Welcome to the world of Goldie Metal™

We are the first company in Poland that has developed and patented a unique method of metal powders production. Metal Clay products have been gaining popularity all over the world lately. We are proud to announce that our current collection includes bronze powders in several colors and copper. We are planning to add several other kinds of metals in many colors, including silver and gold.
We invite you to go on a wonderful adventure with our clays that give the artist huge possibilities of creation, the freedom of expression and certainty and repeatability of the parameters of the material they are working with.

These are the metals available at the moment::
Goldie Hard™. Goldie Soft™, Goldie Roman Bronze™, Goldie de la Rosa Bronze™, Goldie Snow Bronze™, Goldie Copper™.

Goldie Bronze™ is bronze of a beautiful golden color, very hard after firing, comes in two types of powder - SOFT and HARD. SOFT is very soft and is ideal for working with stamps and textures, and to capture fine details. HARD creates a somewhat stiffer clay to work with, and yields the maximum strength - it is ideal for bangles, ring bands, and decorative objects. Both types may be mixed in the powder stage, before adding your water. If you are planning to create a piece which involves fine details and you desire the maximum strength, it is recommended to mix equal portions of both the Hard and the Soft versions.

Goldie Bronze™ is an environmentally friendly product. It contains approximately 90% copper and 10% tin. The binders are organic and non toxic. The container that the powder comes in is deliberately larger than needed so it can be reused afterwards. Please do your bit for the environment and keep the container for future use (non food use only).

Goldie Bronze™ shrinks by about 8%-11% on firing, depending on the shape and the size of the piece. Dried clay can be ground up to a powder and reconstituted. Goldie Bronze™ is simple and economical to use.

TO MIX

- First, stir the powdered clay well in its original container, to ensure it is properly mixed, and then put the desired amount of powder into a smaller container.
- Add about a dozen drops of water or spray in a little water and mix with a knife or spoon, adding more water as required, until you get a clay of a plasticine like consistency.
- Roll the lump clay out thinly and fold over. Roll again, rolling away from the fold. Repeat this action several times. This is very important to ensure that all the air is removed from the clay and to get a smooth consistency before using. Insert into a plastic bag or container and wait for 30 minutes.

TO USE

- To join elements in Goldie Bronze™ clay mix a little powder with water to make a paste. Elements can also be joined with the water only method in the same way as silver clay.

- Pieces can be dried naturally or by using heat, e.g. on a hotplate or in a dehydrator. Dry at 90°C (195°F) or lower. Higher temperatures may cause cracking, and the creation of steam bubbles.
- Remember to always clean your tools well between using different types of metal clay to avoid cross contamination. The above comment does not apply to metals from the Goldie Metal™ line, because you can mix them together with Mokume Gane, or other techniques. See Tips and Tricks for detailed description.

TO FIRE

- Ensure the clay is completely dry before firing. Any moisture will boil and ruin the piece.
- Lay the pieces in a stainless steel firing container on a layer of activated coconut shell carbon with a minimum depth 1cm (1/2") under the pieces. Make sure the pieces are at least 1cm (1/2") apart. Place the open container into a cold kiln and fire at full ramp to 350°C (670°F) and hold for 30 minutes.
- You can use a steel net during the first stage, so the air access during the binder firing is better, so the first stage can be reduced to 20 minutes. The practice has proven this to be a more secure method, the whole binder might burn up if we put the element in the coal too deep. During the first stage, for safety reasons, you should wait for the elements to cool down, and then gently put the fired elements in a container with activated coconut shell carbon.
- Carefully remove the container from the kiln and place on a heatproof surface. Fill the container with a layer of activated coconut shell carbon with a minimum depth 1cm (1/2") over the pieces. Cover with a stainless steel lid and place back into the kiln. Full ramp to 820°C (1510°F) and hold for 40 minute. In case of large elements, the time should be properly extended to 1 hour
- Fired pieces can be removed from the kiln hot or cold.

