An Introduction to the Tools & Techniques for Working with Precious Metal Clay®
7th Edition

Text by Tim McCreight, revised by Rio Grande.

“Locked Inside” by Dina Alexander
2008 Saul Bell Design Award
First Place, PMC®
What is PMC®?

Precious Metal Clay® represents a dramatic development in the handling of precious metals. PMC® consists of microscopic particles of silver or gold (note: PMC PRO™ is a silver alloy) suspended in an organic binder to create a pliable material with a consistency similar to modeling clay. PMC can be worked with the fingers and with simple, inexpensive tools to create a vast range of forms, surfaces and textures that would be unattainable or laborious with traditional techniques.

When PMC is heated to a high temperature, the organic binder burns away and the metal particles fuse, forming solid metal that can be sanded, soldered, oxidized, patinated and polished like conventional material. This booklet describes some of the techniques devised for PMC and will guide you through your first firing experience.

History

Scientists working at the Mitsubishi Materials Special Products division in Sanda, Japan, developed Precious Metal Clay®. In the early 1990s, after several years of experimentation, PMC® received its first patents. Since then, many additional materials have joined this family of products. The principal ingredient in PMC is silver or gold, reduced to tiny particles smaller than 20 microns in size. These flakes are so fine that it would take as many as 25 of them clumped together to equal a grain of salt.

PMC also consists of water and an organic binder. During the drying and firing process, the water and binder burn away completely and what remains can be hallmarked as .999 pure silver (90/10 for PMC PRO™) or 22-karat gold. Dried out or unwanted PMC objects can be refined just like conventional precious metal.
How Does PMC® Work?

Under the proper conditions, particles of metal fuse together in the same way that droplets of water run together to make larger puddles. In the case of metals, oxides (tarnish) that form naturally on most metals prevent this from happening. PMC®, PMC+™ and PMC3™ solve this problem by using precious metals in their pure states. These do not readily oxidize, so even at the high temperatures needed to induce fusion, they remain free of coatings. PMC PRO™ employs a unique 90/10 alloy and must be fired in activated carbon, but the result is the same: precious metal in a clay form of incredible malleability and versatility.

Form

Using very simple tools and your own talented fingers, PMC® is rolled, pressed, squeezed, layered and molded into a desired shape. More clay can be added, removed and refined as you go, making this a spontaneous and liberating process.

Fire

After it has dried completely, the PMC® object is taken to a specific temperature (as described on page 11). This burns off the binder, which dissipates as a harmless smoke. At this point in the firing process, the PMC is a fragile, porous, metallic husk. At higher temperatures, the particles sinter together and form a solid, dense metal. Depending on the type of PMC, this can take from 10 minutes to two hours.

Finish

After firing, the object can be handled like any other gold or silver item—it can be soldered, burnished, buffed, tumbled and plated to achieve any finish you desire.
Four Kinds of Silver PMC®

We are pleased to offer four kinds of silver PMC®, each with its own unique properties. Experiment to see which variety (or combination) is your favorite.

**PMC PRO™**

PMC PRO is the latest metal clay, with a unique silver alloy formula (90% silver and 10% copper) and a longer working time than its PMC siblings. It also boasts the greatest strength and fires in just 60 minutes at 1400°F in activated carbon. Mark PMC PRO pieces as "90/10."

**Pure Silver PMC3™**

PMC3 is dense and still fires fast, but it also fires at remarkably low temperatures. Three distinct firing options provide a range that makes PMC3 especially useful for co-firing glass, findings and some stones.

**Pure Silver PMC+™**

With less binder, PMC+ has a shrinkage rate of 12–15%. PMC+ offers several distinct firing options, two of them at lower temperatures than original PMC®. PMC+ can go from clay to metal in as little as 10 minutes. This material is about 10% more expensive than original PMC because of the increased ratio of metal to binder.

**Original PMC® Silver**

The original still has the best working properties. It shrinks 28%, so textures and details are enhanced after firing. PMC objects remain slightly porous even after proper firing. They are lighter than the same size object made of wrought silver, but its strength is reduced.

**Gold Options With PMC®**

**22KY PMC® Gold**

PMC Gold is similar to PMC3™ in its particle structure and size, its finished strength, and its shrinkage characteristics. PMC Gold, now 22KY, offers you four firing options: 1650°F for at least 10 min.; 1560°F for at least 30 min.; 1380°F for at least 60 min.; or 1290°F for at least 90 min.

