Metal Clay Veneer Kit
I first loved clay!

You could pinch it, squish it, twist it, roll it out, throw it into a magnificent bowl or vase, and it accepts any texture. Clay yields to your ever whim. You are the master. Best of all if you mess up then you push it back together and start all over. The only time it is unyielding to your will is after it has been fired. I went from clay to metal many years later and what an awakening I had. You had to plan, measure, saw, hammer and solder to get your will imposed upon it. Now I had a clash of desire, I wanted to work in precious metal but I wanted it to act like clay. Fortunately, PMC came upon the scene. I had the good fortune to attend a workshop at Tucson Parks and Recreation, which Eleanor Moty taught, introducing PMC. The year of 1996 was the beginning of my love affair with PMC. Now I found the answer to my dreams. My mind has been going night and day ever since. Can I do this or will such and such work?

I am not going to write on the techniques of working with metal clay. Many fine and talented individuals have already done that. I admire their work and their skill at this. I urge you if you are not familiar with metal clay techniques to study one of them, you will find a list at the end of the book. Their techniques and illustrations are wonderful. Metal clay veneer is a new, exciting, and wonderful technique, which I will to share with you.

The very first time I saw the new flexible, non-drying sheet, my world really caught on fire. New horizons opened up, all the new things that you could do with it! Only one thing would make it better. What if the sheet had texture? To this end, I have devoted many long hours and tried the patience of my husband. Now I have the ultimate in metal clay, a veneer sheet which is textured, flexible, non drying and almost indestructible. My mantra is, “The only limits to the way metal clay veneer can be used are those imposed by your own imagination.” There are no right or wrong ways to work with PMC veneer only new ways. Remember to think outside of the box!

In this book, I will give you some examples of techniques and ways to use metal clay veneer. Very different techniques and craft products utilized as well as traditional metalsmithing technique.

[Signature]
Metal Clay Veneer Sheets

The veneer sheet is prepared by mixing a veneer solution with the various types of lump metal clay to make a viscose paste.

This paste is then applied to a textured substrate; then allowed to dry. When thoroughly dry the sheet will peel from the substrate to yield a flexible textured sheet.
This textured sheet may then be applied to various items. When fired to appropriate temperature for the type of Metal clay used, it will become an integral part of the completed item.

VENEER SOLUTION: (patent pending) this solution is supplied in 2 oz. flip top bottle; it is sterile and composed of nontoxic FDA approved substances.

For a consistent measurement of solution, two 1 oz. graduated measuring cups are supplied. Sterility eliminates the growth of molds and yeasts in the veneer solution. If such growths do occur in the veneer paste after prepared; remove them before using as they may affect the texture of the sheet.
PREPARATION OF THE VENEER PASTE

This is the one day method for making the veneer paste. It is important that you read all the instructions for making the veneer paste before starting. Since this is a total new product with its own original characteristics, this will ensure you best success. The proper ratio for making the veneer paste is given by each type of silver clay.

These ratios are rounded to the nearest milliliters. The final viscosity may be adjusted to your own project. Remember if there is no side wall then it is too thin to yield a good veneer sheet. A thinner viscosity paste will fill complicated designs with under cut with less trapped air bubbles and the sheet is more flexible. Thick viscosity yields a stiffer veneer sheet and a smaller size than a thinner paste. These tips will assist you to determine the most suitable viscosity for your project. All metal clay veneer paste will thicken after standing and is subject to growth of contaminates. It is best to make all of the veneer paste into texture sheets as they will store indefinitely in plastic bags. Only fire what you want to work with. The unfired texture sheets can always be cut up and reconstituted with water to make veneer paste again. This does not effect the shrinkage rate in any way.
### Type of PMC

<table>
<thead>
<tr>
<th>Type of PMC</th>
<th>Ratio</th>
<th>Grams</th>
<th>Milliliters Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard PMC <em>Note</em></td>
<td>1 ml/gram</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>PMC +</td>
<td>0.54 ml/gram</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PMC 3</td>
<td>0.6 ml/gram</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Standard PMC makes a very thick paste and more water is necessary to arrive at a good viscosity. The veneer sheet is very soft and flexible. When fired the sheet is still more flexible than the other forms of PMC and the 28% shrinkage is advantageous.

### Type of Art Clay

<table>
<thead>
<tr>
<th>Type of Art Clay</th>
<th>Ratio</th>
<th>Grams</th>
<th>Milliliters Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.5 ml/gram</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>Slow Dry*Note</td>
<td>0.75 ml/gram</td>
<td>50</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Slow Dry 650/120*Note</td>
<td>0.75 ml/gram</td>
<td>50</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Low Fire</td>
<td>0.5 ml/gram</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Slow dry forms of Art Clay are more difficult to obtain a smooth veneer paste. Use smaller pieces and do not add all of the veneer solution at one time. Addition of excessive water may cause the veneer sheet to curl up as being fire. Just flatten out with fingers or flat nose pliers.
1. Using a metal clay package of your choice, pinch off small pieces of it, approximately the size of 7 mm flat bead or smaller. The absorption rate is effected by the size and thickness of the metal clay as well as the frequency of stirring.

