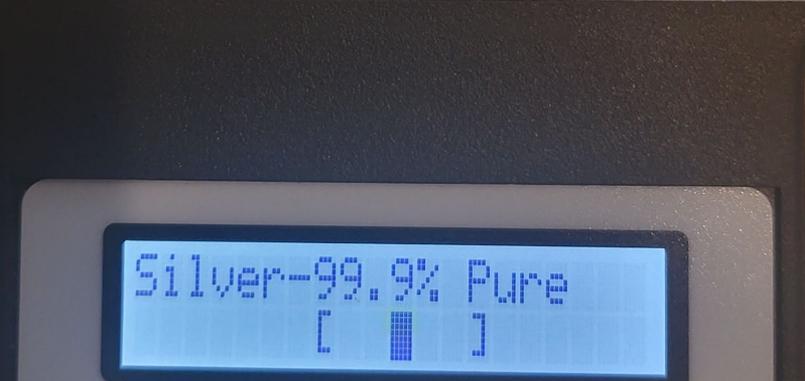




All these are real above



Some are real, most are fake below



- Most fakes, that pass the Sigma, or come close will always be to thick, or light in weight.
- This is because they are copper filled, which throws the Sigma off.
- Copper isn't as dense as Gold or Silver so if the fake bullion weighs correct, then it is going to be to big or measure to thick, tall, wide.
- Basically copper takes up more space or volume.
- Now if the bullion is the correct size, then it will weigh light because copper isn't as dense.



# BULLION / COINS

## QUICKLY IDENTIFY FAKES

Look up metal properties, and how they relate. Some are very similar and some are different.

**Step 1.** Set Sigma to Match the bullion karat/percentage of fineness (if the bar is out of the brackets = FAKE, if it's close like the Silver Eagle below move to the next step)



Passing 3 tests is important to verify the metal is authentic as stamped.

**Step 2.** (not in package): Check Weight against what it should be ( 31.1g) and actual (31.5g)



United States	
<b>Value</b>	1.00 U.S. dollar (face value)
<b>Mass</b>	31.103 g (1.00 troy oz)
<b>Diameter</b>	40.6 mm (1.598 in)
<b>Thickness</b>	2.98 mm (0.1173 in)
<b>Edge</b>	Reeded
<b>Composition</b>	99.9% Ag

**Step 3.** (not in package): Check diameter against what the bullion should be. In this example, it should be 40.6mm. It is matching up below. The thickness should be 2.98mm and it is 3.06mm. This is questionable and an indication it is bad.



# BULLION / COINS

## QUICKLY IDENTIFY FAKES

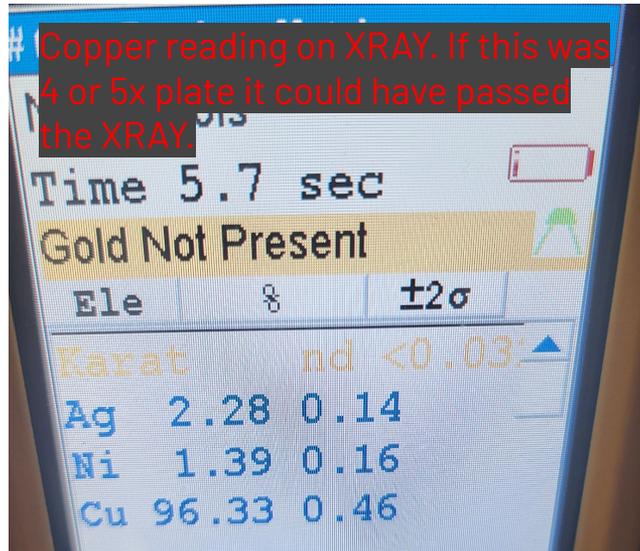
There are some things we can do first to determine if a coin, round, or bar is fake.

**Explained.** This is a pretty good American Eagle fake. It almost passes the SIGMA, the weight, and the caliper. 1 bar outside is typically not a straight FAIL. It also is close to passing the measurements for specific gravity. The bar being outside of the brackets, along with the other measurements being slightly off, would give a fail for us on an American Eagle.