SAFETY PRECAUTIONS

Do not breathe in the powder or ingest Goldie Bronze™. Always use the appropriate safety equipment when working with a hot kiln and fire in a well ventilated area. Goldie Bronze™ is non toxic and does not contain any harmful chemicals. There have been no reports of any allergic reaction to Goldie Bronze™, however people with allergies should be aware of the possibility of a reaction and use with care.

Goldie Roman Bronze™ is bronze of a beautiful golden bronze color, resembling the colors used in times of the Roman Empire. The clay is a bit more grainy, thanks to larger than usual bronze seeds. After firing and polishing with an 3M wheel or sandpaper, you can notice tiny bronze speckles that reflect the light and create an interesting sparkling effect.

Goldie Roman Bronze™ is an environmentally friendly product. It contains approximately 89% copper and 11% tin. The binders are organic and non toxic. The container that the powder comes in is deliberately larger than needed so it can be reused afterwards. Please do your bit for the environment and keep the container for future use (non food use only).

Goldie Roman Bronze™ shrinks by about 10%-12% on firing, depending on the shape and the size of the piece. Dried clay can be ground up to a powder and reconstituted. Goldie Roman Bronze™ is simple and economical to use.

TO MIX

- First, stir the powdered clay well in its original container, to ensure it is properly mixed, and then put the desired amount of powder into a smaller container.
- Add about a dozen drops of water or spray in a little water and mix with a knife or spoon, adding more water as required, until you get a clay of a plasticine like consistency.
- Roll the lump clay out thinly and fold over. Roll again, rolling away from the fold. Repeat this action several times. This is very important to ensure that all the air is removed from the clay and to get a smooth consistency before using. Insert into a plastic bag or container and wait for 30 minutes.

TO USE

- To join elements in Goldie Roman Bronze™ clay mix a little powder with water to make a paste. Elements can also be joined with the water only method in the same way as silver clay.
- Pieces can be dried naturally or by using heat, e.g. on a hotplate or in a dehydrator. Dry at 90°C (195°F) or lower. Higher temperatures may cause cracking, and if steam appears it might create bubbles in the material.
- Remember to always clean your tools well between using different types of metal clay to avoid cross contamination. The above tip does not apply to Goldie Metal™ line products, because they can be mixed with Mokume Gane or other techniques. See Tips and Tricks for detailed description.

TO FIRE

- Ensure the clay is completely dry before firing. Any moisture will boil and ruin the piece.
- Place the elements on a steel net, put into the kiln and fire for 20 minutes in 350°C/670°F during the first stage.
- Carefully remove the steel net from the kiln and place on a heatproof surface. Fill the bottom of the container with carbon, with a layer of at least 1 cm. Carefully place the elements on the carbon layer. Fill the container with a layer of activated coconut shell carbon with a minimum depth 1cm (1/2") over the pieces. Cover with a stainless steel lid and place back into the kiln. The elements can be fired without cover as well, but then you have to remember that a bit more carbon will be used then. the use of. Full ramp to 845°C (1560°F) and hold for 1h30min. This period of time van be reduced even to an hour in case of small elements, we encourage you to experiment.
- Fired pieces can be removed from the kiln hot or cold.

SAFETY PRECAUTIONS

Do not breathe in the powder or ingest Goldie Roman Bronze™. Always use the appropriate safety equipment when working with a hot kiln and fire in a well ventilated area. Goldie Roman Bronze™ is non toxic and does not contain any harmful chemicals. There have been no reports of any allergic reaction to Goldie Roman Bronze™, however people with allergies should be aware of the possibility of a reaction and use with care.

Goldie de la Rosa Bronze™ is a bronze of a pinkish color, very hard after the firing.
Goldie de la Rosa Bronze™ is an environmentally friendly product. It contains approximately 94% copper and 6% tin. The binders are organic and non toxic. The container that the powder comes in is deliberately larger than needed so it can be reused afterwards. Please do your bit for the environment and keep the container for future use (non food use only).

Goldie Roman Bronze™ shrinks by about 11%-14% on firing, depending on the shape and the size of the piece. Dried clay can be ground up to a powder and reconstituted. Goldie de la Rosa Bronze™ is simple and economical to use.

