



## FAQ

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### What COE are you?

We are tested compatible with Effetre clear (product #004) since it is the largest volume "104" soft glass in production at this time. We use Polarimetric strain testing to ensure that there is minimal strain between our colors and Effetre clear. Polarimetry gives us specific data regarding strain in psi between two fused samples. We believe this is the most accurate measure of compatibility. COE (dilatometric) testing does not guarantee compatibility and can produce data with margins of error ( $\pm 2$ ) that are equal to the acceptable tolerance ranges ( $\pm 2$ ). To read our article "One Manufacturer's Perspective on Compatibility", which you will find on our Tutorials page (under the Information tab above).

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### What other glass manufacturers can I use your glass with?

Theoretically, our glass should be compatible with Effetre, Vetrofond, CiM, and other 104 glasses. Due to the variations between each color from each manufacturer, we cannot guarantee compatibility with every "104" glass on the market.

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### Are there any tips or tricks to reducing?

From descriptions sent in from various lampworkers I would suggest the following troubleshooting approaches:

- 1.) If your glass looks brown/gray/tan and you have not yet attempted to reduce it, you may need to turn up your oxygen, or turn down your propane. A flame that causes a metallic luster is not a "neutral flame".
- 2.) If your glass looks brown/gray/tan after reducing it, you may be overreducing it. Use less propane in your reduction flame, work further out in the flame, reduce for a shorter period of time, allow the bead to cool somewhat before reducing, check that you are using a neutral flame when not reducing, or all of the above.
- 3.) Please take a moment to watch our video tutorials on Flame Settings and Practing Reduction with Triton. They are available under the Information tab above.
- 4.) I prefer to make a small (10mm) ball on the end of a clear punty to test and practice with. This conserves glass, and also relieves me of the emotional attachment and time invested in a bead or sculpture. In this way I am able to test or practice striking a glass without undue loss of time or material.

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### How does striking work?

Silver glass strikes due to silver crystal growth. When the glass is worked hot, the silver crystals dissolve, yielding a clear glass. When the glass is reheated, crystals form inside the glass. These crystal lengths grow to the same size as various wavelengths of light. The color sequence of lengthening crystals is as follows: clear, yellow, orange, red, red-purple, purple, blue, green. When glass is worked hot ("reset") the glass looks clear. Due to ambient heat within the glass, the first stages of striking usually occur automatically, yielding yellow-orange-red, which all blend together to read as "amber" or transparent dark brown. As the glass is cooled and reheated, purples, blues, and greens are developed.

### Common Issues with Striking

If the glass is "bobbed" in and out of the flame, or worked for an usually long time in a cool flame, the crystals grow to random lengths, and reflect random wavelengths of light. This reads as an off-white, tan opaque color. The short answer to avoiding muddy khaki colors is to work hot, cool, and reheat gently to strike, while avoiding "bobbing" in and out of the flame.

If the surface of the glass is worked hot, and then directly annealed, a "reset" surface layer can exist which can strike to amber in the kiln. This sometimes occurs when

one strikes the glass nicely, and gives it a final fire polish before annealing.

If your striking glass stays a milky white color, it is probable that the glass has never been heated to the "reset" temperature. Heat it until the glass turns clear/transparent, or at least until the outer layer goes clear, then allow to cool until the glow is gone, then reheat gently to strike.

If the flame used to strike is too intense, or the bead is taken past the crystal's "reset" temperature during striking, the glass will continuously reset, yielding only a dark amber color. I prefer to make a small (10mm) ball on the end of a clear punty to test and practice with. This conserves glass, and also relieves me of the emotional attachment and time invested in a bead or sculpture. In this way I am able to test or practice striking a glass without undue loss of time or material.  
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#### What can I do if I'm losing the luster in the kiln?

If you are losing the luster in the kiln, you can do the following: 1.) lower annealing temperature 20 degrees. Your beads will still be annealed. 2.) decrease the time at annealing temperature. 3.) Place a small ceramic or stainless steel container in the corner of your kiln. Fill partway with activated charcoal from an aquarium supply house. This will absorb excess oxygen, and help preserve the metallic luster.

There is a more information on LE thread below.  
<http://www.lampworketc.com/forums/showthread.php?t=171169&highlight=luster+charcoal>  
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#### Is there lead in your glass?

