



PMC Plique-a-Jour Spoon *Louis Kappel*

Plique-a-jour is an enameling technique in which transparent enamel is fired in backless openings or cells so that light shows through. It produces an effect like miniature stained glass windows. PMC is an ideal medium to make the silver frames for plique-a-jour because it is pure silver after firing, and so it will not discolor under transparent enamels do not discolor like sterling silver does. PMC frames are also less time consuming to make than sterling frames. The piece described is a spoon with a pansy design in the bowl and a design of violets in the handle.

Materials

2 28 g packages of PMC+
1 package PMC Sheet
PMC+ and PMC3 Slip
24" of fine silver wire, 24 gauge
Enamels (Thompson stock #s)

- Concord Grape Purple, transparent 2755
- Glass Green, transparent 2340
- Clear, transparent 2010
- Olive Green, transparent 2240
- Savor Purple, transparent 2740
- Opalescent White, 2061
- Egg Yellow, transparent 2215
- Light Blue, transparent 2610

Klyr-Fire
Distilled water

Tools

Tweezers
Small brush
Xacto™ knife
Ruler
Small scissors
Spatula
Stainless screen mesh for firing
Firing support stilt
Firing Fork
Kiln
Dapping block and punches
Alundum stones or diamond tools

The tools you use may vary. For instance, if you don't have a dapping block, you can substitute a spoon-shaped depression carved into wood or a similar form made in polymer clay.

The pansy design forms the bowl of the spoon. The plique-a-jour cells are constructed and fired flat, then formed and attached to the spoon handle through a second firing. When the metal is intact, enamel is laid into the cells and fused, usually requiring multiple firings. The surface is ground smooth and then refired and polished.

Making the cells

The first step is to glue your design (actual size) on a work surface using white glue. I prefer to use glass but any smooth surface is acceptable. After this has dried, you are ready to start placing the cells. The cells are flat silver wire that separate the different enamel colors in the design. Since PMC is used in this project, we will use PMC+ paper for the cells. PMC+ paper has the advantage of being much easier to shape than silver wire and can be placed directly on the design. Use the longer version of PMC+ paper to make the cells. Cut the paper into 2 mm wide strips using a ruler and a craft knife, keeping the strips as uniform as possible. Put them aside for later use. They can be stacked at the side of your work area. PMC+ paper does not dry out. I have left it out in the open for over a year and still have had no problem using it on a project.

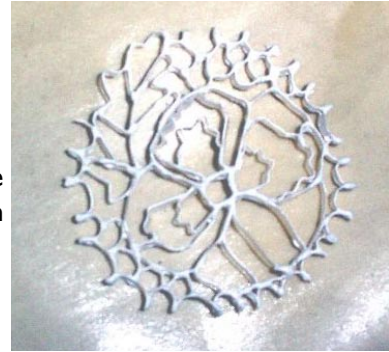




Creating the Pattern

The cells are formed by bending strips of PMC+ Paper (set on edge) into shape and gluing them together with slip. Purchase commercial slip or make some from PMC+ clay. The slip needs to be the consistency of heavy cream. I use PMC+ slip with the PMC+ paper since it has the same shrinkage when fired. Note that the cells are delicate at this point and can easily be torn, so use a gentle touch.

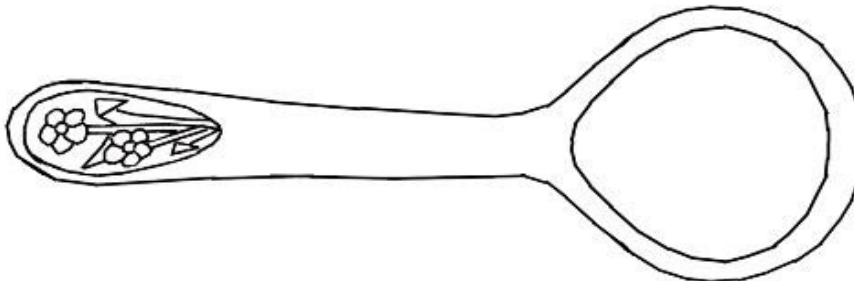
Making the cells and putting them together to create the pattern is a time-consuming process. Everything will be connected together when the pattern is finished, so you can start anywhere. I like to start in the center and place all the cells that make up the pattern before putting in any of the background. For the pansy pattern, I started with the circle in the center of the flower. Make the proper sized circle with your tweezers with a small overlap. Glue it into a circle using the slip and a small paintbrush for application. Put the circle on the pattern and continue to place the rest of the cells. Be sure to shape the PMC paper cells by bending and creasing to match the pattern before gluing them into place with slip. When the pattern is complete, use a small brush and slip to reinforce all the joints. Let the piece dry overnight. In the morning, use the Xacto™ knife to carefully lift the paper with the pattern on it from the glass. Separate the paper from the pattern with the knife, and flip it over so you can reinforce the back sides of the joints. Let this dry thoroughly and then fire the pattern on a flat surface in the kiln at 1475° F (800° C) for 2 hours to fully sinter the silver. Repair any breaks or tears with PMC3 and fire for at least thirty minutes at 1110° F (600° C).



