



PYROS GLASS STUDIO

706 South Plain Street
Ithaca, NY 14850
Tel. (607) 272-4311
<http://www.pyrosglass.com>

PYROS TECH NOTE #4

How to use Pyros Ultrabind in Freeze 'N' Fuse™ projects

Pyros Ultrabind is a non-toxic, ultra-thick organic binder that burns out cleanly at temperatures below 1100 degrees F. It can be used in several ways to produce interesting designs in Pâte de Verre pieces.

About Pyros Ultrabind

Pyros Ultrabind is a blend of water-soluble vegetable gums, and is provided as a powder which can be mixed to any desired consistency. The shelf life of the powder is at least five years when kept tightly closed.

For a gel that you can use in syringes or pastry tubes, use a 5% solution, *by weight*. There is some variation between batches of powder, so the proper proportion by volume will be between 1 and 2 teaspoons per 1/4 cup of water. A good rule is that a one-ounce bottle of Ultrabind makes two and a half cups of gel. You can use a pen to mark the sides of the jar. Unused gel can be tightly covered and kept in the refrigerator for several months.

How to mix Ultrabind Powder

Unlike most things, Ultrabind does not dissolve in hot water. You can use this fact to help you mix solutions. For example, to make 1/4 cup of solution, start with one ounce of hot water. Add Ultrabind and stir to disperse the crystals. They will not dissolve. While stirring, slowly add one ounce of ice water. Continue stirring until you have a syrupy mix. The crystals will completely dissolve within an hour and form a clear gel.

Burning out Ultrabind

When firing projects with Ultrabind, hold your kiln at about 1050 until the Ultrabind is completely burned out. **CAUTION: Ultrabind emits smoke when burned. Air is essential to proper burnout, so open kiln vents completely, and always burn out any binder in a well-ventilated area.** When Ultrabind burns, it first produces carbon, which will color pieces black. This is normal; just hold the temperature constant and this will burn away, leaving pieces their natural color.

Using Ultrabind Gel

Add Ultrabind gel to glass powder to make a paste that can be pushed through a pastry tube or syringe. Mixing is easiest on a flat piece of glass using a palette knife. The consistency should be like firm cake icing. You have the right consistency if a palette knife placed flat on a mound of the mixture can be pushed slowly but firmly all the way down through it to touch the glass surface. If the palette knife will not push all the way through, add more gel. The paste should form peaks that hold their shape and do not sag. If the mixture sags excessively, add a bit more glass powder.

Ultrabind paste is very sticky, and can be used in various ways. You can spread it with your fingers or sculpting tools on the surfaces of molds, or you can place the mixture in a syringe and use it to draw designs. If using

Ultrabind in Freeze 'N' Fuse™ projects, allow gel to dry for at least an hour before packing your mold with more glass. Paste can also be used for palette knife techniques.

Using a pastry tube and decorator tips, you can pipe free-form designs onto a kiln shelf. Thick Ultrabind solutions form solid gels at temperatures above 100 degrees. If you pipe glass onto a warm kiln shelf, the most precise details of your design will be preserved. Let designs dry completely before firing. Hold kiln at 1050 degrees on the way up until Ultrabind is completely gone.