

ART CLAY™ Bronze is now available through



*Art Clay Bronze, Silver, and
Copper Shadowbox Pendant
by Art Clay Master Instructor Pam East*

- ◆ Enjoy the look of gold without the expense
- ◆ Easy one-phase firing
- ◆ Can be fired with Art Clay™ Copper and Silver for mixed-metal accessories
- ◆ Only 10% shrinkage!

**Contact us for all your
metal clay needs:
fine silver, gold, copper, sterling,
and bronze!**

**Toll-free (in U.S.) 866-381-0100
708-857-8800**

www.artclayworld.com

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ART CLAY™

ART CLAY™ BRONZE



Brought to you by 

"Lathliss" sculpted dragon pendant in Art Clay Bronze by Art Clay Master Instructor Katie Baum

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866.381.0100

Over 5,000 Years of Bronze

Bronze is an alloy made mostly of copper, typically including about 12% tin, and sometimes incorporating other metals or metalloids (nickel, zinc, manganese, aluminum, silicon, or even arsenic.) As a metal clay, Bronze is generally made using only copper and tin.

Bronze is harder than copper, is more readily melted than copper, and is easier to cast than copper.

Artifacts made of alloys of bronze have been found dating back to the 4th millennium BCE, their prevalence leading to the naming of that historical period as the Bronze Age. While copper ore is common, tin is not, and they are rarely ever found near each other; this suggests that bronze could only have been made as the result of trade. Bronze weapons and tools have been found worldwide; some cultures used bronze to create ritual objects. Musical instruments from 3,600BCE were made of bronze; before glass, bronze was the standard material for making mirrors. Bronze became popular as material for coins, and was incorporated into shipbuilding as it is resistant to saltwater corrosion. The earliest cast bronze statue has been dated to approximately 700BCE. The benefits of bronze were many, as it was easier to sharpen and could be repaired or recycled. Items deemed irreparable or unneeded could be smelted and cast into completely new objects. Today, while bronze is considered an inexpensive and more industrial metal, it is still used to create bells, sculptures, ship propellers, and yes, Olympic medals.

Bronze jewelry was first created in Mesopotamia and India, and expanded to the Greek and Roman cultures soon after. Previous jewelry would have been made using shell, bone, or horn; these were replaced by bronze rings, bracelets, clothing pins, ankle bands, buttons, wire, and neckplates.

As a metal clay, bronze has unique properties that make it a versatile option for a wide variety of styles. Its strength makes it suitable for larger pieces, such as bangles; its color makes it an affordable alternative to gold. Art Clay™ Bronze is compatible with pre-formed bronze wire or embeddables, as well as fireable gemstones. The durability of bronze clay makes it a perfect candidate for mechanisms of movement, such as hinges, screw-type accents, and clasps.

Like any other metal clay, bronze does have a few limits. It needs to be kiln-fired within coconut carbon in order to prevent irreparable oxidation. This, plus its higher firing temperature mean it is not compatible for firing glass in place. However, its positive characteristics far outweigh its quirks, and bronze clay has become a popular formula for metal clay artists worldwide.

Finishing Art Clay™ Bronze

Polishing: After firing, the piece is solid bronze. You can enhance its natural luster with a metal brush, burnisher, polishing points, or tumbler. If available, a dremel tool or JoolTool can be used. Like other metal clays, Art Clay™ Bronze can be brought to a mirror finish with successive sanding or patient toolwork. Note: Thoroughly clean your tumbler and tumbling media before and after polishing the bronze, or use a separate set of brushing/burnishing tools so as not to contaminate any subsequent artwork of any other metal.

Pickling: Immersing a fired piece into “pickle” (a strong acid solution) removes any surface oxidation that may have developed during firing.

Please be environmentally responsible and follow the instructions included with the product for proper use and disposal of pickling solution.

Patination: Art Clay™ Bronze can be patinated multiple ways. Pieces can be painted with or dipped into a hot solution of Liver of Sulfur, then rinsed and polished for the desired amount of contrast. Patina can be added with heat, similarly to a heat patina on copper, though bronze is less heat tolerant so close attention must be paid while torching the piece.



*Pickling agent for removing firescale from fired bronze.
ACW #KbD-001*

Embellishments with Art Clay™ Bronze

Because Art Clay™ Bronze does have a moderately high kiln firing temperature, not all traditional metal clay decorations are suitable for use with this particular clay. Before firing any cubic zirconia or otherwise fireable gemstone in the bronze, it is recommended that the stone be test-fired to ensure its durability.