2. Place them into a straight sided container which will hold 1-2 ounces of solution and it must have a tight cap.

3. Add the indicated amount of the veneer solution from the previous page is appropriate to yield good results.

4. Stir gently with plastic spatula try to not create excessive bubbles. Bubbles are not your friend. They will not readily pop as the veneer solution get thicker. This makes it more difficult to get a smooth sheet.

5. Allow the mixture to stand several hours. Stir several times to break up the clumps and increase absorption rate of the solution.

6. Stir again several times.

7. Allow to stand over night or until smooth. If you start early in the morning you may be able to use it that night.

8. Stir to check the smoothness of paste. If a little lumpy; stir again. You may need to repeat this step 2 or 3 times.

9. The viscosity should be such that when a small amount is dropped on the surface as it slowly spreads over the texture plate and will retain a side wall the thickness of 1-2 mm. If excessively thick, add a small amount of plain water in 1/2 tsp increments until proper viscosity is reached.
**Points to remember:**

1. Distilled or bottle water is necessary because they are less likely to cause contamination of yeast and molds.

2. The size of the pieces will affect the absorption rate of the veneer solution and the smoothness of the paste.

3. The viscosity and smoothness of the paste will determine the final sharpness of the veneer sheet.

4. The quantity of the final addition of water to the solution is also dependent on the humidity of your climate.

5. When viscosity is too thin and does not hold a side wall, let it stand until the viscosity is sufficient to hold a side wall.

6. Excessively thick, the trapped air bubbles in the texture will effect final texture and decreases the flexibility. Also when fired it will be less pliable.

7. Once the indicated amount of veneer solution has been added **USE ONLY WATER!**

8. When the viscosity is correct, one coat of veneer paste is sufficient.

9. The key points to observe are the small side wall, thickness of 1-2 mm, as the paste slowly spreads over the sheet.

Leftover paste will thicken upon standing, additional water will be needed to return it to the correct viscosity. Upon standing for extended periods you may find mold growing on the top of the paste. In this case just remove it with a spatula. I have restored veneer paste even when completely dried up. Just work slowly and add small amounts of water until it returns to the proper consistency. This is learned after a few times. Original PMC yields a larger volume of paste but also there is greater shrinkage. This shrinkage may be advantageous, as the reduction will create a sharper image. Use a metal clay with less shrinkage first as it uses less veneer solution.

I always use metal clay veneer with a metal clay of a similar shrinkage rate. The veneer sheet must be fired at 1650°F degrees for 2 hours when used as a separate element. If not fired to this temperature it will be brittle.
**SUBSTRATE**

Textured plastic plates may be used with polymer clay, place mats, and shallow Belicone molds, etched glass, or even baked polymer clay sheets.

Test any new substrate with a small quarter size glob of veneer paste first. This will save a lot of frustration.

*DO NOT USE RUBBER STAMPS* which are used for the transfer of ink to paper as the paste does not release from them.
Some rubber molds used for texturing polymer clay may be used but test first with a small amount of the veneer paste.

When I want to use a rubber stamp, I make a polymer clay mold. It will be the negative mold of the stamp so bake it and make a positive image to use. However, I have found that both images may be very interesting.
I frequently make my own design by carving into a sheet of baked polymer clay with a thickness of 1/4 inch. This will allow carving on both sides. I use white Sculpey because it is very soft and does not require conditioning before baking.

Bake according to manufacturers instructions. Do not under bake because it increases the likelihood that the veneer will stick. The Sculpey in the unbaked state makes a wonderful substrate to create your own texture sheets. Leave a plain border around the plate so that the veneer paste won’t run off the edge.
Many other textured items may be used; however if the surface is dull and porous it will not work. Test them first by dropping a small amount of paste on the item to determine if the veneer paste will automatically release when dry. Save these tests for future use or tear them up and add back to your paste jar. Add a little water if need to restore the viscosity.

When you find that there are unattractive bubbles in the finished sheet.

Do the following:

1. The viscosity may need to be a little thinner.

2. Then put a thin coat of paste on it, rub with your finger to force the paste into the deeper areas. Do not let dry! Now drop globs of veneer paste on it and let it flow together.

Usually there is not a problem with the veneer sticking but always do the above test before covering a large area. The design on the substrate should not have undercuts and a final depth of 2-3 mm or 1/16 inch. If sticking occurs on Sculpey and only on Sculpey then you may lightly spray with silicone product not any oil based product.

