.
Initially used as a tool in industry, hardmetal makes it possible for drills to penetrate the earth's crust without suffering any damage.

We introduced it to the watch industry, where hardmetal easily resists the hazards of everyday use – unlike steel, gold or platinum, materials that soon deteriorate and become marked when worn.

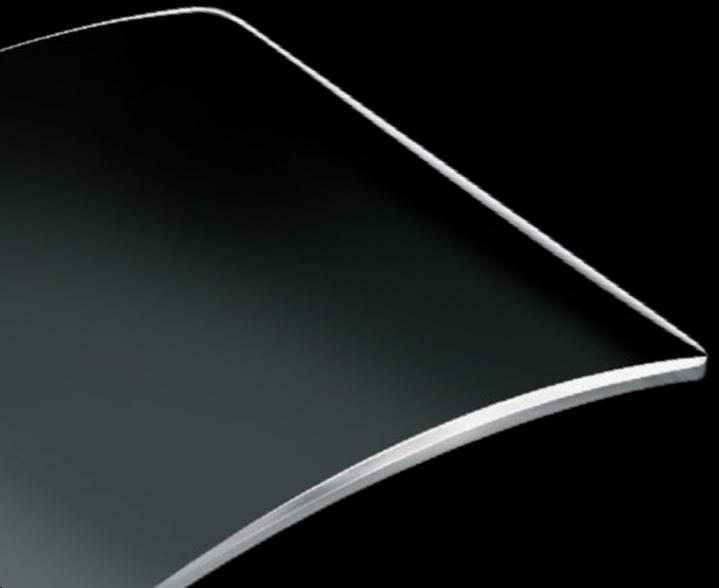
Tungsten-carbide powder is the basis of this legendary Rado material.



At a pressure of 1,000 bar, the tungsten-carbide powder is pressed by injection molding into blanks. In a vacuum furnace at a temperature of 1,450°C the blanks are sintered and take on their final form and hardness.

Numerous additional steps follow before we finally create the unmistakable Rado brilliance by polishing the surface with diamond powder.

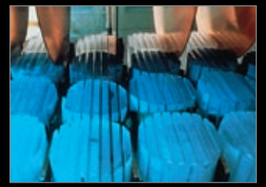
In addition to the natural steel color of hardmetal we offer highly resistant coatings in gold and black.



SAPPHIRE CRYSTAL
1,900 - 2,200 VICKERS

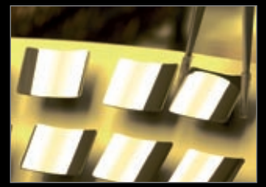
A key design feature of all Rado watches is our use of high-tech sapphire crystals. Convex, dome-shaped, or faceted, they emphasize the dynamic profiles of our watches, extending the seamless continuity of bracelet and case to the glass.
Our innovative use of metallization on the surface of the crystal lends additional distinction.

Sapphire is manufactured industrially, based on ultra-fine aluminum-oxide powder crystallized in a Verneuil furnace at 2,150°C to a single sapphire nugget.

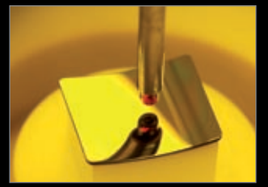


Each nugget is cut into disks with diamond saws, then calibrated, faceted and polished in a lengthy process lasting approximately four weeks.

Rado's characteristic metallization – the application of a thin material layer onto the crystal – is a highly complex process.



Metallization takes place in vacuum chambers, where the sapphire crystals are treated with a vaporization source.



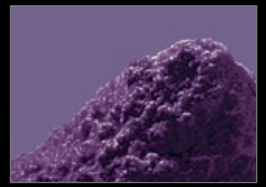
The vaporized metallic layer covers the entire underside of the crystal and is subsequently structured in a photolithographic process.

The sapphire crystal and the decoration are significant defining elements of our design language.

HIGH-TECH LANTHANUM
2,300 - 3,200 VICKERS

The Lantano watch takes its name from a metal found in Western Australia, Central Africa and Brazil and used in the development of Rado high-tech lanthanum. With only 200 pieces made, they are indeed rare beauties.
With a hardness value of up to 3,200 on the Vickers scale, high-tech lanthanum is one of the hardest materials in existence.

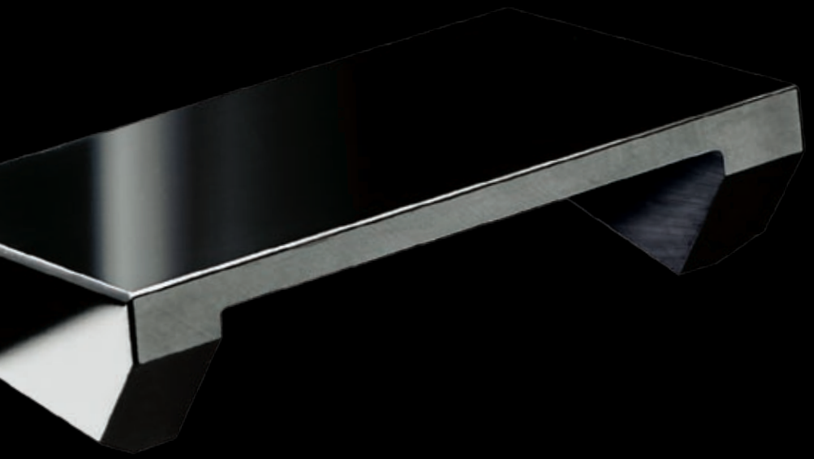
In numerous processes, the raw material is cleaned, refined and pulverized.



Rado's high-tech lanthanum is created by mixing lanthanum boride with boron carbide. In a further processing stage, blanks are subjected to extremely high pressure and brought to their final form in the sintering furnace at temperatures over 1,600°C.

The final polishing with diamonds, which takes several hours, gives Rado high-tech lanthanum its incomparable, mysterious radiance and fascinating, deep purple color.

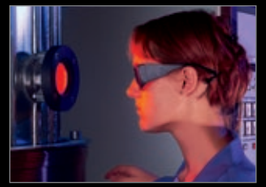
PERFECTION
FROM SUBSTANCE TO SURFACE



HIGH-TECH DIAMOND
10,000 VICKERS

For years our dream was to create the ultimate value in hardness: 10,000 Vickers, the standard set by natural diamonds.
Today, after decades of research, we use advanced nano-technology to create our high-tech diamond surface – and the hardest watch in the world.

We succeeded in transforming carbon into nanocrystalline diamond.



By recreating the atmosphere of the planet Jupiter in a furnace, we made it possible for a chemical mixture to create and accelerate the growth of particles into a thin coating of high-tech diamonds on hard-metal components.

The result: absolute hardness.

RADO. SHAPING THE FUTURE.

The word impossible does not exist. At the core of our philosophy, this attitude has repeatedly found expression in Rado's remarkable discoveries and innovations.

Forever ahead of our time, we seek to transform our passion for incomparable surfaces into the ultimate expression of contemporary design.

HARD, NOT INDESTRUCTIBLE. Although our high-tech materials are resistant to scratches, Rado watches must be treated with care. They should not be dropped, and sharp knocks should be avoided. If hit hard enough, the materials may break.