Art Clay™ Bronze fires very well with Art Clay™ Copper, as separate layers or incorporated together in the style of Mokume-gane. It is not advised to fire the bronze with silver, however, as that combination will try to alloy.



There is a wide variety of pre-formed bronze embeddables and settings available for inclusion with Art Clay™ Bronze. Prong settings, bails, fancy settings for cabs, and many styles of bronze wire are all compatible with Art Clay™ Bronze. Creative use of bronze wire allows for the mounting of pearls and setting of any size/shape of cabochon.

“Cerulean Rule” Art Clay Bronze Ring with Lab Sapphires by Art Clay Master Instructor Katie Baum

Art Clay™ Bronze Firing Instructions

To fire Art Clay™ Bronze:

- Always begin with a room-temperature kiln.
- Layer about an inch of coconut carbon in the bottom of a firing pan. Place fully dried and refined pieces on the carbon, then cover with at least another inch of coconut carbon. If the firing pan is large enough, additional layers or pieces may be added, so long as there is at least an inch of coconut carbon surrounding each and every piece. A lid for the firing pan is not necessary, though one can be used if desired.
- Place the firing pan in the center of the kiln. Use kiln posts to hold the firing pan up off of the floor of the kiln. Heat must be allowed to reach around the firing pan evenly.
- Program the kiln to ramp to 1508°F/820°C, taking at least 20 minutes to do so. Hold for 2 hours.
- Allow the pieces to cool in the carbon, back to room temperature. To cool faster, the firing pan may be removed from the kiln and placed on firing bricks or other heat-proof surface. Do not remove pieces from the coconut carbon until everything is cool enough to touch bare-handed.

It is **NOT** recommended to fire Art Clay™ Bronze with a Hotpot, Beehive Kiln, using a pyrometer, or any other firing apparatus that cannot hold the temperature consistently and accurately at 1508°F for the entire two hour firing time.



“Heart of Arya” Pendant in Art Clay Bronze with a 12mm lab ruby trilliant, by Art Clay Master Instructor Katie Baum

Welcome to Art Clay™ Bronze, the most user-friendly, reliable bronze clay!

Art Clay™ Bronze is a clay material that you can use to make a wide range of pieces such as jewelry, craft designs, and larger objects like sculptures and models. With minimal 10% shrinkage, planning for rings or mixed-media incorporations is straightforward and simple.

Art Clay™ Bronze has an easy 1-phase firing schedule, straightforward to program into any digital kiln. Like all other bronze clays, Art Clay™ Bronze must be fired within coconut carbon to avoid damaging oxidation.

As part of the Art Clay™ family, you can be sure that all ingredients are non-toxic, and that the metals are 100% recycled and reclaimed. The formula has only 4 components: copper, tin, binder, and water. Of the metal portion, 90% is copper, and 10% is tin. Of the entire formula, 90% is metal, the remaining 10% is binder and water.



Art Clay Bronze Earrings
with Titanium Posts
by Art Clay Master Instructor Pam East

Safety Considerations

- Wash your hands well after using Art Clay™ Bronze.
- Work with the coconut carbon in a well-ventilated area, or wear a dust mask to avoid inhaling carbon particulate.
- Avoid contamination with other metals. Mixing metal clay formulas may result in changing the clay's characteristics, and could cause project failure. Carefully clean tools, hands, and work surfaces between metals.
- The clay must be fired and cooled in coconut carbon, however, the firing pan may be removed from the kiln while still hot. If doing so, please use appropriate heat-resistant tools, protective wear, and have a proper heat-proof resting area for the firing pan.
- If the product comes in contact with eyes or mouth, please rinse with running water to prevent irritation.
- Be aware that some people may have a sensitivity to the copper in this formula. The level of reaction is different according to the individual, from light to severe. The most common reaction is minor and is a light green tinge to skin that has had prolonged contact with copper; this is typical and is a natural reaction between copper and your body.
- Consider wearing a dust mask when sanding; if you are already sensitive to copper, you may not want to inhale copper dust.
- Follow the written instructions carefully, and do not use this product for any other purpose other than those appropriate for metal clay.

Recommended Tools When Working with Art Clay™ Bronze

The same tools we're used to for working with other metal clays are also perfect for Art Clay™ Bronze. It is recommended, however, that a separate set of tools is kept for each specific medium, in order to avoid cross-contamination between different metals. If separate tools are not feasible, clean tools very carefully between metals.

