GlassCast®

THE CLEAR CHOICE IN RESIN

HOW TO CREATE

PETRI DISH RESIN ART

FOR USE WITH STARTER KIT

Petri Dish Art Starter Kit Instruction Guide

Contents

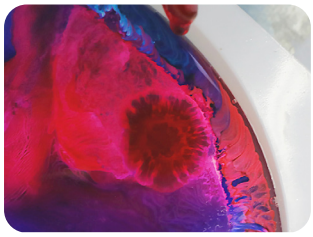
Introduction

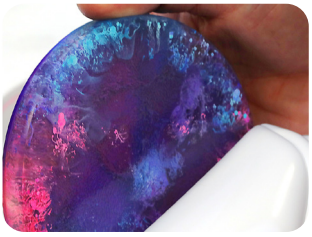
The aim of this guide

Resin Petri Dish Art has become increasingly popular in recent years, made famous by Josie Lewis who creates stunning 'Petrified Rainbows' using epoxy resin and alcohol inks.

It's easy to create striking, individual pieces that can be used as coasters or mini pieces of Art in their own right, they're a great way to inject a pop of colour into a room and the processes and techniques in this instructional guide can be upscaled or downscaled to produce larger pieces of art or smaller pieces like jewellery.

This complete kit includes enough to resin to create four - six castings/coasters (dependent upon the depth cast), a reusable 3 cavity silicone mould and four Pinata Alcohol Inks (which will last much longer) including the essential white 'Blanco Blanco' Ink and the accessories required to complete the project.





What You Will Need

Resin, Pigments and Effects

GlassCast Petri Dish Art Resin Starter Kits contain the required resin, hardener, alcohol inks, silicone mould and ancillary items you will need to create four - six coaster sized castings.

This instructional guide can be used even if you're not using a bundled kit, if that is the case then you will need the following:

Materials

- GlassCast® 10 clear epoxy casting resin (including hardener)
- Your choice of alcohol inks

Ancillaries

- Digital scales
- Mixing cups
- Mixing sticks
- A Silicone Mould(s)
- Nitrile gloves, glasses/goggles and a vapour mask (in case of insufficient ventilation)

Finishing or Polishing (if required)

If you find yourself with marks or blemishes to correct, or edges that require attention you may also need:

- Additional abrasive papers (240, 400, 800, 1200)
- Polishing compound
- Polishing rag (such a microfibre cloth)

Planning the Job

Working out the Volume

In order to work out the volume of the mould (in this case one of the coaster sized cavities) you will need to know the following:

The r=radius (measurement from the centre of the mould to the outer edge) and the h=height in mm.

The sum to calculate volume is: $V=\varpi r^2 h$

$3{\cdot}14 \times 50mm^2 \times 10mm$

This means that we will need 78.5ml of resin which we can round up to 80ml. The 80ml can be roughly converted to 80g for each cavity. If you ensure that you pour to a maximum 10mm depth per cavity you will have enough GlassCast Resin to pour 6 pieces in this size mould.

If you wish to pour all three castings in the mould supplied in the kit you will need 240g Glasscast 10 per 3 castings.

IMPORTANT SAFETY INFORMATION:
GlassCast 3 is a chemical product. Before storage or use you must download and read the accompanying safety datasheet.

A Summary of the most important information is as follows:

·Always wear nitrile gloves when handling the resin or hardener

·Never touch uncured or partially cured resin with your bare skin

·Wear suitable eye protection when handling the resin or hardener

Although GlassCast 3 Resin is solvent free and has almost no odour you should still work in a well ventilated area or wear a vapour mask.

How to Correctly Mix and Pigment Epoxy Resin

Whenever you prepare a mix of GlassCast resin, it is essential to ensure that you follow the correct procedure for measuring and mixing the resin. Failure to do so can result in improperly cured resin, or sticky patches and streaks on the surface.

