Alloy - Frequently Asked Questions

Who is Sterngold?

Founded in 1897 as an assayer and refiner of precious metals.

Why as an assayer and refiner?

With any scientific formula, the purer the ingredients, the more stable the formula.

How is the price of precious alloys set?

Twice a day, once in the morning and again in the afternoon, in London, England, a group of bankers meet to balance the price between sellers of precious metals and buyers of precious metals.

How is the cost of an individual alloy set then?

The percentage of gold, platinum, palladium and silver, plus traces of expensive and rare elements to equal 100% of the formula. Manufacturing and refining costs are also factored in to establish a $ value for each segment of an ounce, be it in grams or pennyweights.

What is a pennyweight? (dwt)

1/20th of an ounce in the avoirdupois scale. Metric values will differ.

What is the difference?

Metric is based on the meter and gram. Avoirdupois is based on the yard and pound.

It's hard to match Crown & Bridge (regular) alloy color to a Ceramic alloy - Why?

Crown & Bridge alloys are stressed differently than a Ceramic. Composition changes to affect the melting point, also affect it's color. This, plus more alloy being exposed with the Crown& Bridge alloys. Allows for better light reflection, thus deeper color.

What can be done to assist in the matching of color?

Fortunately, there exists a Crown & Bridge alloy formula that accepts porcelain, to allow the matching of color. Bio 5 accepts the new low fusing porcelains, like DuCeragold, from DeGussa. If a metal occlusal is desired for porcelain work, this alloy and porcelain combination will match existing full gold crowns.

Why a low fusing porcelain and not the main stream brands?

In order to raise the temperature of alloys above the fusing point of porcelain, ingredients that affect its' color are added. To keep the color of gold, a lower fusing porcelain was necessary.

What brands of porcelain are compatible with your ceramic alloys?

At Sterngold, we routinely take one (1) ounce of alloy from each batch of ceramic formula and run a test of 6 (six) major brands of porcelain to check for bonding and compatibility. They are Ceramco. Creation, DeGussa, Synspar, Vita, and Williams/Ivoclar.

I need an alloy that can handle a four (4) pontic, two (2) abutment, anterior bridge. What do I look for?

Yield strength is a good place to start. This measurement is a measurement of the alloys' ability to resist permanent de-formation. Look for 50,000 psi or better for safety.

I occasionally still do pin ledge splints and gold frameworks for partial dentures. What should I look for?

Two (2) areas to begin with; Yield strength and elongation. Yield strength to resist permanent de-formation as the framework is required to "spring" over undercuts many times in its' lifetime. Elongation for the ability to "cold work" the alloy easily during its' fabrication. It can then be heat hardened to achieve the desired strength.

What is heat hardening?

The ability of an alloy to be hardened to achieve its' maximum strength. Under the Hardness column, notice two (2) numbers. One is as the alloy is cast and quenched in cool water. This softens the alloy for working and ease of polishing. After working, the alloy is placed back into a heat controlled atmosphere to "harden" the surface to prevent scratching and discoloration. Some alloys, say Horizon, can go from a hardness of 145 on the Vickers hardness scale and an Elongation of 45%, to a hardness of 250, and elongation down to 10%. An appreciable difference.

Why is this important?

When casting a plastic pattern for an attachment, say the ERA Partial Denture female, a MINIMUM hardness of 200 on the Vickers scale is necessary to prevent premature wear of the pattern under use. It is therefore very important to know your alloy and its' limitations for your useage.

What solders do you have for repairs before I apply porcelain?

Two, basically, both based on color and the ability to withstand the extreme temperatures of the porcelain cycles they will be subjected to. MFY for gold color, and Galaxy for use with white alloys, especially if the desire is to eliminate silver content from the alloy.

Is it necessary to use a flux with these two solders?

Yes, one should always use a flux. It cleans and protects both alloys during high temperatures. Sterngold offers two (2) very good FLUORIDE fluxes. Sigma-High for all solder operations before porcelain, and Sigma-Lo for all operations and repairs after the porcelain is applied.

How many units may I expect from an ounce of alloy?

You might find an answer under the SPECIFIC GRAVITY column. That's a measurement of how much alloy is required to fill a given space. The higher the number, the fewer the number of units you can expect. Therefore, Columbus alloy at 10.60, may produce twice as many units as Bio C at 19.39 per ounce.

I notice the number of "bio" alloys on your site, what are they?

Many people have shown slight to moderate reactions to some elements of metal in their daily life. The "bio" alloys are an endeavor to eliminate these elements as much as possible. The BIO alloys are tested against known protocols for allergies and have been found to be acceptable under most circumstances. For example, 2713 alloy is thought to be the MOST Biocompatible and HIGHEST noble formula on the market today.