

Quartz [SiO₂]

Quartz is predominately silica, which is a very common component of the earth's crust. Although not rare in the geological world, many collectors find its color and crystal forms to be very alluring. Most quartz specimens take on the color of the chemical constituents in their environments. 'Cactus' quartz, as it is known, is formed by a quartz crystal being encrusted by a second generation of smaller crystals growing upon the original faces. The two phases of crystal growth give the specimen a cactus-like appearance, as seen in the middle specimen below.



Pyrite on Quartz OR30



Quartz var. Amethyst P12



Quartz var. Amethyst P2

Smoky Quartz

Smoky quartz is a brown to black variety of quartz found in many locations around the world. The dark color is due to aluminum and irradiation-induced color centers. Most specimens are dichroic or pleochroic in which light at different polarizations are variably absorbed, thereby causing different colorations. A rarer, dark black variety of smoky quartz is known as morion. In morion, all light is reflected, absorbed, scattered and/or refracted, causing the specimen to appear completely black. Quartz with inclusions of organic matter or dark minerals is not considered to be smoky quartz. OR25



Smoky Quartz OR25



Smoky Quartz PK33

Rutilated Quartz

Rutilated quartz refers to a quartz crystal with hair-like rutile inclusions. Rutile is a major ore of titanium, and often forms needle-like crystals that have a hardness of 6. The difference in hardness between the rutile and quartz (hardness of ~7) causes most specimens of rutile to have uneven growths with visible pits on its surfaces. Smooth, fully-formed crystal faces are uncommon, and many specimens are cut and polished into small novelty stones. Although large, aesthetically appealing euhedral crystals such as this one exists, they are quite rare. OR18



Rutilated Quartz OR18

Quartz in Dolomite

“Herkimer diamonds” is the name given to doubly terminated quartz crystals originally found in Herkimer County, New York, and the surrounding areas. Double terminated quartz is a result of crystals growing in cavities (vugs) with little to no contact with the host rock. Discovered in 500-million-year-old, Cambrian-aged dolostone, Herkimer diamonds are notable for being mistaken as diamonds in the early 20th century. Unfortunately, the value and rarity of quartz does not rival that of actual diamonds, although larger specimens (up to 6 inches) have been faceted in jewelry and sold for comparable prices. OR9



Quartz in Dolomite OR9

Quartz coated with Titanium

Although manmade, the titanium-coated quartz is a brilliant example of scientific ingenuity. The process involves the treatment of quartz crystals with titanium, accomplished through an electrostatic process. The titanium is exposed to high temperatures and then, with quartz, is placed into a vacuum. Opposite charges and high temperatures are applied to the titanium and quartz. The titanium-charged particles adhere to the faces of the quartz crystal, and the two minerals are permanently fused together. OR33



Quartz coated with Titanium OR33



Quartz G10



Amethyst P2



Amethyst P12



Quartz B154



Citrine PK7