TO MIX

- First, stir the powdered clay well in its original container, to ensure it is properly mixed, and then put the desired amount of powder into a smaller container.
- Add about a dozen drops of water or spray in a little water and mix with a knife or spoon, adding more water as required, until you get a clay of a plasticine like consistency.
- Roll the lump clay out thinly and fold over. Roll again, rolling away from the fold. Repeat this action several times. This is very important to ensure that all the air is removed from the clay and to get a smooth consistency before using. Insert into a plastic bag or container and wait for 30 minutes.

TO USE

- To join elements in Goldie de la Rosa Bronze™ clay mix a little powder with water to make a paste. Elements can also be joined with the water only method in the same way as silver clay.
- Pieces can be dried naturally or by using heat, e.g. on a hotplate or in a dehydrator. Dry at 90°C (195°F) or lower. Higher temperatures may cause cracking, and if steam appears it might create bubbles in the material.
- Remember to always clean your tools well between using different types of metal clay to avoid cross contamination. The above tip does not apply to Goldie Metal™ line products, because they can be mixed with Mokume Gane or other techniques. See Tips and Tricks for detailed description.

TO FIRE

- Ensure the clay is completely dry before firing. Any moisture will boil and ruin the piece.
- Place the elements on a steel net, put into the kiln and fire for 20 minutes in 350°C/670°F during the first stage.
- Carefully remove the steel net from the kiln and place on a heatproof surface. Fill the bottom of the container with carbon, with a layer of at least 1 cm. Carefully place the elements on the carbon layer. Fill the container with a layer of activated coconut shell carbon with a minimum depth 1cm (1/2") over the pieces. Cover with a stainless steel lid and place back into the kiln. The elements can be fired without cover as well, but then you have to remember that a bit more carbon will be used then. the use of. Full ramp to 935°C (1715°F) and hold for 1h30min. This period of time can be reduced even to 50 minutes, we encourage you to experiment.
- Fired pieces can be removed from the kiln hot or cold.

SAFETY PRECAUTIONS
Do not breathe in the powder or ingest Goldie de la Rosa Bronze™. Always use the appropriate safety equipment when working with a hot kiln and fire in a well ventilated area. Goldie de la Rosa Bronze™ is non toxic and does not contain any harmful chemicals. There have been no reports of any allergic reaction to Goldie de la Rosa Bronze™, however people with allergies should be aware of the possibility of a reaction and use with care.

Goldie Snow Bronze™ is a white kind of bronze. The seeds are a it larger than in the case of other bronzes, up to 75 micrometers, that's why we can find it a bit grainy after mixing with water. Snow Bronze has a high tin content (21%). Its large powder seeds are very strongly connected to each other after burning. The material is smooth after firing, with no traces of seeds.

Goldie Snow Bronze™ is an environmentally friendly product. It contains approximately 79% copper and 21% tin. The binders are organic and non toxic. The container that the powder comes in is deliberately larger than needed so it can be reused afterwards. Please do your bit for the environment and keep the container for future use (non food use only).

Goldie Snow Bronze™ shrinks by about 16%-30% on firing, depending on the shape and the size of the piece, and the temperature of firing. The temperature depends on the thermal efficiency of the kiln. The smaller kilns - higher temperature. Dried clay can be ground up to a powder and reconstituted. Goldie Snow Bronze™ is simple and economical to use.

TO MIX

- First, stir the powdered clay well in its original container,, to ensure it is properly mixed, and then put the desired amount of powder into a smaller container.
- Add about a dozen drops of water or spray in a little water and mix with a knife or spoon, adding more water as required, until you get a clay of a plasticine like consistency.
- Roll the lump clay out thinly and fold over. Roll again, rolling away from the fold. Repeat this action several times. This is very important to ensure that all the air is removed from the clay and to get a smooth consistency before using. Insert into a plastic bag or container and wait for 30 minutes.