**Aura 22™ Gold**

This remarkable liquid contains 91.6% pure gold and 8.4% pure silver and can be painted with a brush onto fine silver designs. It is especially effective on heavily textured surfaces or in difficult-to-accent areas. Once applied, simply fire the Aura 22-accented piece on a hot plate and burnish thoroughly to fuse the metals.
Available in Several Forms!

Unlike some competing brands of metal clay, PMC® brand is packaged by the weight of the precious metal only, not the weight of the binder and water. When you buy a 28-gram lump of silver PMC, you get 28 grams of pure silver.

Lump PMC®

Available in four different silver formulas and one gold formula. This is the most popular form because of its versatility.

Silver PMC3™ and PMC+™ Syringe

This PMC3 and PMC+ material is specially formulated to be pressed through the narrow tip of a syringe. If you have ever decorated a cake, you can master the skills to work with this form of PMC®.

Silver PMC3™ Slip

Slip is a thick slurry of PMC3 used to fill joints, adhere parts and create luscious frosting-like surfaces.

Silver PMC+™ Paper

Artists have found this thin leathery sheet useful for origami, weaving, braiding and creating drapery-like effects.

Important!

PMC® has a strong adverse reaction to contact with aluminum. Do not use aluminum tools or allow your PMC to come into contact with any aluminum object.

<table>
<thead>
<tr>
<th>Workability</th>
<th>PMC PRO™</th>
<th>PMC3™</th>
<th>PMC+™</th>
<th>PMC®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrinkage</td>
<td>Best</td>
<td>Great</td>
<td>OK</td>
<td>Good</td>
</tr>
<tr>
<td>15–20%</td>
<td>10–15%</td>
<td>10–15%</td>
<td>25–30%</td>
<td></td>
</tr>
<tr>
<td>Firing Temp/Time</td>
<td>1400° for 60 mins.</td>
<td>1290° for 10 min.</td>
<td>1650° for 10 min.</td>
<td>1650° for 2 hours</td>
</tr>
<tr>
<td></td>
<td>1200° for 20 min.</td>
<td>1560° for 20 min.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1110° for 45 min.</td>
<td></td>
<td>1470° for 30 min.</td>
<td></td>
</tr>
<tr>
<td>Strength</td>
<td>Best</td>
<td>Good</td>
<td>Good</td>
<td>Least</td>
</tr>
<tr>
<td>Maximum Strength</td>
<td>1400° for 60 mins.</td>
<td>1650° for 2 hours</td>
<td>1650° for 2 hours</td>
<td>1650° for 2 hours</td>
</tr>
<tr>
<td>Firing Temp/Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Suggested Hand Tools

One of the great things about PMC® is that you can find tools to use on this material all around the house, not only in the studio or shop but in the kitchen, the office, the toy box or the yard. And if that isn’t enough, there are a growing number of specialty tools made just for PMC: stamp patterns, stone-setting tools, Embeddables® findings and more.

Basic Tools

Sheets of plastic or glass make terrific and portable work surfaces. Rio also carries a PMC® tool kit with everything a beginner needs (order #111-411). Most PMC artists start with:

- PMC rehydration kit: order#111-401
- plastic tube (to use as a roller)
- needle tool
- rubber-tipped color shaper
- toothpicks
- paintbrush
- straws (for making holes)
- knife
- ruler

Specialty Tools

As your interest grows, you’ll find yourself adding more tools to your collection. In addition to your own discoveries, you might find these useful:

- tweezers
- magnifiers
- rubber stamps
- small chisels
- files
- plastic design templates
- tissue blade
- stiff flat brush (for smoothing)
- texture plates
- playing cards (spacers for thickness)
- manicure sanding boards
- blacking patina solution
Basic Techniques

 PMC® is packed in an air-tight foil pouch to preserve its freshness. Use this package or a good-quality plastic wrap (or both) to keep your clay moist. It is good practice to take out only what you will use within a few minutes and to add a few drops of water to the lump at the end of each work session.

 A few drops of olive oil on your palms before starting helps keep the clay moist.

 To make sheets, use a roller as you would for pie crusts and two equal stacks of playing cards on each side of the lump to make a uniform thickness (Rio carries a handy set of thickness guides: order #111-569).

 A knife, X-Acto® blade, needle tool or playing card edge can be used to both cut pieces and lift them off the sheet.

 To join parts, set them close together and apply a drop of water with a pointed brush. Let the water penetrate for a few seconds, then press the parts together.