Resin to Hardener Mix Ratio

GlassCast 10 uses a 100:45 mix ratio, by weight. For this project you would need 55g Resin (part A) and 25g Hardener (part B) to make up the 80g required for each cavity, you can easily double or triple the quantities for the other cavities. It's important to be as accurate as possible, ideally to within 1 or 2 grams; this will ensure the best possible performance from the cured resin.

Different resins use different mix ratios, never use the mix ratio for another resin and never attempt to add more or less hardener to speed up or slow down the reaction; that's not how epoxies work If you are using a GlassCast Countertop Kit then all resin and hardener measurements are done for you; simply weigh out the amounts listed on your kit's 'Colour Card' at each stage of the process.

How to Mix

GlassCast 10 should be always be mixed slowly and steadily by hand to avoid adding unwanted air bubbles into the mix which in turn makes it harder for the resin to degas itself. Always mix using a thorough, methodical action, ensuring that you regularly scrape the sides, bottom and corners of the mixing bucket, as well as the mixing stick, to ensure the resin and hardener are thoroughly combined.

Having mixed the two parts together for around 3 mins you should then transfer to a new pot and mix again as follows;

Double Potting

Whenever you mix GlassCast 10 epoxy resin with its hardener, we always recommend using the 'double potting' method. Double potting is the process of mixing resin and hardener thoroughly in a first pot or bucket before transferring the mix into a second clean pot and mixing again.

The idea of this process is to ensure that any unmixed resin from the bottom or sides of the pot do not make it out onto your project. This is particularly important when working with resin as any unmixed resin will not cure and will leave sticky patches or streaks on your otherwise perfect casting.

Working Environment

Ambient Temperature, Pot-Life and Cure Time

Epoxy resins are highly sensitive to ambient temperature and moisture.

To achieve the best results, we recommend working in a room temperature of 20°C. GlassCast 10 can be used in temperatures from 15 to 25°C but higher temperatures will reduce the pot-life of the resin significantly; see below.

Ambient Temperature	15C	20C	25C
Pot Life	60 mins	45 mins	30 mins
Initial Cure	48 hours	36 hours	24 hours

Epoxy resins are very susceptible to moisture so it's important to make sure the environment is dry and heated.

Airborne Dust and Contamination

Whilst the resin is still in the early stages of its cure, it is important to keep airborne dust and contamination to a minimum. Before you begin you should ensure that the area you're working in is as free as possible from dust and dirt.

Although you need good ventilation whilst you're working, in order to minimise airborne dust and contamination, it's best minimise air movement or disturbance in the room as soon as you've finished working.

Avoiding Overheating / Exotherm

The GlassCast range of resins, in common with all epoxies, generate heat as part of the curing process. In order to ensure that the resin does not overheat during mixing and curing, it is essential to make sure you stay within strict limits of ambient temperature, time-in-pot and pour depth, as well as avoiding localised overheating from direct sunlight, nearby radiators or heat guns/hair dryers. Failure to do so could result in damaged resin, or in extreme cases, resin smoking or igniting.

The recommended working temperature for GlassCast is 18-20°C. When working in higher ambient temperatures, pay attention to the reduced pot-life and maximum pour depth, as shown below.

Ambient Temperature	**15°C** (minimum)	**20°C** (recommended)	**25°C** (maximum)
Maximum Time in Pot (Pot Life)	60mins	45mins	30mins
Maximum Pour Depth	10mm	10mm	6mm
Initial Cure Time	48hrs	36hrs	24hrs

Ambient Temperature

Epoxy resins are highly sensitive to ambient temperature (room temperature) throughout their cure. For best results, we recommend working in a consistent room temperature of 18-20°C. GlassCast can be used in temperatures from 15 to 25°C but higher temperatures will reduce the pot-life and the maximum pour-depth of the resin significantly. Never work in ambient temperatures exceeding 25°C, or exceed the maximum pour depth for a given ambient temperature (as shown in the table above) otherwise the resin could dangerously overheat, especially on larger pours.

