HOOVER & STRONG'S 22K GRANULATION ALLOY

By Jack Gualtieri

When *AJM* editor Tina Wojtkielo asked if I'd be interested in testing Hoover & Strong's new 22k yellow gold granulation alloy, I thought the project sounded like fun and told her I'd be happy to do it. As a jeweler who specializes in the somewhat esoteric technique of granulation—fusing tiny gold spheres to the surface of a similar gold alloy—I was glad to hear that a major metal supplier was putting out an alloy specifically designed for the technique. It will give more jewelers an opportunity to try granulation by just making a phone call and placing an order, instead of trying to mix their own alloy.

But granulation isn't a technique most people can perfect overnight. It requires heating the metal to much higher temperatures than those used in soldering, which, when done incorrectly, can result in surface reticulation. Since most pieces of granulated jewelry require multiple heating steps to reach the finished product, the odds of reticulating the surface and ruining the piece are multiplied. For this reason, consistency in the performance of the metal is key to quality.

Eager to put this new alloy to the test, I called Hoover & Strong and placed my order. I wanted to make a basic 6 mm round bezel with one base wire and a row of large granules. To create the bezel, I needed sheet and wire; the latter is used for both the base wire and the granules. I ordered the sheet thicker than necessary for the bezel so I could see how it fared after a few passes through my rolling mill. I also ordered a larger gauge of wire than I needed so I could test how it pulled through my draw plate.

When the metal arrived, I took it over to the shop and got to work. Both pieces passed the first test with flying colors: The sheet milled nicely, with no cracks or waving, and the wire pulled smoothly. Once I got the metal to the right thickness and gauge, I annealed it. I had no problem bringing it up to a nice glow and holding it at that temperature for a while. At one point, I gradually took a piece of sheet to a high temperature, just to see how fast it would reticulate and melt. Surprisingly, it did not happen quickly. The sheet glowed bright but did not break down until I turned up the heat and really closed in on it with my torch. I did this because it's important to test the parameters of the metal. Knowing how far I could push the metal before it would reticulate and end up in the scrap bin, I was ready to make the bezel.

I calculated the length and height of the piece of sheet needed to make the bezel and shaped it with pliers. I butted the two ends together and ran a saw blade through the seam so the ends would fit perfectly. (The seam has to be tight to fuse together cleanly.) Using an air/acetelyne torch on a dense charcoal block, I fused the seam. Once I got it up to temperature, it took a little longer to fuse than my usual alloy—a 22k Kulicke-Stark alloy that I make. However, I didn't feel that this was a negative attribute: It's a more forgiving quality in the metal that will benefit goldsmiths new to fusion and granulation. The end result was a seam that cleaned up quickly with a 400 grit sanding stick.

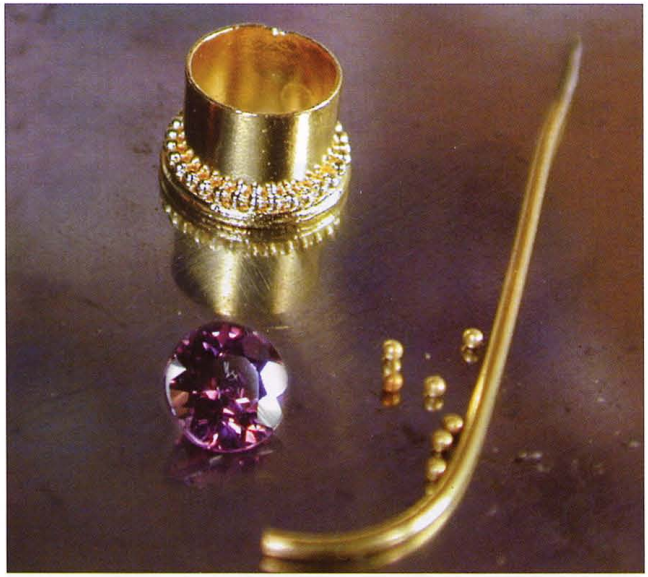
Next, I made the base wire by wrapping it around the bezel, sawing it to length, and fusing the ends together. I fit the base wire to the bezel and held it up to the light to check for gaps. (Like the seam, this too needs to be a tight fit.) Once again, fusion took longer than it normally does, but the pieces fused together cleanly.

I then pickled the bezel and polished the piece to a final rouge. It's important to polish the surface before granulating, as it is difficult to clean up around the granules after they are fused in place.

PHOTOS BY JACK GUALTIERI.

I made a batch of equally sized wire snippets, balled them up into granules on my charcoal block, and sifted them to filter out any odd sizes. I arranged them around the bezel in a single row on the base wire and adhered them with Klyre-fire enameling glue. After the glue dried, I fused the granules to the bezel and base wire. And once again, the fusion was a success.

After a final pickling and a light polish, the bezel had a clean surface and crisp granule definition. More importantly, it passed my final two tests: It withstood a 20 minute shake in the ultrasonic, and each granule held on tight while I picked at it with my fingernail. The fingernail test is essential to ensure that each tiny gold sphere is fused to the bezel, the base wire, and its neighbors.



As I have stated, Hoover & Strong's 22k granulation alloy takes a little more time to fuse than the 22k Kulicke-Stark alloy I make, but I am accustomed to that alloy and its habits after many years of use. For someone beginning to do fusion and granulation, the little extra time will come in handy. Also, the consistency of the metal should make for good surface quality when employed by goldsmiths of all skill levels.

It's important to remember that granulation is a special technique that requires a lot of patience, precision, and very good torch control. I have been granulating for over 10 years, and I still melt a piece every now and then. But I'm not saying this to scare you. If you've ever been curious about trying this technique but didn't want to mix your own granulation alloy, there's no better time then the present. And lucky for you, it just got a little easier with this new alloy from Hoover & Strong. ◆

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