GEM SCOOPS

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Precious Metal Clay Technique

A Plea for Help!

It seems to me that all club members should be aware that the PDGMS is about to become history unless some relatively new member takes over. Ted, Larry and Fred are not going to keep trying to keep the club alive by dreaming up meeting topics. We have jointly been doing this for 25 years, plus or minus.

We need a President, Vice President and Secretary just to function. You may have noticed that the brief Minutes no longer meet the standards set by the previous secretaries. We need a president just to coordinate things. He or she does not need to know anything about lapidary or jewelry making. The President is automatically a member of the Southeast Federation executive board. If the club President attends a few SFMS Board meeting he or she will meet potential speakers. Usually, they are more than willing to be a guest speaker. Visit the Greenville and Greenwood clubs and you will meet several more potential speaker. Isn't there someone available to keep this club from being shut down?

Fred

JULY MEETING

Possibility of postponing Picnic until August will be discussed at June Meeting.

June 2012 MEETING

DATE:: Tuesday, June 19, 2012 at 7 PM
PLACE:Hayden Conference Center in the Clemson Botanical Gardens.
TOPIC: Precious Metal Clay or The PMC Process.

SPEAKER: **John Ishler**

PDGMS club member John Ishler will demonstrate the basic PMC or Precious Metal Clay Process. PMC is a crafting medium that was originally developed in Japan in 1990. John is a certified PMC instructor and has taught the technique for Clemson students. Refreshments will be served at seven by Michelle Stevens. Visitors are always welcome.

Minutes

Pendleton District Gem and Mineral Society

May 15, 2012

Location: Hayden Conference Center, within the Clemson Botanical Gardens.
Attendance: We had an attendance of between ten and fifteen.
Speaker: Bobby Hanks

Master Jeweler Bobby Hanks, from Anderson, operated a successful jewelry-making business that grew from one to seven employees over a 50 year span. Now retired, he shared insights gained throughout his long career and how his interests and expertise may fit into PDGMS activities. Mr. Hanks was especially interested in contributing his talents when the club has a permanent workshop available for classes.

Refreshments were served by Vi Wolf.

Precious Metal Clay

(Information from Wikipedia)

Metal clay is a crafting medium consisting of very small particles of metal such as silver, gold, bronze, or copper mixed with an organic binder and water for use in making jewelry, beads and small sculptures. Originating in Japan in 1990, metal clay can be shaped just like any soft clay, by hand or using molds. After drying, the clay can be fired in a variety of ways such as in a kiln, with a handheld gas torch, or on a gas stove. The binder burns away, leaving the pure sintered metal.

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Shrinkage of between 8% and 30% occurs (depending on the product used). Alloys such as bronze, sterling silver, and steel also are available.

History

Metal clay first came out in Japan in 1990 to allow craft jewelry makers to make sophisticated looking jewelry without the years of study needed to make fine jewelry.

Silver metal clay

Silver metal clay results in objects containing 99.9% pure silver, which is suitable for enameling. Although gold metal clay is more expensive, it provides richer color. Lump metal clay is sold in sealed packets to keep it moist and workable. The silver versions are also available as a softer paste in a pre-filled syringe which can be used to produce extruded forms, in small jars of slip and as paper-like sheets, from which most of the moisture has been removed. Common brands of silver metal clay include Precious Metal Clay (PMC) and Art Clay Silver (ACS).

Precious Metal Clay (PMC)

PMC was developed in the early 1990s in Japan by metallurgist Masaki Morikawa.[3] As a solid-phase sintered product of a precious metal powder used to form a precious metal article,[1] the material consists of microscopic particles of pure silver or fine gold powder and a water-soluble, non-toxic, organic binder that burns off during firing. Success was first achieved with gold and later duplicated with silver.

The PMC brand includes the following products:

The original formula of PMC, now called "standard": fired at 900 °C (1,650 °F) for 2 hours, shrinks by 30% during firing.

PMC+: fired at 900 °C (1,650 °F) for 10 minutes or 800 °C (1,470 °F) for 30 minutes; shrinks 15%, due to a particle size reduction. PMC+ is also available in sheet form which can be worked like paper; for example, for origami.

PMC3: fired at 599 °C (1,110 °F) for 45 minutes or 699 °C (1,290 °F) for 10 minutes; shrinks by 10%. It can also be fired using a butane torch by heating it to orange heat for at least 2 minutes. It has a longer working life than the older formulations. It is also available in slip and paste forms which can be painted onto the surface of an object to be used as a mould.

Aura 22: a 22 k gilding material, a gold paste intended to be painted onto the surface of silver PMC pieces, or ready-made silver objects.[4]

PMC Pro: a harder product which is only 0.900 silver, hence it cannot be hallmarked as sterling silver. It also requires kiln firing in a tub of activated carbon for 1 hours at 760 °C (1,400 °F).

Art Clay Silver (ACS)

ACS was developed by AIDA Chemical Industries, also a Japanese company. ACS followed PMC Standard with their Art Clay Original clay (more like PMC+ than PMC Standard), which allows the user to fire with a handheld torch or on a gas hob. Owing to subtle differences in the binder and suggested firing times, this clay shrinks less than the PMC versions, approximately 8–10%.

Further developments introduced the Art Clay Slow Dry, a clay with a longer working time. Art Clay 650 and Art Clay 650 Slow Dry soon followed; both clays can be fired at 650 °C (1,202 °F), allowing the user to combine the clay with glass and sterling silver, which are affected negatively by the higher temperatures needed to fire the first generation clays. AIDA also manufacturers Oil Paste, a product used only on fired metal clay or milled fine silver, and Overlay Paste, which is designed for drawing designs on glass and porcelain.

In 2006 AIDA introduced the Art Clay Gold Paste, a more economical way to work with gold. The paste is painted onto the fired silver clay, then refired in a kiln, or with a torch or gas stove. When fired, it bonds with the silver, giving a 22ct gold accent. The same year also saw Art Clay Slow Tarnish introduced, a clay that tarnishes less rapidly than the other metal clays.

Lump metal clays

Lump metal clay in bronze was introduced in 2008 by Metal Adventures Inc. and in 2009 by Prometheus. Lump metal clays in copper were introduced in 2009 by Metal Adventures Inc. and Aida. Because of the lower cost, the bronze and copper metal clays are used by artists[5] more often than the gold and silver metal clays in the American market place. Due to Hallmarking requirements laid out in the UK Bronze and Copper are not regarded as highly. The actual creation time of a Bronze or Copper piece is also far greater than that of its PMC3 counterpart.

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Base metal clays

Base metal clays, such as bronze, copper, and steel metal clays are best fired in the absence of oxygen to eliminate the oxidation of copper by atmospheric oxygen. A simple means to accomplish this (place the pieces in activated carbon inside a container) was developed by Bill Struve

ReferenceReferences

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Art Jewelry: 30, July 2008.

SFMS Workshops are in August, September, and October.