Sigma Metalytics

Coin Reference Booklet

Introduction

This Coin Reference Booklet provides specifications for the most popular coins in the U.S. market. This booklet details the weights and sizes of the listed coins, as well as the correct setting to use on the Precious Metal Verifier (PMV) when testing these coins. Remember, counterfeiters can fake **either** the density **or** the resistivity, **but not both**. By confirming the weight, size, and resistivity, the user can confirm that the sample has the correct density and resistivity, and is therefore consistent with the expected metal type. **It is best practice to test both density and resistivity.**

Some notes on using this booklet:

- **The provided thicknesses and diameters are determined using calipers.**
- **There will be slight variance when measuring samples at home due to differences in caliper and scale calibration.** Be as accurate as possible, but know that counterfeits tend to be at least 5-10% off in size or weight.
- **This booklet is intended for PMV Original users.** The PMV PRO and PMV Investor receive their own respective Coin Reference Booklets which are designed for use with those devices.
- Weights and sizes are listed to three decimal places. Not all scales and calipers are that precise; your scale or calipers may round to the nearest one or two decimal places. That is okay. Generally, a counterfeit will be off by more than one decimal place.

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NOTE:

This booklet covers the most popular and common samples found in the US Market. It does not contain an exhaustive coin database.

Testing Samples

It's important to properly test your precious metal coins and bars to ensure they are genuine. By testing certain key features of your coins and bars, you can quickly and effectively check for authenticity.

Weight

- Use an accurate scale to confirm that the sample weighs the correct amount.
- Counterfeit samples may weigh too little or too much; usually they weigh too little.
- There is some variation in genuine samples. These variations are very small and should not be more than 2% of the sample's expected weight.

Size

- Use an accurate set of calipers to confirm the dimensions of the sample.
- For rounds and coins, that's the thickness and diameter.
- For bars, that's the thickness, length, and width.
- Counterfeits that are the wrong size are often larger than genuine pieces.

Testing Samples

Markings

- Ensure the sample has the correct markings, like design details, dates, words, and reeding.
- Coins and bars usually have detailed and unique designs. Compare your sample to images online or a reference book to confirm the markings match.
- Some websites, like PCGS and NGC, provide high-resolution images of graded coins for comparison.

Resistivity

- Use your Sigma Metalytics device to confirm your sample has the correct resistivity.
- Select the sample's expected alloy type and test the sample. If it passes, then it's resistivity is consistent with the genuine alloy.
- Make sure your device is set to the correct alloy type for the sample. **Testing samples on settings other than the expected alloy type does not provide valuable information.**

PMV Best Practices

The Precious Metal Verifier is a technical device which can be tricky to use at first. Be sure to follow the instructions provided in the device's user guide for the basic use of the device. There are some easy ways to get the most out of your device.

Make Sure the PMV Is on the Right Setting

- If the PMV is on the wrong setting, the results won't be usable, no matter what they say. Always confirm it's on the correct alloy setting for the sample.
- The PMV **cannot** be used to "find" the alloy of a sample by testing it on different settings to determine which it passes. That is not a reliable way to determine the alloy of a sample.

Equalize Temperature

- Temperature plays an important role in resistivity testing. Always ensure your device and your sample are at or near the same temperature for accurate results.
- A temperature difference of more than about 10 - 15 degrees Fahrenheit can cause unreliable or inaccurate readings.

PMV Best Practices

Use the Right Sensor for the Right Sample

- Each sensor is designed for samples of certain sizes. Using a sensor that's too large for your sample will cause bad readings, and using a sensor that's too small for your sample will not test as deep as it could.
- You can use the sensor selection section column in the reference charts to make sure you're using the right size sensor.
- For samples not included in this booklet, refer to Page 8 for minimum thickness and diamater.

