

FIRING GEMSTONES AND NATURAL STONES

Laboratory Grown Gems

The gems that you can count on to fire and which will not change color, crack or melt are man made, laboratory created stones. They are the same chemical composition as the natural stones. They are perfect, without inclusions, and made under tremendous heat. This speeds up the process that, in nature, takes thousands of years. Because they do not have inclusions, the heat of the firing will not fracture the stones. At the same time, you must be careful not to cause thermal shock by reducing the temperature of the piece too rapidly after firing. This can result in damaged stones.

TIP: Allow creations with stones to cool slowly between two pieces of fiber blanket.

Synthetic

Synthetic is a term that can mean any type of man made gemstone. This could be a duplicate of the chemical and physical properties of the natural stone or an imitation of the natural stone through the use of other materials, such as glass or even plastic. Therefore, you need to ask for laboratory grown stones.

Be careful of doublets. They may be laboratory grown but have two layers. The bottom layer usually is colored while the top layer is clear. The top clear layer may melt. This, however, can be an interesting technique if you know it is going to happen. Examples of gems commonly duplicated as doublets are emerald and peridot.

Cubic Zirconium

CZ's are beautiful in the clear form and look like diamonds. Most of the colored CZs fire well. We have encountered a few CZ's that have changed colors. For example, a red CZ may turn brown. You will need to experiment. If you need a particular color to be reliable, it is better to use laboratory grown gems.

Natural Stones

You can fire some natural stones but usually they are at least a 7 on the Mohs scale. This would include stones such as granite, quartz and the corundum family. Bone, fossils, turquoise, etc. are low on the Mohs scale and will fracture and even powder in the kiln at 1470°F.

If you really want to try a stone to see if it will work, prefire your stone at 1470°F for 30 minutes for Standard Clay or 1200°F for 30 minutes for 650/1200 Low Fire Series clay. If the stone is too soft or too precious to test, then plan on a setting where you can set the stone after the firing. You can set fine silver bezel wire into the Art Clay and fire it in place. Art Clay also has pure silver settings for certain sizes of faceted stones (check the Art Clay catalog for available sizes and shapes). After firing, set the natural stone using traditional jeweler's techniques.

Most of the colored gemstones, especially those below 7 on the Mohs hardness scale, cannot withstand the temperature needed to fire Standard Series Art Clay Silver or Art Clay Gold. Typically these stones have natural inclusions (unless they are a perfect stone). The inclusions in most natural stones have a different rate of expansion than the surrounding material. When you heat these stones, the different rates of expansion can result in cracks or splitting of the stone. Perfect stones do not have this difficulty. Using 650/1200 Low Fire Series will increase the variety of gemstones that can be fired in place.

Traditional gemstones, however, are not the only material that you can include with Art Clay. After completing our initial testing of gemstones for use with Art Clay, we turned our attention to other stones: river rocks, driveway stones and those great rocks you pick up while hiking on vacation. The artists at Aida's studios have been using this type of material successfully and having great fun.

Many of these are rocks such as granite. Surprisingly, when fired they not only withstand the heat, they also can turn colors. Many have red iron oxide, which makes a handsome stone when fired. Wrap them in fiber blanket to protect your kiln and fire to 1472°F for 30 minutes or 1200°F for 30 minutes depending on which Clay Series you will be using. Use a slower ramp speed (1500°/hr) to allow moisture and air to escape from the stone(s). Let them cool to room temperature inside the kiln. See what treasures you might find. This is a great project for kids, camps, schools, or as a sentimental keepsake from a special trip.