



### Four Sweet Heart Boxes

*Flowers fade and chocolate is too tempting. However, these heart boxes will be a lasting token of love or friendship.*



A pretty pink or vibrant red frit creates a beautiful heart box. Just follow the information in Colour de Verre's "Box Basics" project sheet. It can be downloaded from Colour de Verre's website.

However this project sheet is to inspire the reader to experiment with other frit combinations, different techniques, and embellishments.

### Getting Started

The two molds must be primed so the glass doesn't adhere.

Always start the same way: Clean your Colour de Verre box lid and base with a stiff, nylon brush or a green 3M Scotch-Brite™ pad to remove any old kiln wash. (This step can be skipped if the mold is brand new.)

There are two choices for primers: Hotline Primo™ Primer and ZYP BN Lubriccoat™. 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 glass pieces. Castings created using ZYP have exceptionally smooth surfaces and almost never require grinding or "cold work."

When applying or removing either of these two primers, it is advisable to wear a dust mask.

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 its low cost and availability.

Brief instructions for each option follow:

To apply ZYP, work in a well ventilated area or outside, and hold the well-shaken can 10 to 12 inches from the base mold. Hold both

the mold and the spray can upright. Apply the first coat using a three to four-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 the 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 four to five-second burst of spray. Repeat this process with the lid mold using a two to three-second burst of spray. Let the molds dry for ten to fifteen minutes before filling. Again, the double coat of ZYP only need be applied the first time the molds are used. Thereafter, only 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" and watch the video "Priming with ZYP BN Lubriccoat."

If you choose to use Primo Primer, mix one part dry primer powder with four parts water. Next, give the molds *five* coats of Hotline Primo Primer™.

Apply the Primo Primer™ with a soft artist's brush - not a hake

### 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

- ✓ Colour de Verre Heart Box Lid and Base mold set
- ✓ Digital scale
- ✓ Lidded container
- ✓ Diamond pad or grinder

### Supplies

- ✓ Hotline Primo Primer™
- ✓ ZYP BN Aerosol
- ✓ Various frits
- ✓ Dichroic on clear scrap
- ✓ Wavy Firesticks™ and dichroic shapes

brush - and use a hair dryer to completely dry each coat before applying the next. The mold should be totally dry before filling. The primer need not be pre-fired.

One important hint: This primer settles very quickly. Each time the brush is dipped, be sure to give the primer a good stir so all the ingredients stay in solution. If the primer has sat more than 5 minutes, the active ingredients will cake on the container's bottom. Make sure to stir these sediments back into solution.



### Polka Dot Box

Into a large, lidded container put 155 grams of coarse Water Clear frit. Add to the container 155 grams of coarse Cherry Blossom Opal frit. Put the lid on the container and shake it to completely mix the two frit colors. Wearing a dust mask and avoiding any dust created, open the container and transfer it to the box base mold. Slightly mound the frit to reduce glass spurs and cold work.

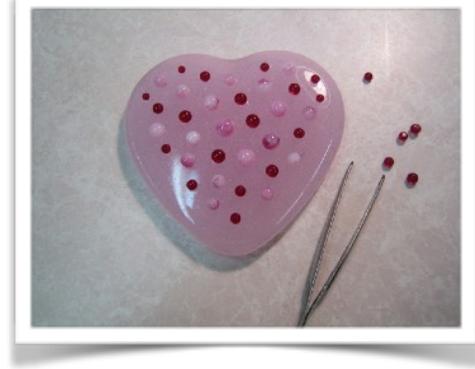
Weigh out 130 grams of fine Pink frit. Place this into the lid mold. Again, mound the frit slightly to

minimize cold work. Place the two molds into the kiln.

This design's lid is embellished with frit balls. The frit balls can be created during this same firing. To create frit balls, place a piece of ThinFire™ on a kiln shelf. Arrange coarse frit pieces of a complementary color of glass on the ThinFire. (For our sample, we used coarse Cherry Blossom Opal and coarse Cherry Red frit. Optionally, one can use small, nipped rod pieces.) As the small frit or rod pieces are heated and become liquid, surface tension will cause the

glass to ball up into almost perfect spheres.

With the base mold, lid mold, and frit pieces in the kiln, follow the Casting Schedule shown below.



### Casting Schedule\*

Segment	Ramp	Temperature	Hold
1	300°F/165°C	1250°F/675°C	30 minutes
2	300°F/165°C	1410-1430°F/765-775°C	30-60 minutes
3	AFAP	960°F/515°C	90 minutes
4	50°F/30°C	800°F/425°C	None
5	100°F/60°C	600°F/315°C	Off. No venting

\*Schedule for COE 96. For COE 90, increase casting temperature by 25°F/15°C. AFAP means "As Fast As Possible", no venting. Anneal (Segment 3) at 900°F/480°C.

