

Cool Green, Hot Source

BY DIANA JARRET, G.G., R.M.V.

The ultimate dream stone for gem enthusiasts would be distinctive and attractive, available in large carat sizes, eye clean, and inexpensive. Too good to be true? Not if you're on the trail of prasiolite.

This diaphanous gemstone seemingly appeared from nowhere and became further mystifying because of its many names: vermarine, mint quartz, green amethyst, lime citrine, and the self-explanatory green quartz.

Some Web sites declare all prasiolite to be enhanced quartz. In fact, geologists occasionally find modest deposits of naturally occurring transparent green quartz near hot springs. One might speculate that those mineral waters are also iron-rich. The small size of the alluvial rough, combined with the nearly inaccessible locations, renders these extraordinary finds unsuitable for commercial use. In addition to the hot spring material, the Smithsonian Institute has crystal fragments of natural green quartz from Brazil dating to 1884. At the Tucson gem and mineral shows this year, rare gem specialist K & K International of Falls Church, Virginia, brought faceted ovals of natural green quartz acquired from Brazil more than 35 years ago.

Commercial prasiolite results from certain quartz having undergone irradiation (sometimes natural) and then heat treatment in the presence of iron, transforming the mineral into a cool leek or celadon green.

The impression made is that prasiolite is the new kid on the block, but actually quartz has been heated to produce this color since the 1950s. The term "greened amethyst" appeared 30 years ago in *American Mineralogist* Volume 62, 1977, in an article titled "A Unique Green Quartz."

The recent crop of prasiolite, however, appears to have been irradiated. According to Mauricio Favacho of the Empresa Brasileira de Radiacoes Ltda., or Embrarad — a gamma radiation facility based in São Paulo — the company has been producing prasiolite by the ton since 2003. Along with "oro verde," the green-gold quartz that has a decidedly yellow hue to its green, prasiolite is one of their best sellers.

"It's a different kind of quartz," Favacho says. They add nothing to the rough during the irradiation process, instead relying on the internal composition of the quartz. "In this case, the element that is responsible for the color is iron."

Exceptionally clean crystal rough is selected for this process to assure even color distribution. "The darkest material after treatment is originally white or very light amethyst from Uruguay and Rio Grande do Sul state in Brazil," says Marcelo Bernardes of Brazilian gem wholesaler and jewelry manufacturer Manoel Bernardes. "All of the other material comes from different mines in Minas Gerais and Bahia. Today, there are maybe 15 different sources for the quartz that treats into the green color, generating different levels of color saturation and overtones."

Some dealers claim to have bought prasiolite found in Arizona, but Brazil is certainly the main channel for the material. While not their priciest export, Brazilian suppliers vying for greater presence in the global gem market make prasiolite a priority.

The abundant material is often polished into large stones with complex cuts to force the best color from the pale rough. Briolette, concave, and checkerboard



Prasiolite and prasiolite necklace in 14K gold by JewelMak Fine Jewelry.



Prasiolite earrings by Judith Ripka; photo courtesy Judith Ripka Companies Inc.

crown cuts are favored, intensifying the hue, which may appear pallid in emerald or baguette cuts. Exceptions to this are seen in finished goods featuring several prasiolites together or paired with other green or pastel-colored stones.

Current wholesale prices range from \$3 to \$6 per carat for well-cut stones of good color. In Tucson, a Brazilian buyer at an American vendor's booth remarked that it's cheaper to buy prasiolite in the United States than in Brazil, citing wholesale prices of \$7 to \$8 per carat for small quantities there. Cut goods sold in bulk with lower color saturation can run as little as \$1 per carat.

As expected with enhanced gemstones, a range of colors and tones are found in prasiolite. Only 30 percent of each batch of quartz undergoing this treatment transforms into the cool green color. Without proper identification, some of it



Prasiolite has joined amethyst (top) and citrine (bottom left) as a jewelry staple. Rings from the *Olivia* line; photo courtesy Judith Ripka Companies Inc.

might be mistaken for green beryl or a light-toned green tourmaline. Dealers using specific gravity testing in the field for gem identification know the similar specific gravity of beryl (2.6-2.9) and quartz (2.65) could lead to a case of mistaken identity. However, prasiolite's refractive index verifies it as quartz, reading 1.54-1.55 on the refractive index, and making a separation conclusive.

Customarily, ubiquitous low-cost stones are relegated to inexpensive "bridge" jewelry, a parallel universe between costume and fine goods. However, prasiolite has become the muse to fanciful designers who showcase it in their ingenious stylings — which is why one sees a stone that sold for \$3 per carat turning up in \$5,000 designer goods. With custom jewelers adding prasiolite to their repertoire, wholesale prices are bound to reflect this fondness.

When buying prasiolite, keep in mind that well-proportioned, classic cuts fare better over time. As for color, the darker the better is the rule. Examine stones from the pavilion side for even color distribution and for clarity. Given current color trends, this stone has huge market potential in the short term, and may stand the test of time to become a perennial favorite. ○