

S205 BinaSphere Mold

It's Two Molds in One

Use this Double Sided Mold to Create an
11 1/4" (28.5 cm) Footed Bowl or an 11 5/8" (29.5 cm) Footed Platter



Footed Bowl side of BinaSphere Mold



Footed Platter side of BinaSphere Mold

BinaSphere Mold Process Overview

The Binasphere Mold enables users to create either a footed bowl or a footed platter using only this mold - plus fusing glass and mold release. Here's the three-step process.

1. The first step is to cast a glass foot disk directly in the foot cavity (the casting reservoir) of the BinaSphere Mold, using scrap glass shards or glass frit.
2. Then design and fuse a 12" (30.5 cm) diameter flat design disk. This could be a single layer 12" (30.5 cm) disk with fused design elements or create a two layer, full-fused design disk, or simply cut a 12" (30.5 cm) circle from a compelling piece of fusible art glass and let the design in the glass and the foot on the bottom, be the star.
3. The final step is to slump the design disk into the Binasphere Mold to shape either the bowl or the platter while at the same time attaching the cast glass foot by fusing it to the underside.

Register Your BinaSphere Mold and Get 2 FREE eProjects

Go to the www.joyoffusing.com website then click on *Register Your Mold*. Fill in the short information form and we'll send you an email with a link to download two complete eProjects for the Binasphere Mold. An eProject includes a PDF eBook with detailed step-by-step instructions, the full-size pattern drawing (that you can print on your desktop printer) and a link to the online *Webcast* video where you can watch the project fabrication from beginning to end. Registration is easy and the reward is worth it - so what are you waiting for?

MUST READ SECTION! - Separation of Glass and Mold

The first step, as always, is to prepare the mold with the appropriate release separator. The BinaSphere Mold is manufactured with a unique capability - it is both a slumping mold and a casting mold. Glass casting requires a relatively high temperature and this higher temperature increases the tendency for the glass to stick to the ceramic mold. Glass stuck to the mold is never good and that's why it's extremely important to use the appropriate mold separator for this high temperature process. Even though the casting is done only in the disk-shaped foot cavity (on both sides of the Binasphere Mold) you must use the same high-temp separator to coat both the casting and slumping areas.

There are two general categories of release separators that are used on ceramic molds. One is a ceramic powder-type separator (aka shelf primer or kiln wash) and the other is



ZYP a Boron Nitride Mold Release spray

boron nitride. The only separator that we use for all the molds in our studio is ZYP™ (formerly MR-97). This Boron Nitride separator comes in a convenient spray can and works fabulously for casting or shaping glass. New ceramic molds require 2 coats of ZYP™ with only a 20 minute drying time. For subsequent firings simply remove the loose powder from the surface with a soft bench brush then apply one quick touch-up spray coat. **IMPORTANT NOTE:** ZYP™ has a high concentration of boron nitride and is the **ONLY** spray-on boron nitride that will protect a ceramic mold during glass casting - glass will stick and damage the mold if using any other brand.

We have not tested a ceramic powder-type separator on the BinaSphere Mold. If you are intent on using a kiln wash type separator please be aware that most do not adequately protect ceramic molds at the higher casting temperatures. We know of two powder-type separators that were formulated to work at casting temperatures, they are Primo Primer™ & Hi-Fire™ both are made by Hotline. If you choose to use a powder-type separator, please factor in the risk/reward and make a carefully informed decision.

To read some mold misadventure stories and a few possible recovery strategies, please see the FAQ section on our website... www.joyoffusing.com

IMPORTANT NOTE - About Kiln Temperature Variations

Experienced fusers know that pyrometers and digital controllers are calibrated differently for every kiln. The temperatures shown in the schedules in this booklet (and also in our book Joy of Fusing) were carefully researched to be the average temperature for kilns manufactured for glass fusing. The reality is the temperature in your kiln is likely to be 5° to 20° higher or lower than our schedules (and could be off by as much as 50° or more). That is why it is extremely important for you to know your kiln and the best way to do that is to create a Fusing Level Sample Set. The process and schedules to create one of these 6 tile sets is in our book *Joy of Fusing*. This book is available for purchase as a printed book or as an eBook download or choose the Fusing Level Sample Set eProject all are available at our website: www.joyoffusing.com

The disk-shaped cavity in the center of both sides of the Binasphere Mold is called the casting reservoir. Whether you intend to create a bowl or a platter the first step is always to cast a foot. The foot must be cast in a separate firing from the slump shape firing, since casting temperatures are significantly higher than slumping temperatures.