Maximum Time in Pot (Pot-Life)

As soon as the resin and hardener are mixed together, the curing reaction begins. Due to the volume of resin all in one place, mixed resin in the pot will begin to gradually warm up. The amount of time that mixed resin can stay in the mixing pot before it overheats is known as its pot-life. Once you've mixed your resin, make sure you use it within the pot-life stated for your ambient temperature (see table above). Once you're done, if you have more than the maximum pour depth of leftover resin in the pot, place the pot outside - just in case it starts to overheat.

Maximum Pour Depth

The thicker the pour, the more the heat builds up as the resin cures and so it is important to stay within the maximum pour depth for the ambient temperature you're working in. Care needs to be taken when pouring into or around insulating materials such as wood or foams as they will retain

Localised Heat Sources

Whilst close attention should be paid to the ambient (room) temperature, it is also important to avoid any localised heat sources which can also cause an exotherm. Examples of localised heat sources include:

- A hot radiator at one end of a cooler room
  If the resin project is positioned above or near the radiator it could start to exotherm, even though the room temperature is within the recommended limits.
- Direct sunlight from a window
  Sun shining through a window onto your resin project or surrounding area can cause significant hot-spots which can easily cause the resin to exotherm, even in a relatively cool room.
- Heat-guns or hair dryers
  If using a heat-gun or hair-dryer as part of your resin project, do so sparingly to avoid warming up the resin significantly. Excessive use of a heat-gun or hair dryer can easily accelerate the cure and cause the resin to exotherm.

Step-by-Step Guide

1. Prepare your Work Area

Prepare your work area, making sure that you have protected the surface that you will be working on and also checked that it is completely level before you start work.

TIP:

It's also useful to have a timer (a phone will suffice) and a clean expty box that will fit over your project to protect it during the cure.

2. Measuring and Mixing the GlassCast 10

Carefully measure out the correct quantity of GlassCast 10 for the project and follow the mixing and double-potting instructions on page 6.

Take care not to add unwanted air into the mixture and ensure your mould is clean and ready to use.

3. Pouring the Resin into the Silicone Mould

Pour the mixed resin into the mould - filling to 10mm in depth.

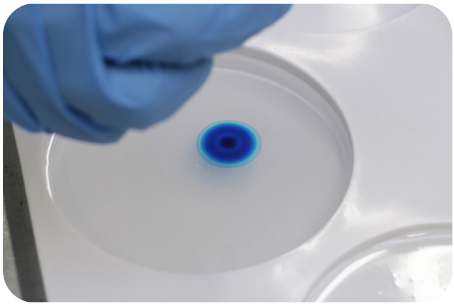
You will now need to leave the resin to stand for approximately 20 minutes.

By leaving the resin to stand it allows any bubbles to pop and the resin to become less viscous which changes the flow of the ink in the resin.

4. Adding the Alcohol Ink

The overall effect will of course be down to personal preference depending wheter you wish to have any clear areas of resin showing or you prefer the coaster to be completely filled with colour. The white alcohol ink 'Blanco Blanco' is an essential ingredient in the petri technique. This is due to it's density and it is this ink which helps the other colours move around, or sink in the resin which is a

must when creating these techniques to create the tubular effects like a mini coral reef!



Drip the ink into the resin at a ratio of 1 part white to 2 parts colour, it's important to drip the coloured ink in first as shown in the image to the left.