We do not use lead in any of our glass compositions, and have recently had analysis done to test our colors for lead. All of our colors have practically zero lead content, except Gaia, which has slightly more than the amount that qualifies as "lead free", but still only a tiny fraction of the amount that is in "lead glass". Gaia is made from crushed Effetre Dark Emerald Green #591030. Kronos is made from Vetrofond Cobalt # 791060. Nyx and Olympia Rain are made from Effetre Clear #591004. These four colors predate the development of our proprietary custom batch. We have also developed Triton, Psyche, Aion2, and Oxalis as alternatives to the older cullet based colors. In all of our colors made from raw batch, we choose every ingredient that goes into them with the intent of avoiding any materials that are toxic to ourselves, our customers or the environment. We do not use cadmium, selenium, arsenic or antimony in any of our stock production colors, all of which are common in other glass compositions.

#### Lead Analysis Report

##### Sample Description: Total Lead (ug/g)

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Psyche <10.0  
 Kalyпсо 10.0  
 Nyx <10.0  
 Helios <10.0  
 Aether 14.0  
 Terranova 2 <10.0  
 Kronos 2 54.5  
 Terra 2 <10.0  
 Triton 10.0  
 Clio <10.0  
 Elektra 2 <10.0  
 Pandora 2 <10.0  
 Khaos <10.0  
 Luna 2 <10.0  
 Aurae <10.0  
 Aion2 <10.0  
 Ekho <10.0  
 Gaia 475

Note: CPSIA permissible limit for lead content is 300ug/g.

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#### What clear do you recommend?

We recommend using Zephyr, Aether, Effetre 004, or Vetrofond 004 for encasing. Here are a few links that refer to some reported problems using certain clears.

(copy and paste the urls into the address bar in your browser)

<http://lampworketc.com/forums/showthread.php?t=189306&highlight=aether>

<http://lampworketc.com/forums/showthread.php?t=143321&highlight=lauscha+crack>

<http://lampworketc.com/forums/showthread.php?t=174635&highlight=lauscha+crack>

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#### What annealing schedule do you suggest?

The annealing range that I work with has a very broad range, from 900F to 1000F. Higher annealing temperatures can cause surface luster oxidation (burn-off) in reduction colors, and color shift (over-striking) in striking colors. Annealing is a time/temperature relationship. Typically, the lower the temperature, the longer the soak time. Most small glass objects have had their strain relieved within 30 minutes at 950ish. Slow cooling then prevents the accumulation of additional thermal stress. Kilns vary to a certain degree in the temperature shown on the controller vs the heat-work at the location of the bead. Additionally, kilns do not hold a steady constant temperature. Almost all are relay-fired, turning on at 100%, then OFF, then on 100% in sequence to produce an average temperature equal to the setpoint. The actual temperature may spike to 1000, shut off, and fire again when the temp drops to 950, yielding an average temperature of 975. Better controllers, or those that have been tuned properly, will experience a more limited overshoot/undershoot, and therefore hold a more true setpoint. The best course of action is to estimate the appropriate temperature and time, note your results/issues, and adjust accordingly. I have never personally experienced luster oxidation in the kiln, and therefore do not set my annealer to a lower temperature. I typically anneal at 950, and shut the kiln off after an hour or two. If I am intentionally trying to kiln strike a color, such as Pandora2 or RH446, I might set my annealer at 1000F and leave it there for hours on end. If your beads are losing their luster, turn down your kiln. Some people place a small stainless steel dish of activated charcoal in the annealer to consume excess oxygen, preventing luster burn-off. When the Italian companies list their annealing temperature as 968F, I believe they are listing the technical annealing temperature which indicates strain relief in a 15 minute time period. Since many glass artists work for several hours at a time, a lower temperature can be used without fear of breakage. In short, if your beads are losing their luster, over striking, or if you are getting kiln-floor imprints on your beads, lower the temperature and/or shorten the total soak time.

If your beads are breaking, and they have been held at 900something or higher for at least 30 minutes, I would look into bead construction, thermal strain, chill marks, or incompatibility as the culprit.

I prefer to make a small (10mm) ball on the end of a clear punty to test and practice with. This conserves glass, and also relieves me of the emotional attachment and time invested in a bead or sculpture. In this way I am able to test or practice striking a glass without undue loss of time or material.

