GVR
LAPIDARY CLUB
and all things jewelry

About Metal Clay

Metal clay comes in a variety of types, made from both precious and base metals. At GVR's Lapidary and Silversmith Club, we focus on silver metal clay classes.

Silver metal clay is composed of tiny silver particles held together by an organic binder. It can be molded, textured, and sculpted into jewelry, beads, and small sculptures. In our classes, the club's metal clay instructor guides participants through essential tools, construction methods, refining techniques, firing options, and finishing processes. By the end of the class, each participant will have created dangling earrings, a pendant, several charms, or other unique pieces. Beginners, as well as those looking to refresh or expand their metal clay skills, are welcome.

For those with prior experience, classes offer opportunities to explore advanced techniques, such as joining wet or dry clay pieces for added dimension, perfecting textures, adding bails, embellishing with syringe clay, and incorporating cubic zirconia or dichroic elements.

Safety is a top priority. Participants should wear closed-toe shoes, aprons, and eye protection, particularly when working with electric tools or chemical solutions. Always be mindful of heat and fire safety as well.

The metal clay creation process involves six key steps.

1. Design
2. Construct
3. Refine
4. Fire
5. Finish
6. Assemble—ready to wear, gift, or sell

1 Design

Metal clay behaves much like ceramic clay, allowing for endless design possibilities. You can texture the clay with natural materials, commercial texture mats, or anything in between. For unique effects, try making your own textures using silicone molding material, or use a paper-cutting machine for further customization.

Textures and imprints can be as deep or as subtle as you like, and layering pieces of metal clay adds dimension and interest to your work. (Techniques for joining clay are covered in the Construction section.)

Metal clay can be carved when wet or dry, so your imagination is the only limit—create anything from geometric patterns and miniature scenes to animals, symbols, or freeform designs.

Templates are handy for cutting standard shapes like circles, rectangles, and hearts, but freehand drawing or making your own templates can make your creations truly one-of-a-kind.

A fascinating aspect of metal clay is that it shrinks during firing—sometimes up to 26%, depending on the brand. This means you can work on a comfortably sized piece and watch with delight as the smallest details become even finer after firing.

If your piece is intended as a gift, you can personalize it during the design phase with special touches.

To make the most of your ideas, it's helpful to sketch your design and jot down notes in an artist's sketchbook. Not only does this help you plan each project, but looking back through your sketches also lets you see and celebrate your artistic growth over time.

2 Construct

Once your design is clear, the next step is figuring out the best way to bring it to life. The properties of metal clay often influence the sequence of steps and the logistics of construction. Sometimes, you may find that certain elements of your design need to be adjusted to make them feasible.

During this phase, you'll begin shaping your piece—cutting out clay, letting it dry, refining the parts, and layering on additional pieces as needed. With experience, many artists find it helpful to work on two or more creations at once, so there's always something to do while waiting for pieces to dry.

This is also the stage to add embellishments like cubic zirconia, select synthetic stones, or dichroic glass. You might also create a backplate or bezel intended for a cabochon that can't withstand the firing process.

Other construction details include setting eyelets, attaching bails, refining decorative elements, and checking for symmetry—bringing the piece as close as possible to its final form, even while it's still in a dry clay state.

Before moving on, ensure your piece is thoroughly dry. You can speed up the drying process with a coffee mug warmer, hair dryer, low-temperature oven (under 120°F), food dehydrator, or by simply leaving it at room temperature for several hours.

3 Refine

Interestingly, the final beauty and polish of your piece depend greatly on this step. Refining involves filing, sanding, carving, and making subtle adjustments to enhance both the appearance and function of your creation.

Common refinements include drilling holes, beveling their edges, smoothing straight or curved sides, removing burrs and ridges from carved sections, sanding away cracks or imperfections, and deepening certain areas to add dimension. Don't forget to refine the back of your piece—attention to every surface makes a difference.

If you're unable to perfect certain details at this stage, you may be able to make further refinements after firing using flexible shaft tools and attachments.

4 Fire

Firing is the process that transforms metal clay into solid metal by removing the organic binder and any remaining moisture. During this

stage, the silver particles in the clay sinter—meaning they fuse together to create a dense, solid structure.

There are two primary firing methods: torch firing and kiln firing. Each brand of metal clay provides specific instructions for firing, so always refer to the manufacturer's guidelines.

Torch firing is suitable for smaller, less complex pieces—such as earrings, pendants, and charms weighing up to about 10 grams. It achieves a slightly lower level of sintering and, therefore, less strength, so it's best reserved for pieces that won't undergo much stress. Note that not all metal clays are suitable for torch firing; check before you begin. A butane torch is preferred, as an oxygen-acetylene torch can produce too much heat.

Kiln firing is used for larger items or pieces that include fire-safe stones like cubic zirconia or dichroic glass. Bracelets, rings, and more intricate designs should always be kiln fired to ensure maximum strength and durability.