The example in the image was created as follows:

2 x drops BLUE

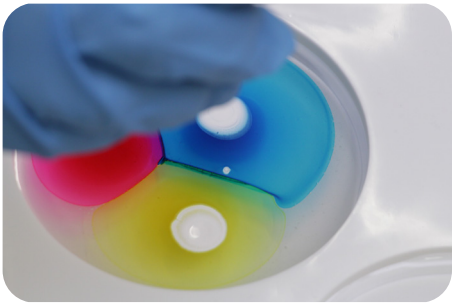
2 x drops YELLOW

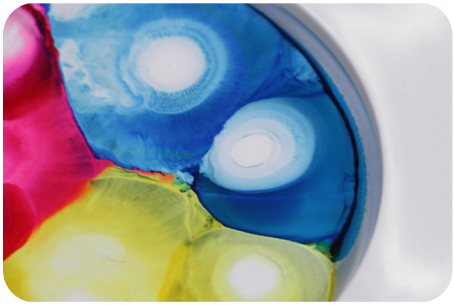
2 x drops PINK

Followed by 1 x drop of WHITE on top of each colour

Then repeat process as desired.

The amount of ink you require will depend upon the effect you are trying to create, if you want to have areas of clear resin, use less ink.





The maximum amount of alcohol ink required for a coaster is 40 drops in total - this will result in a highly coloured effect, so if you wish to have less colour then use less alcohol ink.

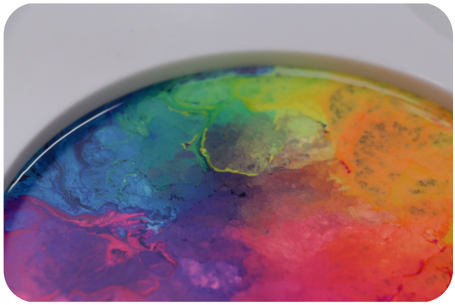
You can adapt the process for bigger projects, for example a 20cm diameter placemat of the same design would need a140 drops in total.

It's possible to introduce more colour variations from the kit by dripping the yellow and blue together to give a green and the pink and blue to achieve a purple.

You will notice that the alcohol ink appears to bloom in the resin and this 'blooming' will continue for some time after it's dripped into the resin.

The image to the left is a short while after.

5. Curing and Finishing



When you have finished your piece either move on to the next casting and begin the dripping process again.

Then carefully cover to stop dust and dirt landing in the resin and leave to fully cure for a minumum of 36 hours in an ambient temperature of around 20°C. After 24 hours your coasters will be ready to remove from the mould. Check with a gloved finger to make sure that they are fully cured before demoulding.

Carefully peel away the silicone mould and remove the casting, you should be able to see all the amazing effects of the alcohol ink in the resin.

If you are going to use your castings as coasters you may wish to add some silicone stick on feet that will protect the surface you place the coaster upon.

6. After Care and Alternative Projects

Here are a few important things to keep in mind when looking after your epoxy resin castings:

• Hot Objects - You should not place hot objects directly on to the resin (pots, pans, plates or mugs) as this may mark the surface. Instead use coasters or heat proof mats. If you do find that hot objects have marked the surface it can be flatted and polished again to remove any marks.

• UV Light - GlassCast® 10 has been designed to have the best UV stability of any epoxy resin on the market and should withstand years of indirect sunlight with very little effect. However, common with just about all materials of this nature, prolonged exposure to UV light, particularly direct sunlight, can eventually cause some change in the appearance of the resin. Alcohol Inks can leach colour over time due to UV so it's advisable to keep them out of direct sunlight where possible.

• Scratches and Marks - GlassCast® 10 is a very hard wearing plastic and will hold up to the rigours of light daily use without marking. Any damage can be polished out using abrasive paper (working through the grits if the scratch is deep) and/or by polishing using compound to restore the gloss.

Flammability

Please be aware that being alcohol based, the Pinata alcohol inks are highly flammable – do not use a blow torch or use a heat gun on the inks and avoid any naked flames.

Alternative Colours and Projects

As mentioned previously it's easy to upscale the coaster project to placemat sized castings as detailed on page 9.

More colours in the alcohol ink range are available to purchase to ensable you to achieve different colour schemes and effects but remember it's essential to have the white ink to gte the great effects.

Our friendly team are on hand to answer any questions you may have and if you have created your own Resin Petri Dish Art (or other project) using GlassCast Resin we'd love to hear from you!