### Fire Polish Schedule\*

Segment	Ramp	Temperature	Hold
1	200°F/110°C	1300-1325°F/705-715°C	10-20 minutes
2	AFAP	960°F/515°C	90 minutes
3	50°F/30°C	800°F/425°C	None
4	100°F/60°C	600°F/315°C	Off. No venting

\*Schedule for COE 96. For COE 90, increase casting temperature by 25°F/15°C. AFAP means "As Fast As Possible", no venting. Anneal (Segment 3) at 900°F/480°C.

### Tack Fuse Schedule\*

Segment	Ramp	Temperature	Hold
1	200°F/110°C	1250-1275°F/675-690°C	10 minutes
2	AFAP	960°F/515°C	90 minutes
3	50°F/30°C	800°F/425°C	None
4	100°F/60°C	600°F/315°C	Off. No venting

\*Schedule for COE 96. For COE 90, increase casting temperature by 25°F/15°C. AFAP means "As Fast As Possible", no venting. Anneal (Segment 3) at 900°F/480°C.

After the kiln has cooled to room temperature, remove and examine the castings. If there are any spikes on the base or lid, grind off the spikes with a power grinder or diamond pad.

If necessary, fire polish the piece. Start by cleaning and repriming the mold. Return the castings to the molds and refire again using the Fire Polish Schedule.

Arrange the frit balls on the lid in a pleasing pattern. Temporarily secure the frit balls in place with a small amount of white glue. Clean and reprime the lid mold. Return the casting to the mold and refire again using the Tack Fuse Schedule.



### Grenadine Heart with Dichroic Embellishments

Place 35 grams of medium Grenadine and 95 grams of medium Water Clear frit into a large, lidded container. Put the lid on the container and shake it to completely mix the two frit colors. Open the container – wearing a dust mask as not to breath any fine glass particles – and pour the mixture into the box lid mold. Slightly

mound the frit to reduce glass spurs and cold work.

Put 310 grams of fine Pink into the base mold. Again, mound the frit slightly to minimize cold work. Place the two molds into the kiln.



Break scrap dichroic on clear glass into small pieces. Create frit balls (see above) making sure to place the coarse pieces dichroic side down on ThinFire paper. Fire the dichroic pieces and the two molds according to the Casting Schedule.

Let the kiln cool completely and remove the castings. Any spikes can be ground off using either a power grinder or diamond pad. If necessary, fire polish the pieces as above.

Break or cut Wavy Firesticks on clear to appropriate lengths. Lightly glue them and the frit balls in place with the dichroic side down.

Place the lid in a cleaned and reprimed lid mold and return it to the kiln. Fire it according to the Tack Fuse Schedule below.

When tack fusing dichroic glass, it may be necessary to fire towards

the top of the temperature range. Dichroic coatings reflect heat.



### My Blue Heart

Starting with the box lid mold, carefully fill the center depression with about 18 grams of medium Dark Blue frit. Use a small brush to sweep any stray frit into place.

The Dark Blue frit should be mounded to fit into the depression. Weigh out 112 grams of medium Water Clear frit. Starting from the edges, add the Water Clear frit to the mold. Arrange the Water Clear frit to hold the Dark Blue frit in place. Slightly mound the Water Clear frit in the mold to minimize spiking and cleanup.

The base is created with a 20%/80% mixture of Dark Blue and Water Clear medium or fine frit. In a lidded container, shake to combine 62 grams of Dark Blue with 248 grams of Water Clear. Place this into the base mold. Fire the two molds according to the Casting Schedule.

After the kiln has cooled, remove the pieces. If there are any rough edges, smooth them with a power grinder or diamond pad. Fire polish as described above.

Using a glass nipper, cut the Wavy Firestick on clear into the sections necessary to create an arrow. Glue the dichroic pieces – dichroic side down – onto the lid with small dabs of white glue. Place the lid in a freshly cleaned and primed mold. Fire according to the Tack Fuse Schedule.



### Spiral Heart

Both the lid and base are made from the same 30%/70% Grenadine and Water Clear mixture. Create enough mixture for both molds by adding 132 grams of medium Grenadine with 308 grams of medium Water Clear to a large, lidded container. Cover the container and shake. Wearing a dusk mask, weigh out 130 grams for the lid and place it in the mold, slightly mounding the frit. Place the remain frit in the base mold, again, slightly mounding the frit.

Break scrap dichroic glass into coarse pieces. Create frit balls (see above) making sure to place the coarse pieces, dichroic side down, on the ThinFire paper. Fire both molds and the dichroic pieces according to the Casting Schedule.

Cool the kiln completely and remove the castings. Grind any spurs off using a power grinder or diamond pad. If necessary, fire polish the pieces as described above.

Clean and reprime the lid mold. Place the lid back into its mold and arrange the dichroic spiral and frit balls in a pleasing way. Hold them in place with small amounts of white glue. Fuse the glass pieces in place using the Tack Fuse Schedule.

### Base Feet

Give cast boxes a professional finish with the addition of feet. Use peel-and-stick, silicon cabinet bumpers, e.g. 3M Bumpon™, available from most hardware stores. This will also protect tabletops.