TO USE

- To join elements in Goldie Snow Bronze™ clay mix a little powder with water to make a paste. Elements can also be joined with the water only method in the same way as silver clay.
- Pieces can be dried naturally or by using heat, e.g. on a hotplate or in a dehydrator. Dry at 90°C (195°F) or lower. Higher temperatures may cause cracking, and if steam appears it might create bubbles in the material.
- Remember to always clean your tools well between using different types of metal clay to avoid cross contamination. The above tip does not apply to Goldie Metal™ line products,

because they can be mixed with Mokume Gane or other techniques. See Tips and Tricks for detailed description.

TO FIRE

- Ensure the clay is completely dry before firing. Any moisture will boil and ruin the piece.
- Place the elements on a steel net, put into the kiln and fire for 20 minutes in 350°C during the first stage.
- Carefully remove the steel net from the kiln and place on a heatproof surface. Fill the bottom of the container with carbon, with a layer of at least 1 cm. Carefully place the elements on the carbon layer. Fill the container with a layer of activated coconut shell carbon with a minimum depth 1cm (1/2") over the pieces. Cover with a stainless steel lid and place back into the kiln. The elements can be fired without cover as well, but then you have to remember that a bit more carbon will be used then. the use of. 730-760°C (1350-1370°F) and hold for 1h50 min. This period of time can be reduced even to an hour in case of small elements, we encourage you to experiment.
- Fired pieces can be removed from the kiln hot or cold.

SAFETY PRECAUTIONS

Do not breathe in the powder or ingest Goldie Snow Bronze™. Always use the appropriate safety equipment when working with a hot kiln and fire in a well ventilated area. Goldie Snow Bronze™ is non toxic and does not contain any harmful chemicals. There have been no reports of any allergic reaction to Goldie Snow Bronze™, however people with allergies should be aware of the possibility of a reaction and use with care.

Goldie Copper™ is a very pure copper clay. The powder contains 99,9% of pure dendrite copper. After firing and removing the patina created in the firing process the metal is very light and has a beautiful color.

Goldie Copper™ is an environmentally friendly product. The binders are organic and non toxic. The container that the powder comes in is deliberately larger than needed so it can be reused afterwards. Please do your bit for the environment and keep the container for future use (non food use only).

Goldie Copper™ shrinks by about 12%-18% on firing, depending on the shape and the size of the piece. Dried clay can be ground up to a powder and reconstituted. Goldie Copper™ is simple and economical to use.

TO MIX

- First, stir the powdered clay well in its original container, to ensure it is properly mixed, and then put the desired amount of powder into a smaller container.
- Add about a dozen drops of water or spray in a little water and mix with a knife or spoon, adding more water as required, until you get a clay of a plasticine like consistency.

- Roll the lump clay out thinly and fold over. Roll again, rolling away from the fold. Repeat this action several times. This is very important to ensure that all the air is removed from the clay and to get a smooth consistency before using. Insert into a plastic bag or container and wait for 30 minutes.

TO USE

- To join elements in Goldie de la Rosa Bronze™ clay mix a little powder with water to make a paste. Elements can also be joined with the water only method in the same way as silver clay.
- Pieces can be dried naturally or by using heat, e.g. on a hotplate or in a dehydrator. Dry at 90°C (195°F) or lower. Higher temperatures may cause cracking, and if steam appears it might create bubbles in the material.
- Remember to always clean your tools well between using different types of metal clay to avoid cross contamination. Remember to always clean your tools well between using different types of metal clay to avoid cross contamination. The above tip does not apply to Goldie Metal™ line products, because they can be mixed with Mokume Gane or other techniques. See Tips and Tricks for detailed description.

TO FIRE

- Ensure the clay is completely dry before firing. Any moisture will boil and ruin the piece.
- Place the elements on a steel net, put into the kiln and fire for 20 minutes in 380°C/1080°F during the first stage.
- Carefully remove the steel net from the kiln and place on a heatproof surface. Fill the bottom of the container with carbon, with a layer of at least 1 cm. Carefully place the elements on the carbon layer. Fill the container with a layer of activated coconut shell carbon with a minimum depth 1cm (1/2") over the pieces. Cover with a stainless steel lid and place back into the kiln. The elements can be fired without cover as well, but then you have to remember that a bit more carbon will be used then. Full ramp to 960°C (1740°F) and hold for 2 - 3 hours, depending on the thickness. This period of time can be reduced even to an hour and a half in case of small elements, we encourage you to experiment.
- Fired pieces can be removed from the kiln hot or cold.