 To achieve rich textures, press PMC against a rough surface or roll the surface over a sheet of PMC. Even simple objects like bottle caps leave interesting trails, and leaves, bark and wood offer many possibilities.

 One way to make a bail for a pendant is to roll out a slender rod and form it into a loop. Cut off the ends to make a solid attachment, moisten with water and press it into position.

 Most work is done with moist clay, but it is also possible to work with PMC after it has dried. Create the general idea of the form you want, then refine it with carving tools or files when the PMC is leather-hard. Use slip to join parts at this stage.

 If the PMC becomes dry as you work, spray or brush on a little water (not too much!) and cover it with plastic wrap for a few minutes to allow it to rehydrate. If you add too much water, just set the PMC aside, loosely wrapped, and allow it to dry out.

 Allow the work to air-dry, or speed up the process with a warming plate, hair dryer, heater or slow oven. Set the work on a screen, a wad of paper towel or a piece of foam rubber to allow air to reach all sides.
Using Slip & Paste

PMC® slip comes pre-loaded in ready-to-use disposable plastic syringes. Snip off the tip of a syringe with scissors to create the size nozzle you need (remember to allow for shrinkage). Using the syringe opens enormous design possibilities; here are just a few:

Decorating
Use the syringe to make trails that curl and loop around your designs. These make the surface more active and interesting, particularly when the work is blackened and polished.

Setting Stones
Press a lab-grown gemstone (see page 12) into place and trap it with a network of threads from the syringe.

Making a Net
On a sheet of plastic, squeeze out a series of lines about 1/4” apart. Cross this with a similar series at a right angle. Return to the first direction and lay threads of PMC® between the first lines, then repeat in the second direction. The effect is a woven appearance that adds texture.

Making Repairs
Because of its strength and handy dispenser, PMC+™ and PMC3™ slip is suitable for attaching parts, repairing breaks and reinforcing delicate areas such as the point where a loop attaches to a pendant.

Transitioning
Use paste to fill between elements when creating an organic effect.

Using with Ceramics
Both slip and paste bond to glazed or unglazed ceramics. Be certain the surface is clean and apply the PMC® firmly enough that there are no air spaces beneath it.
Making Molds & More

PMC® lends itself easily to working with molds you make yourself or with commercially made molds. Molds allow for repeated elements and the production of multiples. Hollow forms allow your work to be light and help your PMC go further. Here are some ideas for molds:

Soap & Wax Blocks
A simple way to get started is to carve a pattern into a bar of soap. Press PMC® into the depression, peel it away, and you have a molded form. If you don’t like the result, re-work the carving and try again. Need a dozen? It’s a simple matter of repetition.

Rubber Molds, Stamps & Texture Sheets
To make your own molds, buy a two-part silicone mold compound (such as Rio Cold Mold™, shown at right). Most molds do not need lubrication but if the PMC® sticks, spray lightly with an aerosol cooking oil such as PAM® or Cool Slip (order #111-448).

Rio also sells a robust line of Dynasty stamps and texture sheets with a wide variety of designs.

Hollow Forms
Make beads and other hollow forms easily with PMC®. Start by making a core from a material that will burn away completely. Examples include paper clay, tissue, bread and cereals. Coat these with PMC, decorate and fire. In some cases the cores will smoke as they burn off so you will want to vent this from your shop or work area.

Cork clay is another material great for creating hollow forms, shapes and textures with PMC+. Simply shape or form cork clay and allow it to dry completely—if not allowed to dry completely, steam may form when the piece is fired and may damage the PMC. Once cork clay is dry, coat it with PMC and fire. The cork material burns out during firing.

Use PMC® with Pro-Form Vac-U-Form.

Rio Cold Mold™ compound, 1 oz. #701-042

Combine equal parts into a flexible putty to create your mold.

Thin slip with water and apply with a brush to the bead core. Dry and fire.

PMC® vessel by Celie Fago
Firing Equipment

PMC® can be fired in any device that will sustain the required temperature for the recommended time. These range from inexpensive torches and furnaces that need constant attention to programmable kilns that are fully automatic. When used correctly, any of these devices will yield an equally good result. Beyond reliability and convenience, there is no reason to prefer one method over another.

Kilns

Small electric kilns are ideal for PMC® and can also be used for glass, ceramics and burn-out. A programmable unit allows you to set the ramp (heating up) time, the holding temperature and the holding time at this temperature. Large ceramic kilns are not recommended for PMC because heat fluctuates from one area to another inside the kiln.

