Bead Releases Basics

There are no bad bead releases ... if you know how to use them.

By Robin J. Foster of FosterFire, Inc.

Bead release or bead separator could be defined as any material that allows the bead to be removed from the mandrel either before or after annealing. To the best of my knowledge, all bead release formulas are variations on formulas for kiln wash. Kiln wash is a powder that is mixed with water and painted on kiln shelves to prevent accidental glaze drips or clay articles from sticking to the kiln or kiln furniture. In the same way, kiln wash keeps beads from sticking to the mandrel. Although kiln wash does work, it isn't designed for the stresses applied while building a bead and several companies produce commercial bead releases that offer a better solution.

Bead releases can be generally divided into those with graphite, those without and those specifically designed for boro users. Most bead releases without graphite start out white and may be colored with dyes. Generally if it's pink, purple or chartreuse then a colorant has been added to the mix. Kiln wash has a colorant added deliberately so that the user can tell if the kiln wash has been fired. When first painted on it's pinkish-purple, when fired it becomes white. With these types of bead releases it is not necessary to heat to dull red glow before applying the glass. As long as the release coated mandrel has been heated in the flame then the glass can be applied. These releases have the advantage of extremely easy removal of the beads. Their disadvantage is the possible breakage of the bead release during the bead making process. The most common error with this types of releases is using them too thick.

Releases with graphite added will usually be medium to dark gray in color. The theory is that the graphite acts as a lubricant to better allow the bead to slide off. Generally, the mandrel is heated to a dull red glow and the glass is immediately applied. One mistake that beginners make is to heat to a dull red glow, allow the mandrel to cool, then heat again and apply the glass. These releases have the advantage of being designed to take more heat and sometimes more stress. Their disadvantages being higher cost and greater difficulty in removing the beads.

Bead release works by having some portion of the mixture containing a material that changes over a period of time with the application of heat. Most contain various types of clay, which starts to shrink as it gets fired. The amount of clay in the bead release mixture will determine the amount of shrinkage of the bead release. Boro users work at higher temperatures causing the firing process to take place more quickly. The longer the heat is applied, especially if directed at the release rather than the glass, then the greater likelihood of the bead release breaking. Heavy duty and boro formulas generally have less clay and substitute materials that are better able to withstand the higher temperatures.

Bead releases are suspensions rather than solutions. A solution is like sugar in coffee. Once it's mixed, it stays mixed. A suspension is like muddy river water. At first it looks mixed but after awhile it settles out in layers. For this reason it is best to mix the bead release each time before using, either by shaking or stirring. For more efficient mixing, it helps to add a few old beads or marbles to the container so assist in the mixing action and help break up any lumps. (Note: use round smooth beads, not ones with protrusions that could be broken off in the mix.) It is perfectly acceptable to add water to your bead release. The usual recommendation is to have your release the consistency of pancake batter.

Bead release can be stored at room temperature in most climates and if stored with the container upside down will have much less tendency to dry out. Although it can be used after being frozen it may need to have water added to regain the necessary consistency. Bead release should not be left in an area where the temperature gets over 160 degrees for any length of time. An example of this would be a closed vehicle in the summer in Phoenix. The bead release will actually become partially fired over a period of hours and essentially useless.

There are few rules when using bead release. In general, anything that allows for the bead to be removed and is safe, is acceptable. However, there are some guidelines it is wise to follow. When removing the bead from the mandrel or cleaning up spilled release, it is best to avoid breathing the dust by using the simple expedient of wetting the bead release. I can only speak to the ingredients of our product, FosterFire Regular and FosterFire Heavy Duty but the dust from bead release is less hazardous (according to the EPA) than breathing household dust.

For bead makers who suffer form carpal tunnel syndrome, arthritis or who may have nerve damage, there is a way to use the release to help gain better traction and reduce the possibility of dropping the mandrel. The mandrel can be dipped so that greater than half the length of the mandrel is evenly coated with the release. This offers several advantages,

although it necessitates allowing the mandrels to air dry. The non-dominant hand holds the end of the mandrel that is coated with the dry release. The texture and additional thickness allow for the bead maker to have a better grip on the mandrel. This also allows the bead maker to switch hands when applying decoration. Then both sides of the bead can be decorated with the dominant hand.

General tips and tricks:

◆ Make sure your mandrels are clean and dry.

◆ When working with boro, keep the flame more focused on the glass. All bead releases will crack sooner or later under intense heat.

◆ If working with soft glass and getting a lot of bubbling, then make sure to heat the location where your initial gather of glass is going to go very thoroughly.

◆ For extra smooth holes on transparent beads just "sand" the release slightly with your finger or another mandrel to knock off some of the roughness.

◆ If you see a ridge forming on your mandrel immediately after dipping, then wipe it off and dip again. That ridge can break off and any bead built on it will most likely come loose and become a "spinner".

◆ If it doesn't say "flame dry" on the label, then it isn't.

Some tips and tricks for using non-graphite bead releases:

◆ Avoid using these releases too thick. Symptoms of having your release too thick include cracking, flaking and bits of the release flaking or even seeming to jump off. This is usually due to trapped air pockets under the thick coating of the release. Especially if you are working with soft glass then you can use these types of releases so thin they will almost seem transparent when wet.

Some tips and tricks for using bead releases with graphite added:

◆ Remember to heat to a dull red glow and then apply the glass immediately. For additional tips check the manufacturer's web site.

If you have questions on the use, storage or consistency of the release you have purchased, if you have safety concerns, if the release is not performing as you think it should then your best recourse is to contact the manufacturer. They will be the most familiar with their product and be able to offer the best advice. If you are unable to contact the manufacturer then your next best source of information is the store or business where you purchased the product.

About the Author:

Robin J. Foster is a lampwork artist and president of FosterFire, Inc. Her soft glass beads have featured in Lapidary Journal's Step-by-Step Beads Magazine, "1000 Glass Beads" published by Lark Books and her boro beads were juried in to the Int'l Glass Beadmakers Society's "Boro Bead Extravaganza". Her background includes network engineering, programming and aerospace configuration analysis.

FosterFire, Inc. is a woman owned, family operated small business since Aug 2002 and is the collaborative result between the artist and the manufacturing engineer who married her. Robin has been known to joke that it's a good thing she married him because it would too expensive to hire his consulting services! Research and testing are a continuing part of the ongoing efforts at FosterFire. FosterFire strives to create a quality product that has minimal impact on the environment. There are no artificial colors or unnecessary ingredients in the FosterFire bead releases all containers are recyclable and whenever possible packing materials such as peanuts and bubble wrap are reclaimed from materials that might otherwise go into a landfill.

Robin and Glen Foster live and work in Mesa, AZ with their 2 Springer Spaniels Mac and Harry, whose interchangeable job titles are VP of Security (job duties: barking) and VP of Morale (job duties: tail wagging).

To learn more about Foster Fire Products please visit www.fosterfireglass.com or call 480-844-1595.