SAFETY PRECAUTIONS

Do not breathe in the powder or ingest Goldie de la Rosa Bronze™. Always use the appropriate safety equipment when working with a hot kiln and fire in a well ventilated area. Goldie de la Rosa Bronze™ is non toxic and does not contain any harmful chemicals. There have been no reports of any allergic reaction to Goldie de la Rosa Bronze™, however people with allergies should be aware of the possibility of a reaction and use with care.

Manual firing Goldie Metal ™

POWDER	1 STAGE	2 STAGE	shrinkage
GOLDIE BRONZE SOFT™	350C -20min on a grid of steel. -30min on a layer of coal.	820C 40min	8-11%
GOLDIE BRONZE HARD™	350C -20min on a grid of steel. -30min on a layer of coal.	820C 40min	8-11%
GOLDIE ROMAN BRONZE™	350C 20min on a grid of steel	845C 1h30min	10-12%
GOLDIE SNOW BRONZE™	350C 30min on a grid of steel	730-760C 1h50 min The temperature depends on the thermal efficiency of the kiln. The smaller kilns - higher temperature.	16%-30% depens on the temperature
GOLDIE de la ROSA BRONZE™	350C 20min on a grid of steel	935C 1h30min	11-14%
GOLDIE COPPER™	580C 20min on a grid of steel	960C depends on the thickness (2mm -2 hours, above- 3h)	12-18%

For firing, use of activated carbon from coconut shells.

Manual firing Goldie Metal ™

POWDER	1 STAGE	2 STAGE	shrinkage
GOLDIE BRONZE SOFT™	670F -20min on a grid of steel. -30min uncovered on a layer of carbon	1510F 40min	8-11%
GOLDIE BRONZE HARD™	670F -20min on a grid of steel. -30min uncovered on a layer of carbon	1510F 40min	8-11%
GOLDIE ROMAN BRONZE™	670F 20min on a grid of steel	1560F 1h30min	10-12%
GOLDIE SNOW BRONZE™	670F 30min on a grid of steel	1350-1370F 1h50 min The temperature depends on the thermal efficiency of the kiln. The smaller kilns - higher temperature.	16%-30% depens on the temperature
GOLDIE de la ROSA BRONZE™	670F 20min on a grid of steel	1715F 1h30min	11-14%
GOLDIE COPPER™	1080F 20min on a grid of steel	1740F depends on the thickness (2mm -2 hours, above- 3h)	12-18%

For firing, use of activated carbon from coconut shells.

Goldie FAQ.

Q: What kind of water should be used to mix with the powder?
A: You can use any kind of water - tap, distilled, whatever is available.

Q: What kind of charcoal should be used to fire bronze?
A: We recommend steam activated coconut shell charcoal, and not charcoal prewashed in acid. There are many kinds of coconut shell charcoal available, and it is recommended to use the best. A

good kind of charcoal has a high absorption coefficient - up to 1300m2/1g. Low quality charcoals don't get better than 400m2/1g, we don't recommend them. Activated charcoal vendors have certificates with their product's parameters. The perfect charcoal for Goldie products will have 800-1300m2/1g absorption parameters.

Q: I poured too much water and the clay is too runny, what should i do?
A: Roll the clay on plastic foil and dry it up a bit, using a hairdryer for example. Then gather up the clay and knead it like dough. Repeat until the texture and dampness of the clay is appropriate.

Q: The clay is too dry, it crumbles and breaks while being formed.
A: You need to add water, spray the clay with water, and knead again, until the texture and dampness of the clay is appropriate.

Q: I have problems with forming the clay, it crumbles.
A: The powder was not mixed properly, there's not enough binder in the part being used. In this case, all of the powder should be used, add the rest of the powder to the part mixed with water and knead like dough. Repeat several times till the clay has the appropriate texture and the air bubbles are gone.