Standard Tools

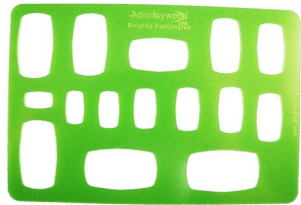
- Hard work surface to protect table
- Non-stick working surface
- Conditioning agent
- Rolling tool
- Graduated slats
- Needle/pin tool
- Small paintbrushes
- PasteMaker
- Measuring tool (ruler, tape)
- Craft knife
- Small files
- Sanding papers or sponges
- Burnishing tools
- Tweezers
- Rubber block
- Kiln
- Firing pan and Coconut carbon
- Pickling agent

Specialty Tools

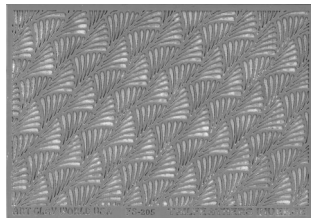
- Clay sculpting tools
- Metal rib
- Magnification lenses
- Textures
- Templates/stencils
- Molds
- Patinas
- Gemstone-setting tools/burs
- Mandrels (ring, bracelet)
- Hand drill/pin vise
- Engraving tools
- Extruders
- Embossers
- Tumbler
- Flex shaft or other electric burnishing/polishing tool



PasteMaker
ACW #F-315



Shape Templates, hundreds of styles
ACW #FLX-



Texture Stamps, hundreds of designs
ACW #FS-

Art Clay™ Bronze Tips and Suggestions

- The percentage of metal in the Art Clay™ Bronze in clay state is 90%, the remainder of the clay being moisture and organic binder. Because of this, we can plan for a **10% shrinkage rate**.
- Adhere layers together, seal seams, or fill pocks/scratches by making Art Clay™ Bronze **paste**. Add a small amount of PasteMaker or water to the clay and mix until smooth. Apply as needed and dry thoroughly before firing. Art Clay™ Bronze paste works well for seams, attached bails, embedding items, dangling layers, and even repairing pieces after firing.
- To **store** Art Clay™ Bronze, wrap clay in cling wrap, then place clay in vacuum or zip-seal bag, remove air, and place in another airtight container (such as a small glass jar) with a moist sponge or paper towel to make a humidior-like environment. **DO NOT** place a moist item in the vacuum-seal bag with the clay!
- After opening a package, the surface of Art Clay™ Bronze will naturally start **oxidizing** and the color will darken if left in the air. If you see a darkened surface, scrape off the layer and use the remainder to make your piece.
- Keep the clay indoors at a moderate room temperature and out of direct sunlight. **Do not refrigerate.**
- Condition any tools, molds, or textures well with a conditioning agent.
- Keep a separate set of tools for your Art Clay™ Bronze (as you would for any other specific type of metal clay) in order to **minimize contamination**, which can alter the properties of the piece as a whole and produce surprising—or unpleasant—results. If separate sets of tools are not possible, clean tools very well between metals.
- If you are very sensitive to copper, protect your hands with either conditioning agent or something like *Gloves in a Bottle*. Particularly if you have any breathing afflictions (such as asthma or COPD), wear a dust mask when sanding.
- If ever needed, **reconstitute** Art Clay™ Bronze with plain water.
- Add color to fired pieces using Liver of Sulfur Patina *or* by flash-heating with a handheld butane torch.
- The **shelf-life** of Art Clay™ Bronze is 2-3 years. Please use within this time, and soon after opening any package.

Drying Art Clay™ Bronze

1. Dry completely before firing. The dried clay will become hard, and you can easily drill, file, carve or sand with your preferred hand tools or other equipment. Follow the drying instructions below:

Hot air dryer	Electric Hot Plate or Mug Warmer	Electric Kiln or Toaster Oven	Natural Air Drying
At least 10 minutes	More than 10 minutes at 300° F.	More than 10 mins at 300° F.	At least 24 hours

2. Place the dried piece on a shiny surface while still warm. Leave for 5 seconds, then remove your piece and check for condensation. If any condensation is present, continue the drying process in 10-minute increments until the piece is bone dry and no vapor appears.
3. **IMPORTANT:** Do not dry the piece over 480 °F. or the binder will be destroyed and deform the shape in the firing process.