

How to use Opticon 224 Resin

By Wes Lingerfelt

Opticon is a useful product in the process of making better spheres for display. It was invented for sealing fractured gemstones, especially emeralds from Columbia in a different process than is described here. As such it was required by government regulation to contain an ingredient that would glow under a black light. This is how one determines if a gemstone has been repaired.

Opticon 224 resin is cured by heat. There are many ways to heat a stone in the process of sealing it but I prefer hot air from a table top heater that puts out about 1500 BTU's. Never use an oven or kitchen stove to heat your stone. You will lose it when you open the oven door. This knowledge comes from personal experience. The amount of heat is important as I have experienced a Citrine from South America that exploded due to being too hot (It most likely had a high content of water inside it). That means opal is a very dangerous rock to use this process on. Most rocks however, can withstand the heat with no problem. You need to heat the rock to the point that you will drop it immediately if picked up in the bare hand. This will take about an hour under the heat source described above. During this process any excess oil from the lapidary saw will become very thin and extrude from the rock. I clean this off with acetone and a paper towel before applying the Opticon.

Making spheres involves the process of cutting a square block and then cutting all the corners off leaving a faceted round ball. Using diamond cups suitable to the size of ball you then grind all the flat spots off. At this point you must decide if the ball requires sealing with Opticon. Not all spheres require this process; just the ones that have ugly holes, cracks or fissures that detract from the appearance of a nice polished sphere. Also, some types of rock will always need the process performed on it to stop the condition of "Self Scratching". Some crystalline structures have the tendency of pulling microscopic

crystals from the surface as they are not well formed or bound into the surface. Once pulled from the surface they become scratch makers. A case in point is Obsidian. It almost always needs sealing to get a good polish.

Step 1 is to heat the rock to the necessary level to cause the Opticon to run into and over the surface of the stone (30 minutes to 1 hour). Opticon becomes very thin in the initial application before it begins to cure. After it begins to cure it becomes tacky at first then hardens into a very hard and polishable surface. It stays clear and will not yellow over time. Make sure the stone is clean and free of as much oil as can be attained before applying the Opticon.

Step 2 is to find a small plastic cup to mix the Opticon and hardener into. I use a small bottle for each container of resin and hardener that allows me to drip small drops into the mixing cup. I use 8 drops of resin to 1 drop of hardener. The instructions that come with the Opticon recommend 10 drops to one but over time I've found 8 to 1 works better. I then use an ice-cream stick or small wood paddle to spread the Opticon over the entire surface of the ball. Use the center of a shipping or masking tape dispenser or paper towel roll to hold the sphere in front of the heater. Completely coat the sphere on the top surface as far down as you can trying not to let too much run down on to the paper roll stand. You must completely cover the visible surface to assure you have sealed all the invisible cracks that are present in the stone. They are there BELIEVE ME!

Step 3 is to let the stone stand in front of the heater for about an hour or until the stone is no longer tacky. You then pick up the stone (I use welders gloves) and turn it over on the stand in front of the heater. Cover the stone once more with Opticon as described above. Let it stand until the Opticon is no longer tack in front of the heater. Turn off the heater and let the ball sit for 24 hours before starting the smoothing and polishing steps.

During the process of coating the ball you may want to fill ugly holes or large open cracks with filler. There

are several ways to accomplish this and achieve a good final result. For instance, using the dried grinds from the first step of grinding sometimes makes for good filler material. I prefer powdered quartz as it looks more natural than ground up colored rock. Also, the dried grinds will change color in the Opticon and will not match the color of the original rock (I do not know why this occurs). The finer the powdered quartz the better as any large pieces or flakes will be very obvious in the final polish.

After the stone has cured overnight (or up to 24 hours) you are ready to begin the smoothing and polishing steps. I start at 200 mesh diamond pads followed by 500, 1000, 3000 and sometimes use 8000 mesh pads. Most of the time 3000 achieves the necessary polish but 8000 will generally give it an additional pop. If you spend too long on the 200 or 500 mesh steps you may find you will need to repeat the Opticon process as you have ground all the Opticon you applied completely away and opened new cracks and fissures. This means you need to be very careful not to walk away and leave the machine running for long time periods in the early stages.