Q: I mixed all of the clay with water, but a large piece was left after i finished work. What should i do to use the clay in the future?
A: You need to put the clay into an airtight string plastic bag, or an airtight container, add a few drops of water and close tightly. A piece of metal clay secured in this way can be used for a month.

Q: A piece of Goldie Snow Bronze™ clay turned yellowish while being stored, is it normal?
A: Yes, this metal clay, or more precisely, the binder enters a chemical reaction due to the high tin content. It's absolutely normal and nothing to worry about. After taking the clay out from the bag or container, the clay should be kneaded like dough. If it's to dry, add several drops of water and knead again. Clay is ready to use after this preparation.

Q: After the complete firing large flat surfaces are slightly wavy, what can i do?
A: All metals, except for Goldie Snow Bronze™ can be straightened by hitting lightly with a hammer. The waves can be caused by:
1. Drying process that went to quickly.
2. The charcoal layer that wasn't even. The layer should be flattened with a large flat object, so the surface is even.
3. Gradient, or the difference between the temperature of the element near the kiln door and the sensor might have been too big. This often happens in small kilns, for example, while firing Goldie Snow Bronze™
the temperature near the sensor is 740°C/1364°F and the temperature near the kiln door is 690°C/1274°F, which means a 50°C/122°F difference. Assuming that the container is 10cm long, the gradient of temperature difference is 5C/41F per 1cm. In case of an element of 4cm radius, the temperature difference is 20C/68F. If the elements are wavy after firing, or fired in a non centric way, it means that they should be placed vertically, then the temperature gradient will be 0°C/0°F.

Q: The table of parameters does not include RAMP, but i can set it in my kiln. How should i set it to fire Goldie clays?
A: Always set the RAMP parameter to the full.

Q: How do i press a pattern from a rubber or plastic stamp on Goldie clays?
A: Cover the stamp with a bit of water, so the whole surface is moist. There's no need to use oil for this purpose.

Q: Can i mix the clays together using the Mokume Gane technique?
A: Yes, but you have to remember to adjust the firing temperature to the clay that requires the lower one, for example, if using the Goldie Snow Bronze™ and Goldie Copper™ clays, you should set the kiln to 740°C/1370°F and increase the firing time by 50%.

Q: How do i fix cracks?
A: You need to prepare a paste in the following way: put a tiny bit of clay, or several grams of powder into a container, add water and mix with a paintbrush until the paste has a pudding texture - then the paste is ready. Clean all patina of the cracked surface, apply a thin layer of the paste and leave to dry. Then, glue the cracked elements together or fill in the cracks with clay. Leave to dry, then fire in two stages.

Q: Can i leave the cover of the steel container of while firing?
A: Yes, but the charcoal consumption will be a bit higher. It is recommended to leave the steel container open in small kilns. Small kilns have low heat capacity, so this is the appropriate procedure, it helps the heat reach fired elements faster.

Q: The element did not get fully fired, black powder remained inside.
A: The following problems could have occured:
1. The binder did not get fully burned in the first stage. You should increase the time of the binder burning by 10 minutes. The appropriate color of the whole surface after the first firing should be dark graphite.
2. The real kiln temperature is too low, it should be increased by 10°C/50°F in the second stage, or the time of the firing should be increased by 30-50%.

Q: Bubbles appear on the elements.
A: The temperature is too high in the second stage, metal started to melt instead of sintering.

Q: Can i use a ceramic container instead of a steel one?
A: No. Ceramic objects are heat isolators. The thermal resistance of the container could cause the temperature to be too low, not high enough for the metal to sinter properly.

Q: Can i use cork while working with Goldie?
A: No, the cork doesn't burn completely and leaves charcoal behind and that could disturb the firing process. We recommend using paper mass which turns into ash.

Q: Can i use ready bronze elements such as frames, ear wires, zirconia settings?
A: Yes, elements like that can be attached to wet clay and sintered.

Q: Can i use zirconias and other stones?
A: Yes, but not all stones and zirconias will be appropriate. You need to remember that Goldie is fired in a higher temperature than silver, so it's best to use synthetic zirconias, artificial rubies and corundum stones.