Torches

Any torch customarily used for jewelry work is suitable for firing PMC™ and PMC3™. Set the work on a soldering block in a dimly lit space and heat the PMC clay until it glows red. Hold at a clear red for the prescribed time (see table below). A butane torch with a special nozzle reduces the risk of overheating.

Other Firing Options

The introduction of PMC3™ opened the door to a wide range of firing devices such as traditional kilns, our Ultralite Kiln (see left) and some camp stoves.

<table>
<thead>
<tr>
<th>AT THIS TEMPERATURE:</th>
<th>THIS IS HAPPENING TO FINE SILVER PMC®:</th>
</tr>
</thead>
<tbody>
<tr>
<td>500°F (260°C)</td>
<td>Binder burns away; some flame, smoke and odor</td>
</tr>
<tr>
<td>1000°F (538°C)</td>
<td>PMC® starts to show dim red glow</td>
</tr>
<tr>
<td>1100°F (593°C)</td>
<td>Clear red color; threshold for early sintering</td>
</tr>
<tr>
<td>1200°F (650°C)</td>
<td>Glowing red color (20 minutes here completely fires PMC3™)</td>
</tr>
<tr>
<td>1300°F (700°C)</td>
<td>Bright red color (10 minutes here completely fires PMC3™)</td>
</tr>
<tr>
<td>1400°F (760°C)</td>
<td>Luminous, vibrant red color</td>
</tr>
<tr>
<td>1500°F (815°C)</td>
<td>Brilliant red-orange color</td>
</tr>
<tr>
<td>1600°F (870°C)</td>
<td>Glowing red-orange color; surface shimmers</td>
</tr>
<tr>
<td>1700°F (926°C)</td>
<td>Surface shimmers and appears wet</td>
</tr>
<tr>
<td>1761°F (960°C)</td>
<td>Surface shines like mercury; edges curl and the silver draws up into a ball—IMPORTANT: Do not get to this point!</td>
</tr>
</tbody>
</table>

Keum Boo Brass Plate #703-023

PMC® Kiln #703-117

PMC³™/PMC+™ Torch Kit #500-085

Ultralite Kiln for PMC® #703-016
Firing Tips

For all types of PMC®, allow the completed work to dry before firing (firing a piece while it’s still damp can cause the moisture to expand and create blisters). Once dry, PMC can sit for weeks before firing.

Supports For PMC3™, PMC+™ and PMC®

Set dry fine silver PMC® objects on ceramic tiles or soldering pads to take work in and out of the kiln easily and safely. Irregular shapes should be cradled by material that will hold them and be unaffected by the heat, such as alumina hydrate, a cooling blanket (order #500-117) or dry Plaster of Paris powder. A thin layer of these is always helpful, especially when firing rings (which need to slide) or enamels (which might stick to the shelf). For larger objects, keep the powder in a clay flower pot saucer or ceramic crucible. Please Note: These saucers can break; always hold them over a heat-proof surface. Slow cooling will make them last longer. Important: PMC PRO™ must be fired in activated carbon, which will support the piece.

Work can be air cooled after firing or, if there are no stones or glass embedded in the piece, it can be quenched in water. After firing, PMC can be marked as “F/S” or “Ag .999” for silver and “22K” for gold. PMC PRO is a silver/copper alloy and should be marked “90/10.”

Firing Times

<table>
<thead>
<tr>
<th></th>
<th>1400°F (760°C) in activated carbon</th>
<th>for 60 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMC PRO™</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMC® Gold</td>
<td>1650°F (900°C)</td>
<td>for 10 minutes</td>
</tr>
<tr>
<td></td>
<td>1560°F (850°C)</td>
<td>for 30 minutes</td>
</tr>
<tr>
<td></td>
<td>1380°F (150°C)</td>
<td>for 60 minutes</td>
</tr>
<tr>
<td></td>
<td>1290°F (700°C)</td>
<td>for 90 minutes</td>
</tr>
<tr>
<td>PMC®</td>
<td>1650°F (900°C)</td>
<td>for two hours</td>
</tr>
<tr>
<td>PMC+™</td>
<td>1650°F (900°C)</td>
<td>for 10 minutes</td>
</tr>
<tr>
<td></td>
<td>1560°F (850°C)</td>
<td>for 20 minutes</td>
</tr>
<tr>
<td></td>
<td>1470°F (800°C)</td>
<td>for 30 minutes</td>
</tr>
<tr>
<td>PMC3™</td>
<td>1290°F (700°C)</td>
<td>for 10 minutes</td>
</tr>
<tr>
<td></td>
<td>1200°F (650°C)</td>
<td>for 20 minutes</td>
</tr>
<tr>
<td></td>
<td>1110°F (600°C)</td>
<td>for 30 minutes</td>
</tr>
</tbody>
</table>

To achieve maximum metal strength, fire at 1650°F for two hours.