Test Both Sides

- The PMV Original's onboard sensors and the Wands for all PMV devices have a limited penetration depth. To ensure you are testing as thoroughly as possible, test the sample on both sides. The readings should be identical or very similar.
- You may see slight variation between the two sides of a sample. Relief, design, stamping, and other surface differences may cause the sensor to read the two sides slightly differently.

Sensor Minimums

Each sensor on the Precious Metal Verifier has a minimum sample diameter and minimum sample thickness in order to provide an accurate result. Below is the chart for that information.

Sensor	Diameter (mm)	.999+ Silver Thickness (mm)	.999+ Gold and Silver Alloy Thickness (mm)	Gold Alloys, Platinum, and Palladium Thickness (mm)	Rhodium Thickness (mm)
Onboard	24.0	1.0	1.1	2.4	1.6
Small Wand	8.0	0.8	0.8	1.7	1.1
Large Wand	18.0	0.8	0.8	1.7	1.1
Bullion Wand	24.0	4.0	4.5	7.0	6.3

Using the Calibration Disk to Test Thinner Samples

- You can use the included calibration disk (cal disk) to test thinner samples when using the Wands.
- If a sample is thinner than the minimum required thickness, try placing the cal disk behind the sample to act as a “backing” - that will enhance the signal from the Wand and allow for testing of thinner samples.

Tips for Testing Gold

- Always test both resistivity and density. If you only test one, counterfeits could slip by.
- Always confirm the device is on the correct setting. Some historic gold coins have been re-minted with different purities over time; make sure the device is on the right one.
- Gold pieces can be quite small, which means they can heat up quite quickly in our hands. Be sure your sample is near or at the same temperature as your device to ensure you are getting an accurate test.
- Measuring gold samples in assays can be tricky. Do your best to confirm the size and weight in addition to the resistivity. Counterfeit gold bars in assays are frequently the wrong thickness.
- ***If a deal is too good to be true, it probably is!***

GOLD

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
$50 American Gold Buffalo	1.000	31.103	2.95	32.70	Gold-.9999+	Onboard
$25 American Gold Buffalo	0.500	15.550	2.24	27.00		Onboard
$10 American Gold Buffalo	0.250	7.776	1.83	22.00		Large Wand
$5 American Gold Buffalo	0.100	3.110	1.19	16.50		Small Wand
$50 American Gold Eagle	1.090	33.930	2.87	32.70	Gold-Eagle or Coins-Gold Eagle	Onboard
$25 American Gold Eagle	0.545	16.965	2.24	27.00		Onboard
$10 American Gold Eagle	0.273	8.483	1.83	22.00		Large Wand
$5 American Gold Eagle	0.109	3.930	1.19	16.50		Small Wand + Cal Disk

GOLD

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
$100 Australian Kangaroo	1.000	31.103	2.00	37.00	Gold-.9999+	Onboard
$50 Australian Kangaroo	0.500	15.550	1.60	28.00		Onboard
$25 Australian Kangaroo	0.250	7.776	1.20	22.00		Large Wand
$10 Australian Kangaroo	0.100	3.110	1.20	16.00		Small Wand
€100 Austrian Philharmonic	1.000	31.103	2.00	37.00		Onboard
€50 Austrian Philharmonic	0.500	15.550	1.60	28.00		Onboard
€25 Austrian Philharmonic	0.250	7.776	1.20	22.00		Large Wand
€10 Austrian Philharmonic	0.100	3.110	1.20	16.00		Small Wand

GOLD

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
$50 Canadian Maple Leaf	1.000	31.103	2.80	30.00	Gold-.9999+ or Gold-Maple Leaf or Coins-Gld Maple Leaf	Onboard
$25 Canadian Maple Leaf	0.500	15.550	2.23	25.00		Large Wand
$10 Canadian Maple Leaf	0.250	7.776	1.70	20.00		Large Wand
$5 Canadian Maple Leaf	0.100	3.110	1.22	16.00		Small Wand
1 oz Chinese Panda	1.000	31.103	2.70	32.00	Gold-.999	Onboard
1/2 oz Chinese Panda	0.500	15.550	1.85	27.00		Onboard
1/4 oz Chinese Panda	0.250	7.776	1.53	21.95		Large Wand
1/10 oz Chinese Panda	0.100	3.110	1.05	17.95		Small Wand