**Step 4.** Hold the coin on your finger, then ding another coin against it. You should hear a distinct sound. Compare to a real one or another pure silver round. (this fake does not pass).

**Step 5.** XRAY: See how it is reads (remember if you have an XRAY it only test through a triple plating). So if this coin had more plating, it could have passed the XRAY. XRF or XRAY, typically is not really used for bullion.

**Step 6.** I normally do not recommend ever sanding bullion. In this case for training, we sanded it below and it is copper filled (we knew it would be from the XRAY and also partially pass the sigma).



# BULLION / COINS

## QUICKLY IDENTIFY FAKES

There are some things we can do first to determine if a coin, round, or bar is fake.

**Step 1.** Set Sigma to Match the Bullion Karat/Percentage of Fineness  
(if bar is out of brackets = Fake, if close like the PAMP below, go to the next step)



**Step 2.** ( in package): Check the thickness and height against what it should be. Thick plastic = bad take it out of the package (17.8mm Wide, 30mm Tall, 5.36mm Thick)



**Step 3.** ( in package): Check Measurements Against. 17.8mmx30mmx5.3mm=

**Gold Should Have:** 1,610 cubic mm per 1 troy ounce

This Bar Has: **2,830 Cubic MM**

This Bar is FAKE!

$$17.8 \times 30 \times 5.3 =$$

2830.2

FAKE

Should be: 1,610

The reason why, is it's probably copper filled. Copper will give false readings on the SIGMA

A tungsten bar/round/coin will pass the Caliper measurements but not the SIGMA. It has almost the same density as gold, but much different conductivity and resistivity (which the SIGMA uses to test).

# BULLION / COINS

## QUICKLY IDENTIFY FAKES

There are some things we can do first to determine if a coin, round, or bar is fake.

**01**

**Morgan Dollars:**

Check the weight: 26.73grams. If under 26grams, it must be really worn. If under 25.73, it is FAKE.

**02**

**Packaging:**

Thick packaging is a big no go. When in doubt take it out of the package, weigh, and SIGMA test.



Notice the difference

**03**

**Silver:**

Copper has similar conductivity but the density is much different so the weight or size will be off.

**04**

**Gold:**

Check the weight, and SIGMA on the correct setting. When in doubt, caliper it.

**05**

**Sigma:**

The "BAR" should be directly between the brackets.



**06**

**Sigma:**

The Sigma has several settings, make sure you notice 99.9 and 99.99.

**07**

**Sigma:**

The sigma can even work on 925 silver, and is a great way to help authenticate sterling silverware.

**08**

**Sigma Wand:**

The wand is calibrated to the device. Be sure not to lose them.

# Precious Metal Verifier Manuals



SCAN ME  
Sigma Guides



## Results Interpretation

The black cursor box will be between the brackets if the metal is within the expected range.



The black cursor box can read slightly to the left of the brackets if the sample:

- is lightly embossed
- is very cold.
- is too small and/or far away from the sensor

Further checking, research and analysis by another method is recommended.



The black cursor box can read slightly to the right of the brackets if the sample:

- is deeply embossed
- is very warm
- is too thin or too small for the chosen sensor (see calibration disk page 8)
- is off the center target on the main unit sensor

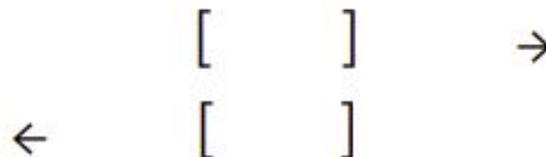
Further checking, research, and analysis by other methods is recommended.



The further the black cursor is outside the brackets the more likely it is that the sample is not made from the selected metal. Further checking, research and analysis by another method is recommended.



If a left or right arrow appears, then the metal in the sample is most likely not the metal selected.



# BULLION / COIN VALUES TIPS & TRICKS

There are some things we can do first to determine if a coin, round, bar is fake.

01

<https://www.moneymetals.com>

Find the coin/round/bar and look for the "SELL TO US PRICE". This is the wholesale value



**Sell to Us Price:** \$1,865.15 each.

02

<https://jmbullion.com/>

Find the coin/round/bar and look for the "SELL TO US PRICE". This is the wholesale value

Sell to Us Price: \$2,041.33 ⓘ

03

1964 and before dimes, quarters and half dollars are 90% silver.