Please Note: These saucers can break; always hold them over a heat-proof surface. Slow cooling will make them last longer.

Important: PMC PRO™ must be fired in activated carbon, which will support the piece.

Use a soldering pad or ceramic tile as if it were a cookie sheet to move pieces into and out of the kiln.

Stack soldering pads on fire-brick stilts to increase surface area.

Support pieces in a clay flower pot saucer filled with alumina hydrate.

Rio PMC® Kiln Shelf Kits
6" x 6" Solderite™ shelf kit #703-067
7" x 7" Ceramic shelf kit #703-080
Adding Gemstones

Some natural stones may be undamaged by PMC® firing, particularly at the low temperatures used to fire PMC3™, but there is always a risk that they will discolor or crack. Gems composed of laboratory-grown corundum, spinel or CZ, however, are created at very high temperatures and will not be damaged by any of the firing scenarios shown on the preceding page. Please Note: Organic materials such as pearl, opal, bone, shell, wood and most glass objects (see page 14) are not suitable for firing and should not be set into PMC. Important: Never fire a doublet.

Please Note: For a list of stones to use with metal clay, visit riogrande.com and search “fire-resistant.”

To Set a Small Faceted Stone

1. Prepare a seat or rim that will provide enough metal to surround the gemstone. This can be added to a form or built into the original shape.
2. Make a conical hole with a pencil point or similar tool.
3. Use a straw or similar tool to remove clay from beneath the stone.
4. Set the gemstone in place and press it down until the table is below the surface of the work. Remember that the clay around and under the stone will be contracting and will squeeze the stone upward. To compensate, press the stone deeply into the clay.
5. Fire as usual; allow to cool in the kiln to avoid shocking the stone.

To Set a Flat-Back Stone

1. Create a smooth, flat area for the stone.
2. Roll out a rod then flatten it to make a thick strap. Wrap this loosely around the stone then use PMC® paste to join it securely to the base. If necessary, this can be scraped smooth when dry.
3. For large stones, make a small cut in the back to allow the PMC to shrink without tearing.

To Set a Heat-Sensitive Stone

1. Rio Grande offers fine silver bezel cups that can be fired in place and then used to set heat-sensitive stones.
2. The Dynasty StoneSetter™ guide allows you to create your own stone-setting tool to make adding cabochons and stones to your fired metal clay designs fast and easy. Visit riogrande.com for more information.
Finishing

After firing, silver PMC® has a characteristic matte white color. Because the surface has a microscopic texture, it is as if there is a powdery skin on the silver. If you press it lightly, the texture gives way to a reflective silvery shine. Because of this, some form of burnishing should always be part of the finishing process.

Hand-Burnishing

Perhaps the most basic (and rewarding) way to polish PMC® is to rub it with any hard, smooth object. Commercial burnishers offer a time-tested tool shape held in a comfortable handle, but you can use knitting needles, teaspoons or polished nails. Lubricate with a few drops of water and rub the PMC in all directions to make it shine. Follow this with a polishing cloth like Rio’s Sunshine Cloth® to remove burnishing marks.

Spectrum Finishing Papers

The screen mesh structure of Spectrum™ finishing papers resists loading and is reversible so you can use both sides, enabling faster, more effective finishing and a longer service life. Their synthetic fiber backing contains carefully graded white aluminum oxide abrasive that can be used wet or dry. Sheets measure 8¼" x 11".

Scratch-Brushing

Brushes made from very thin brass or stainless steel wires can be used to burnish PMC®. Lubricate with any sort of soap and work under a slow drizzle of water. Scrub in all directions. Scratch-brushing can be used in conjunction with any other technique.

Tumbling

A tumbler is a mechanical device in which hundreds of steel balls and rods cascade against jewelry objects as they rotate in a drum like a miniature clothes dryer. The advantages are that many pieces can be finished at once and that individual handling is minimal. For finishing several pieces at once, tumbling is often the choice of PMC® users.
Combining with Other Materials

Whole books have been written about the wealth of opportunities that exist to combine silver or gold PMC® with glass, polymer, paper, leather, fabric, shells, found objects, enamels, wood . . . well, you get the idea.

