

## Torch Firing PMC

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For the record, it has always been possible to fire PMC with a torch. The hard part was finding someone to hold a torch for two hours! With the creation of PMC+ and PMC3, torch firing becomes a viable option. Both of these products have firing schedules that are significantly shorter and at a lower temperature than original PMC. Now we can make solid silver jewelry in only a few minutes.

Jewelers use a variety of torches, all of which deliver more heat than is needed to fire PMC. People with experience in metalwork and a good idea for heat colors will be able to fire PMC+ and PMC3 with any traditional torch. If a person is buying a torch specifically to fire PM, I recommend a small self-contained butane torch. These compact torches are relatively inexpensive (\$25-50) and are available from craft suppliers and jewelry supply companies. In fact I even saw one at a kitchen supply company where it was sold to caramelize *crème brûlée*. The torches are sold empty and filled (and refilled as needed) from a canister of butane that can be bought from the same suppliers, grocery stores or tobacconists. Note that the standard torch is rated at 2000° F so it can melt PMC. Some manufacturers sell a modified unit that heats only to 1650° F.

### Torch Firing Process

1. Allow the work to dry overnight or drive off moisture with a hairdryer, coffee warmer or in a slow oven. Torch firing is not recommended for large items.
2. Place the work on a soldering block or fire brick, which is in turn set on either a fireproof surface or something you don't mind being singed (like a piece of plywood). If you are working on the kitchen counter and the piece rolls off the block you don't want to scar the countertop.
3. Light the torch and hold it so the flame is nearly vertical with the tip of the cone about 3/4" away from the work. Within a minute, the piece will be enveloped in a soft flame as the binder burns away. The flame will soon go out by itself. Within another minute, the piece will start to glow red. Continue heating until this becomes a bright and luminous color. At this point, glance at a clock.
4. Hold this color as uniformly as possible. For PMC+, hold it for at least 5 minutes. For PMC3, hold the temperature for about 2 minutes. When the time is up, turn off the torch and allow the piece to cool at least until the red color is gone, at which point it can be quenched in water. Or not—there is not advantage to quenching, other than the fact that you can examine the piece immediately.

### Educate Yourself

Here's a test I recommend to anyone who intends to fire with a torch. It takes a few minutes and requires the investment of a dollar or two in PMC, but it will go a long way toward understanding the process and building confidence. Pull off a pea-sized bit of PMC+ or PMC3, split it in half, and roll out two small rods. Follow the instructions above with one added step. After the complete cycle, move the rods apart on the brick so you can focus on one of them. Concentrate the flame on this rod in an effort to melt it, which might be possible even with the regulated torch. You'll see a bright mercury-like skin form on the piece and the red color will become even brighter. The edges will start to curl and the PMC will be drawn up into a ball.

Make a mental note of what you saw. This way you'll know the signs of melting, and you can withdraw the torch in time before damaging a piece you care about. To complete the experiment, allow the other rod to cool and test it by bending, filing, burnishing, and polishing. This will confirm that, sure enough, torch firing really works!