The Spoon Handle

The body of the spoon is then made of PMC+. Cut out the actual sized patterns from paper. Roll the PMC+ to a 5 card thickness and cut out the patterns for the spoon and handle support using the cut out patterns and a craft knife. Be sure to cut out the end of the handle for the violet design. Attach the handle support to the spoon body with PMC+ slip. Decorations on the PMC part of the handle may be done at this time while the PMC is still soft. The cells will be put in place directly in the handle so the pattern for the violets should be glued in place under the spoon handle. Let the spoon base dry (I allow 24 hours).

Fire the handle flat for 2 hours at 1470° F (700° C). After firing, shape the edge of the spoon bowl and the handle.





Shaping the Bowl

Shape the bowl of the spoon on the dapping block. You should be able to do this with finger pressure in the spherical indentations of the block.

Attach the Bowl to the Handle

The bowl is laced to the opening in the handle with 24 ga. fine silver wire as tightly as possible matching the edge of the pattern to the edge of the opening in the spoon handle. The wire is used to hold the pattern to the handle so that it may be attached. PMC3 slip is used to connect the pattern to the spoon handle.

When the paste is dry, fire the assembly on a flat surface at 1110° F (600° C) for 2 hours. Remove the fine silver wire. The cells may be adjusted with a small long nosed pliers. Files or a rotary tool may be used to clean up the spoon. It is now ready for enameling.



Plique-a-Jour

The enameling descriptions assume that the reader is familiar with the techniques of washing enamels before using them and using the firing fork to transfer the piece in and out of the hot kiln and have the basic tools needed. Since several colors are used in this piece, they must be prepared before use. I like to use small plastic spoons to wash and hold small quantities of enamel. It is important to wash transparent enamels well to preserve color and transparency.

I use the method of plique-a-jour enameling taught by Valeri Timofeev. This ancient technique uses no backing for the enamel during firing, so the end result is often compared to a stained glass window. Start by thoroughly washing the transparent enamel that you are going to use. While doing this, turn on the kiln and allow it to come to a temperature of 1475° F (700° C). Make a mixture of one part Klyr-Fire (20%) to four parts water (80%) and mix the clean enamel powder into this to make a spreadable consistency.

Lay the enamel into the cells, a task best done with a small stainless steel spatula. Surface tension will allow a thin film of wet enamel 2 or 3 grains thick to be suspended within a cell. It is best to apply only one color of wet enamel at a time to avoid mixing colors. The enamel should be dry before firing, and you can achieve this by placing the work (typically mounted on a firing trivet) on top of a warm kiln. If there is excess moisture, you can speed up the drying process by lightly touching the cell with the edge of a piece of blotting paper or paper towel.

When the work is completely dry, open the kiln and quickly set the trivet inside. Move quickly so you can minimize the heat loss that comes when you open the kiln door. Fire to an orange peel surface. This typically requires about 60 seconds, but the time will vary with the kiln used and the size of the piece. Test your kiln with a sample and be sure to record the time. The goal of this first firing is to create a spiderweb-like film in the cell. This glassy mesh will have holes, but it will be across most of the cell. Allow the piece to cool slightly, then add more enamel.





Refire the piece to fuse the next layer of enamel, repack, and again refire until the cells are filled, then repeat the process with the next color. Each firing should use the same length of time. Note that even when properly filled, the cells will have a slightly concave surface. The example piece needed 36 firings to complete all the cells. If your prepared enamel gets too dry, add a little water to maintain the right consistency. Additional colors may be added to a filled cell but only after the first surface is mature. The exception in this piece is the background color. The background color is a 50/50 mix of light blue and clear.

When all the cells are filled, sand the piece with an alundum stone or a diamond tool under water to remove enamel that fired onto the silver surfaces. I like to use diamond burs with a Foredom flex shaft machine. When the surface is nicely smooth, the matte appearance of the stoning is made shiny by one more firing. Set the piece back in the kiln, typically at 1475° F (700° C) for about two minutes, though again, this time may vary for your kiln.

After fire polishing, I tumbled this spoon with stainless steel shot and burnishing compound. Tumble polishing will not hurt the enamel surface but will polish the silver surfaces.