After firing, your piece will appear chalky white, with a matte surface that scatters light rather than reflecting it. Brushing the piece with a brass brush compacts the silver crystals, revealing the metal's natural shine.

If any shaping is needed—such as curving or flattening—use a rawhide mallet or a dapping block at this stage.

Finally, tumbling the piece with steel shot and a burnishing solution will harden the metal and bring out a bright, reflective finish.

5 Finish

The finishing stage begins with a key decision: whether or not to apply a patina. Patinas are oxidizing agents, with popular options including Liver of Sulfur, JAX, and Black Max. Liver of Sulfur works gradually, while JAX and Black Max develop color instantly. Always use these chemicals in a well-ventilated area, as their fumes can be hazardous.

After patinating, neutralize the piece by dipping it in a saturated baking soda (sodium bicarbonate) solution.

If you stop the Liver of Sulfur process partway through, you can achieve gold, blue, or even rainbow hues. For additional color, consider alcohol inks, colored waxes, or even colored pencils.

Next, decide which finish will best enhance your piece, and how much of the patina you'd like to remove. Finishes can range from a high-gloss mirror shine to a soft matte. Typically, a mirror finish retains more of the dark patina, while a matte finish produces lighter tones.

The finish you choose will determine which tools you use—these might include a flex shaft with various attachments, or a buffing wheel with rouges and polishing compounds.

Both patina and finishing choices are highly personal, and sometimes the piece itself will inspire the best approach.

This stage may also include setting cabochons, depending on your design. If you want a rough, matte look, avoid sandpaper or coarse polishing discs that could scratch or dull stones.

A final tumble in burnishing solution can add extra shine, but keep in mind it will remove some patina and brighten the surface—so skip tumbling if you prefer a matte finish.

Lastly, for a touch of sparkle, burnish the high points and edges with an agate or steel burnisher.

6 Assemble — Wear, Gift, or Sell?

Complete your jewelry by attaching ear wires to earrings, adding O rings where needed, stringing pendants onto necklaces, soldering on extra elements, setting cabochons, and adding any final touches necessary to finish your piece.

For a cohesive look, match the finish of ear wires, chains, or necklace cords to your jewelry, patinating and polishing them in a style similar to your piece. For instance, a rustic, matte earring pairs best with an aged ear wire rather than a shiny, new one straight from the package.

As you assemble, consider the purpose of your creation:

- Is it for yourself?
- Is it a gift? If so, how will you wrap or present it?
- Are you planning to sell it? Will you use a display card, and does that card reflect your brand?
- Have you researched appropriate pricing for wholesale, retail, or consignment?

Arts councils and similar organizations often provide resources and programs to help artisans develop a sustainable business, enhance their skills, and build a consistent brand. And of course, the GVR Lapidary and Silversmith Club supports its members with excellent facilities, educational opportunities, and a vibrant creative community.

Resources

Below is a list of metal clay suppliers for clay, tools, and specialty items. For even more options, ask fellow metal clay artists where they source their supplies—you're sure to discover many additional recommendations.

AMCAW (Alliance for Metal Clay Arts Worldwide)
Art Clay World
Clay Revolution
Cool Tools
Metal Clay Alchemist
Metal Clays dot Com
Metal Clay Findings
RioGrande
Silver Clay dot Com

Kris Kramer, our current metal clay instructor, has created a collection of exclusive YouTube videos for the GVR Lapidary & Silversmith Club, available on her website in the Kris Kramer Designs Video Vault.

The Lapidary & Silversmith Club also offers a variety of books and DVDs, with many focused on metal clay techniques.

Lapidary & Silversmith Club Class Tools

The Lapidary & Silversmith Club supplies these tools for use during class. These are the property of the club. More tools are available to borrow upon request or as their need arises during classes.

Each canvas pouch contains the following.

1 Piece of Card Stock
1 Pencil
1 Pointer Tool on Eraser
1 Scalpel
1 Bamboo Brush
1 1 mm Drill Bit
3 3M Sanding Sponges (3 grits)
1 Paintbrush
1 Plastic Wrap
1 Roller
4 Rolling Slats — White, Wood
1 Paper for Sketching
1 Emery Board
2 Small Mirrors
1 Piece of Glass
1 Bur Bit
1 Piece of Sandpaper
1 Smoothing Swab
1 Agate Burnisher
1 Spray Bottle (Water)
1 Olive Oil or Slik or other release agent
1 Teflon Squares
1 Catch Tray (Card Stock)
1 Plastic Coated Papers
~ Bunch o' Hand-wipes
1 Air-tight Container which you can take home

Lapidary & Silversmith Club Facility Tools

Specialty tools like those listed below can be purchased for your personal studio or workspace. However, most of these tools are available for use for Lapidary & Silversmith Club members who have completed the necessary classes. These are just a few of the tools commonly used to finish metal clay pieces.

Metal Clay Kiln
Flex Shaft
Steel Shot Tumbler
Buffing Wheels
Soldering Equipment (does not include silver, solder, or flux)
Rawhide Mallets and Hammers
Dapping Block