

# NINA BASHAROVA

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PANORAMA OF THE PICTURESQUE BEARTOOTH MOUNTAIN RANGE, WITH THE STILLWATER MINE, ONE OF THE WORLD'S LARGEST PRODUCERS OF PALLADIUM, AT THE CENTER RIGHT. (PHOTO: PHOTOGRAPHIC SOLUTIONS)

(at press time). In the case of these two metals, however, cost is not a function of rarity, but depends on supply and demand. While palladium is used in many different industries, it is mined in only a few places in the world. Thus, any interruption in supply can have a dramatic impact on its price. An example of this occurred in 2000, when deliveries by the world's largest palladium supplier, Russia's Norilsk nickel mine, became unreliable. Because the palladium market was so tight at that time, supply problems resulted in huge price surges. By early 2001, the metal had reached \$1090 per ounce. But even now, if prices were to surge to platinum levels, Scott Kay affirms that "the lighter weight of palladium will always give it a cost advantage."

### Production issues

One major reason that palladium did not catch on in a larger way much sooner has to do with production issues. Theresa Frye, president of Oregon-based TechForm Advanced Casting Technology (techformcasting.com), explains, "Palladium has two main characteristics that create challenges in casting. First, palladium oxidizes at temperatures between 600°C and 800°C. This means that casting must be done carefully under vacuum and/or argon cover to protect the melt from contamination. Second, palladium is very sensitive to sprue techniques, generally requiring a higher number of sprues to adequately feed the casting when compared to either platinum or gold. However, if strict adherence to process control is observed, it is possible to consistently produce high quality castings in palladium."

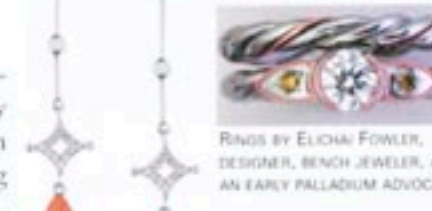
TechForm provides palladium (and other metal) casting primarily for small to medium-sized designers and custom retailers. "I believe this particular group has been quick to embrace palladium for several reasons," adds Frye. "They have the ability to try out a new metal immediately, without having to get project funding and management approval. They are also very enthusiastic about palladium's working properties, its price point, and most importantly, the problems that are solved by replacing white gold with a superior product. Many of the jewelers who use our services say that making palladium sales is easy once the customer understands the metal and its benefits. Many have also reported that customers are actually walking into their stores and requesting palladium."

Pure palladium melts at 1,552°C, and current Pd950 grade alloys have slightly lower melting ranges, according to Stewart Grice, mill and refining director for Virginia-based Hoover & Strong (hooverandstrong.com). "This melt point is significantly higher than karat gold and approaches those of platinum alloys, underscoring the need to pay attention to the temperature capability of the casting equipment for processing palladium," he says. "Investment casters who are experienced with platinum already have the basic production resources necessary to work with palladium. Still, knowledge about, and experience with, palladium go a long way."

While casting presents a range of challenges, fabrication poses fewer issues says Daniel Ballard, national sales manager for California-based Precious Metals West (preciousmetalswest.com). "The metal offers significant design freedom. Complex shapes are easy to create because you can pull tighter curves and push palladium to greater angles than nickel white gold alloys and most yellow gold alloys. Palladium tolerates being worked to a high degree without going brittle. At the end of a work session, you can have a more sophisticated design than is possible with many other metals," explains Ballard. "Also, palladium draws down well and can be pulled through a die easily. After work hardening, annealing the metal will quickly return its malleability." →



HAND-ENGRAVED PALLADIUM RING BY STEECE HERMANSON.



RINGS BY ELICHA FOWLER, DESIGNER, BENCH JEWELER, AND AN EARLY PALLADIUM ADVOCATE.



PALLADIUM BANDS BY COGE DESIGN GROUP.



PALLADIUM "POD" RING BY NINA BASHAROVA.



"KALPA" TIMEPIECE BY PARMIGIANI FLEURBAEY.



Collection: Pod, 2006  
Rings(Paladium, Black Diamonds)