Prepare either the bowl or platter side of the Binasphere Mold using ZYP Lubricoat Boron Nitride spray (see Separation section at left). Then use mosaic nippers to break scrap glass into shards from 1/4" to 3/4" (6mm to 20mm). An all clear glass foot is classic but a mixture of clear with a complimentary color from your design can make a very impressive alternative.



Measuring 275 grams using a digital scale



Filling the casting reservoir with clear shards

Place an empty container (such as this yogurt tub) on a digital kitchen scale and zero the tare weight then place 275 grams of glass shards in the container. Now place the Binasphere Mold in the kiln then fill the casting reservoir with the shards.

ProTip: Start with a ring of glass shards standing on edge around the perimeter of the casting reservoir to act like a funnel to contain the remainder of the shards. Then set the kiln controller to fire the Casting Schedule, shown at right. Please read the Important Note about Kiln Temperature Variations on the previous page.

Foot Casting Schedule				
Segment	#	Degree/Hour	Target Temp	Minutes
Primary Heat	1	300°F - 165°C	1200°F - 650°C	30
Intention Heat	2	600°F - 325°C	1485°F - 805°C	45
Rapid Drop	3	Full/AFAP	950°F - 510°C	60
Anneal Cool	4	75°F - 40°C	800°F - 430°C	10
Power Off	5	Kiln Off	Room Temp	~



Cast glass foot disk made using 275 grams of scrap

Free ePattern Download

Download the Full-Size Pattern for this Sedona Platter at: www.joyoffusing.com then click on Instruction Booklets for Fusing Molds under the Support Tab



Create a 12" (30.5 cm) diameter design disk



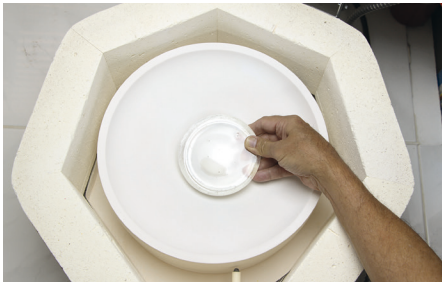
The Sedona design disk ready for fuse firing

Slump Fire to Shape the Bowl or Platter and Attach the Cast Foot

Dry brush the inside of the mold to remove the loose boron nitride powder (be sure to wear dust mask when cleaning or applying mold release). Then spray-coat the entire inside surface of the mold with ZYP mold release (see Separation section on page 2).



Brush the inside then coat with mold separator



Place the pre-cast foot disk into the reservoir



Center the pre-fused disk on the upper flange



The slumped platter still in the kiln after firing

Carefully place the cast glass foot disk back into the casting reservoir (Note: cast disks from the bowl side and platter side are not interchangeable). Then place and center the pre-fused flat design disk on the upper flange of the Binasphere Mold.

Now, set your kiln controller to follow the forming schedule shown below. It is *very important* to follow the recommended initial ramp speed of 50°F (26°C) per hour and the secondary ramp speed of 200°F (108°C) per hour. This slow-heat speed is essential to harmonize and maintain a balanced temperature between the fused design disk and the ceramic mold.

Caution: If you do not follow this extra slow ramp speed you run a very high risk of thermal shock to your design disk.

BinaSphere Forming Schedule

Segment	#	Degree/Hour	Target Temp	Minutes
Primary Heat	1	50°F - 26°C	500°F - 260°C	20
Secondary Heat	2	200°F - 108°C	1000°F - 538°C	10
Intention Heat	3	600°F - 328°C	1270°F - 672°C	10
Drop to Anneal	4	Full/AFAP	950°F - 510°C	180
Anneal Cool	5	50°F - 26°C	750°F - 400°C	0
Power Off	6	Kiln Off	Room Temp	~



The completed Sedona Platter with Cast Foot

Free Video & eProject: Download other eProjects for this mold that include a fabrication video by registering your BinaSphere Mold at: www.joyoffusing.com