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#### I encased my bead with Aether, and the luster turned green. What's up with that?

Aether does contain certain chemical components that can react with metallic silver and cause a reaction. These chemicals also keep Aether remarkably free of seeds, and help to preserve the metallic sheen of the encased silver. The reaction often appears as a yellow/green tint. Working the encased bead hot often increases this effect. If you want to avoid that reaction entirely, we recommend Zephyr clear instead.

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#### I mixed up my rods without labels. How can I tell them apart?

Most of our colors have distinctive tonalities that make cold identification easy, but a few are similar enough to require a closer look, or a non-destructive flame test to determine. Our reduction colors have a more consistent rod tonality throughout a pot of glass than our striking colors do. Because the glass is striking as it cools in the pot while we pull it out, there is a normal variation in all of our striking colors rod tonality.

Gaia = transparent emerald green rods.

Kronos2 = transparent or opaque cobalt blue rods

Aurae = transparent dark pink rods

Kalypso = translucent orange / tan rods

Aion2 = clear rods with small air bubbles

Elektra2.1 = aquamarine blue rods

Terranova2.1 = brown-red or tan rods

Helios = transparent golden yellow

Clio = Transparent light blue/green in fluorescent light, and pink/lavender in incandescent light or sunlight

Pandora2 = Light Transparent Green

Aether = Clear rods, cut ends appear light blue, usually 6-7mm diameter.

Terra2 = Opaque tan rods with white flecks

Ekho = Transparent Amber to Opaque Tan Rods.

Luna3 = Transparent Amber rods, sometimes with thin veil of greenish tan on exterior.

When storing the easy-to-mix-up colors, like Triton and Nyx, you may wish to label each rod. I like to use the rod labels as a "wrap" on the end with just an initial like "T" or "N". That way the tag doesn't have a "flap" to mess with my rotation of the rod.

Psyche, Triton, and Nyx all look like black rods until held up to an incandescent light bulb. Psyche will transmit a dark amethyst/purple color while Triton and Nyx will transmit a dark cobalt blue. To tell Triton and Nyx apart, place the tip of a rod in a reduction flame. Triton will luster to a clean chrome whereas Nyx will have a dirtier, greenish reduction. A rod of Nyx will also turn blue when annealed for an extended period of time.

Aion2, Aether and Zephyr are all transparent rods. To tell them apart, look at the end of the rod. The ends of Aether will be blue, and the ends of Aion and Zephyr will be yellow to clear. To tell Zephyr and Aion apart, place the end of the rod in a reduction flame. If it's Aion2 the rod will turn silver/yellow. Rods of Aion2 usually have many tiny air bubbles throughout the rod ("seeds").

Luna2.1, Khaos, Ekho, and Terra2 are all somewhat similar in rod form. All are usually amber or tan colored. Terra2 is opaque and has little white flecks/sparkles in it. Ekho is often a darker translucent brown, Khaos is smooth and creamy opaque.

The rod tonalities of Clio and Pandora can be very similar. Pandora is a kiln striking glass that does not luster. Clio is a lustering glass that flame strikes to an orangey-pinky-red color. Both colors can look transparent greenish in the rod. To tell them apart, set a light reduction flame and heat the tip of the rod for a few seconds. If it turns metallic silver, it is Clio.

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#### How did you make your encased murrini samples?

Those murrini samples are cabs/marbles. I get an 8-10mm gather of Aether, allow it to cool some, heat the spot where I am going to put the chip, while preheating the chip out past the end of the flame (using tweezers). Then apply the chip and adjust with tweezers. Then out to the end of the flame to heat the chip gently, until slight glow. Then more heat, and press halfway with a cold metal thing (butter knife). Then heat again and press again to make flat, almost flush with Aether base. Then gently polish chip with pointy flame. Now prepare 7-8mm Aether cane by pinching off the cut end with tweezers and gathering 8-10mm ball, get quite hot and drop onto chip (evenly). Then apply heat to Encasing blob while holding blob upwards, so clear glass flows evenly down over chip, eventually allowing flame to hit both Aether blobs, smoothly encasing chip.

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#### What's a free rod of orphan glass?

Orphan glass was either separated from the rest of its batch and we no longer know where it belongs or there was too little quantity of it to make a product. You can take some home by checking the box in your order.

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