Testing first saves many tears. When you have a substrate with veneer paste stuck on it; then place upside down in a small dish of water. Clean off with spatula and return to jar. Nothing lost but time and energy. It makes a lasting impression.
MAKING THE SHEET

The viscosity is correct when you can pour or drop big globs on the surface of the substrate. It should leave a small tail as it drops.

Let globs of the paste drop off the end of the spatula. Do not push it around with some object as this breaks the side wall and makes an uneven sheet. We often want to do this to cover a little larger area, but better to just add a few more globs of the paste.

As the veneer paste slowly flows over the substrate it will fill the design with minimum of trapped air bubbles. With a clear substrate you can check from the other side using a mirror to see if air bubbles are trapped in the design. Air bubbles may be pricked with something sharp to break them up. Plastic sheets manufactured will have a texture of such a design that trapped air bubbles are inherent to it.

Often they will not be a distraction from the design and will be significantly less visible after firing.

Air bubbles which appear on the top of the wet sheet are generally not a problem. Additional layers are unnecessary if there are no uncovered areas in the plate.
Let the sheet air dry until it lifts from the substrate.

You may add a heat source such as a bench light to speed drying. If you put out doors be sure it won’t blow away or get leaves and twigs blown on it. Also I have experienced squirrels, birds, and little dogies eating it. The big caution here is to be sure the sheet has released of its own accord or it will tear. The coat of veneer paste should be sufficiently thick that you do not see light through the highest parts of your design. The highest part will be in contact with the surface of your item and therefore does not need as much strength as deeper elements of the design. If the highest parts are not covered sufficiently the whole sheet will fall apart as you are working with it. When the sheet is dry, it will peel off of the substrate.

DO NOT FORCE IT OFF OR IT WILL TEAR. The completed sheet is flexible and may be stored in a zip lock bag marked with the kind of metal clay used. Sheets stored for 3 years have not lost their flexibility. Save all unfired pieces of the sheets, they may reconstitute with water to make new paste. I will also have projects using scraps for both the unfired and the fired veneer.
Step 1: Use the small jar and cut the gold clay in very small pieces. Small and thin is best. Place in the jar add 1/2 of the veneer solution. Using a small dental spatula, wax carving tool or plastic spatula mix to make a smooth paste. Add a few more drops at a time until you have the viscosity similar to that of silver paste. Let set a few hours. Setting over night is recommended.

Step 2: It will be dissolved into a thick paste and ready for application. Be sure the substrate is one which will readily release the veneer sheet. Use a small dental metal spatula or plastic spatula to transfer small amounts to the texture plate. If it seems too thick add one or two drops of water to the gold paste. Drop by using the globs, do not spread as it will break the sidewall; one thick layer is sufficient. This maybe one time you want to work with a transparent substrate to check for any trapped bubbles. Break any you find with a pin or needle. Let dry until it comes loose.

Step 3: Trim any excess from the pattern, add to the remaining paste and dilute with water to make a slip or more veneer paste for new projects.

Step 4: I fired to the temperature schedules specified by the manufacture. I used it as a slip painted on fired metal clay. Paint on several coats, letting dry thoroughly between coats. It may be fired using a torch for 2-3 minutes after becoming cherry red. Burnish with small dental metal spatula. It may also be fired using the kiln 1450 degrees F for 5 minuets. Burnish immediately.

Step 5: Gold veneer elements maybe fired separately and then added to other silver projects. It seemed to have a more intense gold color. I also found this to be a very efficient use of the gold to have more units to work with.
Items Set With Metal Clay Veneer

Fired textured veneer sheets used for bezel cups or textured backs for various assorted items. For this application the veneer sheets must be fired at 1650 F for 2 hours so they are at the maximum tensile strength and density. These veneer sheets are now adaptable for items of unusual shapes, or varied thickness. They are excellent for use with heat sensitive items and may even be applied to concave items. One huge advantage is that the veneer is extremely light so it adds very little weight to the item. These textured additions now make the piece beautiful on both sides. Since it is essentially two items of jewelry so twice the price.

During this process we will be using some of the same steps over and over: Make a pattern, trial fit and wait patiently.

Charoite Pendant
Covering the back only of flat item with finished edges.

1: Consider where the optimal location of the bail is to be located. Select the best balance point and orientation of the item for your project. You may have several options. Work with copper or some other wire to experiment with various options. After your final decision; cut your silver wire allowing extra for bead embellishments or wire work. Use 18 or 20 gauge wire according to the weight and size of your item. Wire 18 gauge may be flattened on the portion crossing the stone. This will make the wire less visible on the back. This step may be omitted with 20 gauge wire. Remember you are creating a doubled sided piece!