Embeddables®

Made with our exclusive alloy, silver Embeddables® can be safely fired with your PMC® designs! Simple push the component into an unfired design, then fire. Available in three styles: bails, eyelets and pre-notched settings.

Enamels

PMC® is a perfect medium for enameling. Create a silver object with recesses, fire and finish as usual. Wash enamel powders and pack them into the recesses. Dry and heat (kiln or torch) until the powders melt and fuse. Repeat as needed to fill the cavities.

You can also mix enamel powders into PMC to create a metal/glass hybrid. Knead together equal parts of each material, model a form, and fire slightly shorter than usual.

Glass With PMC3™, PMC+™ and PMC®

Combine glass and PMC® in lots of creative ways. There are many formulations of glass with a wide range of melting points. Experimentation is recommended. Completed PMC objects can be inserted into lampworked or blown glass, and glass can be slumped over it. Silver has a tendency to create a green tint in some glass. To reduce stresses, all glass should be cooled slowly in a process called annealing.

Please note: PMC PRO™ is incompatible with glasswork.

Found Objects

PMC® can be soldered to bronze, copper, brass and gold. You can also use it with steel and nickel silver elements although, because of heavy oxidation, the PMC will not fuse to base metals. Plan ahead to create a mechanical connection such as a hook, prong, rivet or undercut to secure the finished pieces together.

Polymer Clay

Make a PMC® object and fire it as usual. Sand, burnish and complete any soldering, then press polymer clay elements into it. If possible, provide handles of silver to grip the polymer. Cure the polymer at its recommended temperature (see package; manufacturers differ). This will cause no harm to the fired PMC. In some cases it is recommended to glue the polymer to the PMC.
Health & Safety

Entirely Non-Toxic

PMC® has been certified by an independent testing facility to be safe in every phase of its use and to conform to ASTM D4236. Issues of safety do not arise from PMC itself, but in the normal use of the high-temperature furnaces used in the sintering process. These kilns should be positioned on a stable surface, away from combustible materials, with a foot of open space on all sides. Never leave a kiln unattended and take special care if animals or young children are in the area. As always, when working around heat, wear appropriate clothing and avoid clothes made with synthetic fabrics. There is little reason to look into a kiln but if you do this, eye protection should be worn (see your Rio Grande Tools & Equipment catalog).

Storage & Shelf Life

You’ll notice that PMC® is packed in an air-tight foil pouch to preserve its freshness. Use this package or a good-quality plastic wrap (or both) to keep your clay moist. It is good practice to take out only what you will use within a few minutes and to add a few drops of water to the lump at the end of each work session.

All PMC can be rehydrated if it dries out, though it is difficult to achieve the homogenous consistency of fresh PMC. To restore dry material, poke the lump with holes or dice it into small pieces. Add water by kneading, then set the PMC aside to allow the water to penetrate; allow at least a day, more if the clay was very dry. With the sample wrapped in plastic, knead repeatedly to force the water into the dense metal structure. If you add too much water, spread the PMC on a piece of plastic, glass or waxed paper and allow it to dry to a useable consistency.

See your Rio Grande catalogs for PMC® products, tools and supplies. Call toll-free 800.545.6566 or visit www.riogrande.com to order. For information about Rio Rewards PMC® certification, visit www.riorewards.com.
Helpful Contact Information

Rio Grande®
7500 Bluewater Road NW
Albuquerque, NM 87121
To order PMC® and tools
or for technical support:
www.riogrande.com
800.545.6566 (toll-free)
800.965.2329 (fax)
505.839.3000 (local)

Visit our Learning Center online for
galleries, tips & tricks, instruction
sheets, projects, videos and more!
forum.riogrande.com

Education In Motion℠
For class offerings:
www.educationinmotion.com
866.346.2698 (toll-free)
505.839.3216 (local)
email: education@riogrande.com

Rio's jewelry experts are the best in their
fields and eager to share their knowledge and
experience with you through jewelry-making
classes.

Rio Rewards PMC® Certification
www.riorewards.com
800.870.0111 ext. 5 (toll-free)
505.839.3742 (local)
email: nperea@riogrande.com

Rio Rewards PMC® Certification is intended
for the PMC enthusiast who can benefit from
the recognition that a standardized level of
expertise offers. Our instructors are considered
the best in the industry. Simply by completing
the three-day course, you become enrolled in
Rio Rewards, a special purchasing program
through which members receive discounts on
metal clay and all metal clay-related products.

© Yvonne M. Padilla