**Trick:** Facevalue. 10 dimes = \$1 or \$1 Face Value. 5 dimes and 2 quarters = \$1 or \$1 Facevalue.

\$1 Face Value has coins contains .715 troy ounces of Silver or 20.26 Grams

<https://www.coinflation.com/>

04

Most "RARE" coins are not worth extra unless authenticated by NGC or PSCGS. You can look up the number on their website.

<https://www.ngccoin.com/>  
<https://www.pcgs.com/>

# GUIDE TO METAL CHARACTERISTICS

Metals have different characteristics. Some are similar, some are different.

## SILVER

Has similar conductivity/resistivity to COPPER but a different density.

Density: 10.49 grams/cm<sup>3</sup>

Conductivity: 61,1

Resistivity: 1,6

Volume:

1 Troy Oz = 2,964.7mm  
(length x width x height)



## GOLD

Has similar density to TUNGSTEN but different a conductivity.

Density: 19.30 grams/cm<sup>3</sup>

Conductivity: 44,2

Resistivity: 2,3

Volume:

1 Troy Oz = 1,609.7mm  
(length x width x height)



## COPPER

Has similar conductivity/resistivity to SILVER but a much different density.

Density: 8.96 grams/cm<sup>3</sup>

Conductivity: 58,7

Resistivity: 1,7

Volume:

1 Troy Oz = 3,470.9mm  
(length x width x height)



## TUNGSTEN

Has similar density to GOLD but a much different conductivity.



Density: 19.25 grams/cm<sup>3</sup>

Conductivity: 8,9

Resistivity: 11,2

Volume:

1 Troy Oz = 1,611mm  
(length x width x height)

# GUIDE TO METAL CHARACTERISTICS

Metal	Specific Gravity	Volume in MM	Resistivity $\rho$ (ohm m)	Conductivity $\sigma$ x 107 / $\Omega$ m
Aluminum	2.7	11,519.81	2.82 $\times$ 10 <sup>-8</sup>	3.5 $\times$ 10 <sup>+7</sup>
<b>Copper</b>	<b>8.96</b>	<b>3,471.37</b>	<b>1.68x10-8</b>	<b>5.96<math>\times</math>10<sup>+7</sup></b>
<b>Gold</b>	<b>19.32</b>	<b>1,609.91</b>	<b>2.44<math>\times</math>10<sup>-8</sup></b>	<b>4.10<math>\times</math>10<sup>+7</sup></b>
18K Green	15.9	1,956.19		
18K Yellow	15.58	1,996.37		Notice the Volume of Tungsten and Gold are almost the same.
18K White	14.64	2,124.56		
18K Red	15.18	2,048.98		
14K Green	14.2	2,190.39		
14K Yellow	13.07	2,379.76		Notice the resistivity is much different. This is why the Tungsten filled bars will not pass the sigma, but will pass other tests.
14K White	12.61	2,466.57		
14K Red	13.26	2,345.66		
10K Green	11.03	2,819.90		
10K Yellow	11.57	2,688.29		
10K White	11.07	2,809.71		
10K Red	11.59	2,683.65		
Nickel	8.9	3,494.78		Notice Copper has over double the volume of gold?
Palladium	12	2,591.96		
Platinum	21.45	1,450.05		
Rhodium	12.44	2,500.28		
<b>Silver</b>	<b>10.49</b>	<b>2,965.06</b>	<b>1.59<math>\times</math>10<sup>-8</sup></b>	<b>6.30<math>\times</math>10<sup>+7</sup></b>
Sterling Silver	10.36	3,002.27		
Coin Silver	10.31	3,016.83		
Tin	7.3	4,260.75		
<b>Tungsten</b>	<b>19.25</b>	<b>1,611.00</b>	<b>5.6 x10-8</b>	<b>1.79<math>\times</math>10<sup>+7</sup></b>
Zinc	7.13	4,362.34	5.90 $\times$ 10 <sup>-8</sup>	1.69 $\times$ 10 <sup>+7</sup>

- If you really like to geek out on this stuff, and understand it.
- Look up: "DUX+C" for Density, Ultrasound, Xray, Conductivity.