2: MAKE A PATTERN! This is a step to be repeated each time. You will learn many things about setting your items; such as where the foil bends and bunches, so you may need to make a slash or dart. Use heavy duty aluminum foil to make the pattern. Foil is OK to use on the fired sheets; do not use if working on an unfired sheet. In that case use paper. I glue several sheets of heavy duty foil together with spray adhesive until it equals the thickness of an veneer sheet.
Lay the item on a piece of the foil, trace around the outline keeping the marker vertical to the edge. Do not go under the edge or there will not be sufficient veneer sheet to cover the back correctly. Cut out the foil; cutting just outside of the line. Test fit to your item. Remember it is easy to cut a small excess off; but you can not add it back on. Trial fitting is one of your best learning tools so don’t skip it. When everything matches up then you may cut the veneer. In this case I transferred the pattern to the front of the sheet enabling me match up the focal point of the design. Because this piece is symmetrical it was appropriate. However, if the piece is asymmetrical then you can not use the pattern on the front. Do not cut off what you think to be excess veneer sheet because the glue and wire will take up some. I finger fit it before I do any extra cutting. Be sure that the textured side of the veneer sheet will be down, so the wrong side of the textured sheet will be on the wrong side of the item that you are using. Not fun to find the texture is on the wrong side!
Step 3: Use 18 gauge wire; allow several inches beyond the edges of stone to make O rings or attachments for the stringing elements. If the stone is small or delicate you may try 20 gauge wire. Flatten the center portion of 18 gauge wire which will be covered by the veneer sheet. This part will be hidden by the veneer. Take care to not go beyond the edge of the item.

Step 4: Use Styrofoam block and t pins, wire, or florist pins to hold the wire for the bail on the back of the stone and apply glue. I use E6000 or Dazzle Tac. The glue must be strong, flexible, and capable of forming strong bonds between dissimilar materials. Apply a small amount of glue to embed the wire. The thick glue will help conceal the outline of the wire. Let set until completely dry. I know this is hard, perhaps you can do it late at night and waken to a dry piece in the morning, or you could work on other projects as your piece dries. If you positively can’t wait, then you may want to try double-sided tacky tape. I know this is a severe departure from the traditional but it is very useful in a workshop or if the artist is not a silversmith. I have found it very strong and durable. I even put a piece in the tumbler. It came out still attached to the silver. As you will be using instant glue in a later step, that will act as a back up.
Step 5: Now you are ready to join the veneer element to the back. Apply any antiquing solution at this time because the glue has at some times interfered with the absorption of the solution. Apply more of the glue to the back of your piece. Do not go all the way to the edge because the glue will spread as you apply pressure to hold the stone in place. Use the Styrofoam block and pins or clamps. Let dry thoroughly then trim to fit. Rushing it will only cause frustration and more work.

Step 6: Next you will be ready to blend the edges of the veneer sheet to the back. The main object is get a smooth edge so the finished piece won’t snag clothing or skin. File the edges to make them thinner and they will lay flatter against the stone. Rough edges which are due to the texture of the sheet need more filing across the texture and then blend with burnisher. As a finishing touch, the edges may be glued with instant glue. Don’t squeeze the tube; let capillary action draw the glue under the edge. Polish with Dermal or polishing papers.

Many different shapes such as irregular pottery or china shards, heat sensitive gem stones and dichroic glass may be used. Browse through my gallery to see that many of these things will be covered in my book.
Use of Tabs:

Tabs may be used as a decorative element or to hold the sheet and stone together. The steps are the similar to proceeding instructions except when making the pattern. Where the tabs are located they will stick out as ears. Tabs may not be the primary way to hold the sheet and stone together; therefore they maybe located in a purely decorative way and have wavy edges. Or the function may follow the traditional points to hold the stone in place.

When working with rough or curved backs like a fossilized nautilus and pottery shards use the following suggestions. The back of uneven items can be made smooth and even by using a product called Crayola Model Magic. It is a white marshmallow looking substance which you can buy at craft stores. It will stick to the back to make a smooth level back. When it is air dried it is very durable and withstands the pressure of bending a bezel or the edges may have some other treatment. The back of the fossil will actually be covered very well with just the veneer. If the back of item is dirty or dusty just cover it
with white glue. This is the treatment I have used. It will even bend into a convex surface. The development of a foil pattern to obtain the correct convex curve is necessary. Combining this treatment with also covering the edges will take some trial and error so be sure to use the foil pattern. Also you may need to make some concession on corner treatments. These are also the points to be taken into consideration when making a side covering such as a traditional bezel cup. It may be necessary to use two different steps in some treatments. When one strip is as the bezel side; do it first and then proceed with the back portion.

Edge bezel treatment may be used if the stone is thin and has two finished sides. Make a long strip of veneer as discussed in substrates using a foil pattern to get the proper length.

Using veneer sheet with pottery, china shards, the back of crystallized stones, and many other items is a new horizon in veneer.