



### Millefiori and Murrini Pendants

Create beautiful, old-world or hip, modern designs by combining millefiori, murrini, and Colour de Verre pendant molds. While the results look professional and intricate, they are easy-to-make and require only one firing.



Murrini are created by drawing a block of layered glass into a long rod. The rod is nipped into uniform pieces that are anywhere from coin-size to a couple of millimeters in diameter. This process creates small pieces of glass with delicate patterns imbedded throughout. When the patterns are flower-like, the murrini are called millefiori, Italian for thousands of flowers. Combining the millefiori and

murrini with Colour de Verre molds creates pendants that range from old-world classics to hip, contemporary pieces.



Murrini used to be solely produced in COE 104 glass by the Italian Masters of Murano, Italy, but American art glass studios are producing beautiful murrini in both COE 90 and COE 96 glass.

Just a note: The millefiori is the combination of two Italian words: *Mille* for thousands and *fiori* for flowers.

### Preparing the Molds

The molds must be primed so the glass doesn't adhere to the ceramic material from which the molds are made. There are two choices for primers: Hotline Primo™ Primer and ZYP BN Lubricoat (formerly MR-97). The ZYP is the easiest to apply and remove. It is an aerosol and, after firing, brushes off easily

from the molds and can be washed off the pieces. Castings created using ZYP have exceptionally smooth surfaces and almost never require grinding or "cold work."

Primo is a traditional kiln wash that is applied with an artist's brush. It's a trusted and proven product, but requires a bit more "elbow grease" to remove after firing. Primo's big advantages are it's low cost and availability.

Brief instructions for each option follow:

To apply ZYP, hold the well-shaken can 10 to 12 inches from the mold. Hold both the mold and the spray can upright. Apply the first, light coat using a two to three-second burst of spray in a sweeping pattern across all the mold's cavities. Do not saturate the surface. If it is the first time ZYP has been applied to this mold, it is necessary to apply a second coat of the product.

Before applying the second coat, let the mold dry for five minutes. Apply the second coat using another two to three-second burst of spray. Let the mold dry for ten to fifteen minutes before filling. Again, the double coat of ZYP only need be applied the first time the mold is used. Thereafter, only

### Availability

Colour de Verre molds are available at fine glass retailers and many online merchants including our online store, [www.colourdeverre.com](http://www.colourdeverre.com).

### Tools

- ✓ Small artist's brushes
- ✓ Digital scale
- ✓ Colour de Verre Pendants molds
- ✓ Small measuring spoons
- ✓ Tweezers

### Supplies

- ✓ Fine and Medium Clear frit
- ✓ Art Glass Millefiori and Murrini
- ✓ ZYP BN Lubricoat (formerly MR-97) or Hotline Primo™ primer

one coat is necessary. For more information about ZYP, visit Colour de Verre website's Learn section. There, download and read *Advanced Priming with Boron Nitride Aerosol*.

If you choose to use Primo Primer, give your mold three to four thin, even coats of Hotline Primo Primer kiln wash. Use a small, soft artist's brush - not a hake brush - to apply the Primo Primer and a hair dryer to completely dry each coat before applying the next. Again, more detailed instructions can be found in the Learn section of Colour de Verre's website. See *Tricks of the Trade*. When using Primo Primer, best results are obtained when using fine frit. Larger frit can produce excessive casting spurs that require cold work. Since there is less or no potential for casting spurs when using ZYP, we



suggest using ZYP if possible for this project.

### Filling the molds

Consult the table below to find the fill weight for the mold cavity you wish to fill. Measure out *half the fill weight* of medium Clear glass and evenly distribute it in the bottom of the cavity. Repeat this until all the cavities contain a layer of frit. Using a small spoon, evenly distribute half a gram of fine Clear over the Medium Clear frit in the cavity. This creates a level working

surface on which to place the murrini.



Place the murrini on top of the frit layer in a pleasing pattern. We like using small tweezers. Finally, "stabilize" the murrini by evenly distributing another half gram of fine Clear frit in each cavity. The murrini should not be covered, but sticking up out of the frit. Carefully move the mold to your kiln. Fire according to the Firing Schedule below.

### Fill Weights

Design	Grams of Frit per Cavity
Oval Pendants	Large 11, Medium 6, Small 4
Teardrop Pendants	Large 11, Medium 6, Small 4
Offset Round	Large 14, Medium 10, Small 6
Offset Square	Large 20, Medium 15, Small 7
Pillow Pendants	Rectangular 24, 18, 12; Square 14, 10

### General Firing Schedule\*

Segment	Ramp	Temperature	Hold
1	350°F/195°C	1250°F (675°C)	15 minutes
2	350°F/195°C	1410-1420°F/ 765-770°C	20 minutes
3	AFAP	960°F/515°C	60 minutes. Off

\*Schedule for COE 96. For COE 90, increase casting temperature by 20°F/10°C. AFAP means "As Fast As Possible", no venting.



### Variations

Sometimes, you might decide that the pendants look better from the back than the front. If so, place the pendant in a freshly primed mold with the preferred side up

and refire using the General Firing Schedule.



### Reusing the Molds

Clean mold thoroughly after each firing with a stiff, nylon bristle brush. Avoid breathing any dust by wearing a proper dust mask. Reapply primer before subsequent firings.

If correctly primed and fired, a Colour de Verre mold will yield many castings.