



**Hadar Jacobson**

Art in Metal Clay

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## Instruction Manual for Hadar's Clay™ High-fire Clays:

**Champagne Bronze™, Dark Champagne Bronze™,  
Friendly Rose Bronze™ and Friendly Copper™**

(See separate [instruction manual](#) for White Satin)

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## Why the new High-fire clays?

The new Hadar's Clay High-fire clays have been developed to simplify the firing process. They can all be fired in one phase only for two hours.

All these clays can be combined with each other and with Low-shrinkage Steel *XT* and White Satin in one piece. They cannot be combined with Quick-fire clays other than Low-shrinkage Steel *XT*.

The new High-fire clays (as well as the old Low-shrinkage Steel *XT* and the new White Satin) are suitable both for beginners and for experienced users of base metal clay.

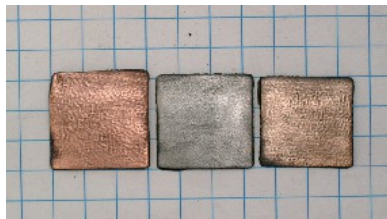
The new Hadar's Clay High-fire clays are the same as the other varieties of Hadar's Clay in terms of shelf life, storage, toxicity, mixing, consistency, etc. (see the [Instruction Manual for Hadar's Clay](#)). They do not contain allergenic ingredients such as nickel.

## Color

Champagne Bronze has a champagne color (similar to Smart Bronze). Dark Champagne Bronze is similar in color to Quick-fire Bronze. Friendly Rose Bronze has the same color as Quick-fire Rose Bronze, and Friendly Copper has the same color as Quick-fire Copper.

## Shrinkage

Champagne Bronze and Dark Champagne Bronze: flat pieces 6 cards thick shrink 30%, slightly more than Low Shrinkage Steel *XT*. Rings (tested at 6-card thickness) shrink 3 sizes. Rose Bronze and Friendly Copper: flat pieces 6 cards thick shrink 25%, rings shrink 1½ sizes.



Shrinkage comparison from left to right: Friendly Copper, Low-shrinkage Steel *XT*, Champagne/Dark Champagne Bronze.



Color comparison: left – Champagne Bronze; right – Dark Champagne Bronze.

The difference in shrinkage between the three clays has not proven to be a problem when combining them in one piece. When making flat pieces with backing layers, it is recommended to use Low-shrinkage Steel XT for the backing layer, twice as thick as the overlays.

## Firing Schedule

**Test-firing is not required.**

For best results use coconut shell carbon and a round stainless steel pet dish.

Champagne Bronze, Dark Champagne Bronze, Friendly Rose Bronze, and Friendly Copper on their own, or in combination with each other or with Low Shrinkage Steel XT, are fired in one phase at high-fire schedule (schedule S4 as described in the general [Instruction Manual for Hadar's Clay](#)).

### One-Phase Schedule

#### Brick kiln

Ramp at  
1800°F/1000°C per hour to 1750°F/955°C  
Hold for 2:00 hours.

#### Muffle kiln

Ramp at 1400°F/778°C per hour to 1800°F/982°C  
Hold for 2:00 hours.

*Bronzes fired on their own may require a lower temperature of 1720°F/937°C (brick); 1770°F/965°C (muffle).*

#### SpeedFire ElectricMini 1800 Kiln

Fire 2 hours at #10 setting.  
(Champagne Bronze and Dark Champagne Bronze on their own should be fired at setting #9.)



## Post-firing treatment

Both textured and non-textured surfaces of mixed-metal pieces show the contrast best when buffed with a coarse buffing wheel. No patina is required to enhance the color.

It is recommended to seal pieces made with Champagne and Dark Champagne Bronze on their own, as well as pieces made with Champagne or Dark Champagne Bronze, Friendly Copper, and Low shrinkage Steel XT. Acrylic sealers such as PYM II are recommended.

For detailed instructions for Hadar's Clay see the general [Instruction Manual for Hadar's Clay](#), available on the right-hand pane of [Hadar's Blog](#).