GOLD

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
1 oz Credit Suisse Bar	1.000	31.103	1.66	41.00 L 24.00 W	Gold-.9999+	Onboard
1 gram Credit Suisse Bar	0.032	1.000	0.41	15.00 L 8.50 W		Small Wand
5 gram Credit Suisse Bar	0.161	5.000	1.36	23.05 L 13.85 W		Small Wand
10 gram Credit Suisse Bar	0.322	10.000	1.36	25.30 L 15.20 W		Small Wand
1 oz Mexican Libertad	1.000	31.103	2.50	34.50	Gold-.999 or Coins-.999 Gold Lib. orh Coins-90% Gold Lib.	Onboard
1/2 oz Mexican Libertad	0.500	15.550	1.80	29.00		Onboard
1/4 oz Mexican Libertad	0.250	7.776	1.30	23.00		Large Wand
1/10 oz Mexican Libertad	0.100	3.110	1.30	16.00		Small Wand

GOLD

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
1 oz PAMP Suisse Bar	1.000	31.103	1.66	41.40 L 24.40 W	Gold-.9999+	Onboard
1 gram PAMP Suisse Bar	0.032	1.000	0.40	14.70 L 8.90 W		Small Wand
5 gram PAMP Suisse Bar	0.161	5.000	0.90	22.10 L 13.10 W		Small Wand
10 gram PAMP Suisse Bar	0.322	10.000	1.25	26.50 L 15.80 W		Small Wand
1 oz S. African Krugerrand	1.197	33.930	2.84	32.77	Coins-Gold Krug. or 91.67% 22k bal Cu	Onboard
1/2 oz S. African Krugerrand	0.598	16.965	2.22	27.07		Onboard
1/4 oz S. African Krugerrand	.299	8.482	1.89	22.06		Large Wand
1/10 oz S. African Krugerrand	0.120	3.393	1.35	16.55		Small Wand + Cal Disk

GOLD

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
1 oz U.K. Britannia	1.000	31.103	1.80	32.69	Select from: Coins-Gld Brit Select the correct coin era setting	Onboard
1/2 oz U.K. Britannia	0.500	15.550	2.08	27.00		Onboard
1/4 oz U.K. Britannia	0.250	7.776	1.63	22.00		Large Wand
1/10 oz U.K. Britannia	0.100	3.110	1.20	16.50		Small Wand
1 oz Valcambi Suisse Bar	1.000	31.103	2.3	38.00 L 22.00 W	Gold-.9999+	Large Wand
1 gram Valcambi Suisse Bar	0.032	1.000	0.55	15.00 L 8.50 W		Small Wand
5 gram Valcambi Suisse Bar	0.161	5.000	1.00	23.05 L 13.85 W		Small Wand
10 gram Valcambi Suisse Bar	0.322	10.000	1.36	25.30 L 15.20 W		Small Wand

Tips for Testing Silver

- Always test both resistivity and density. If you only test one, counterfeits could slip by.
- If your 90% U.S. silver tests out of the range on its intended era, try testing on the prior era. We believe the mint re-melted some old batches of silver to mint new coins, meaning they have the qualities of older coins. If it still tests out of the range on the prior era, it is a highly questionable sample.
- Most private mint silver is 99.9% (.999) purity. We have seen a number of private mint bars (especially 10 oz and 100 oz) from the 1980s read out of the range due to contaminants in the minting process.
- Modern sandwich quarters will read within the acceptable range on the 90% Silver setting. Modern coinage is designed to have the same resistivity to ensure they work in coin machines with older coinage. The best way to ensure your quarters are 90% silver is to check their weight.
- ***If a deal is too good to be true, it probably is!***

SILVER

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
American Silver Eagle	1.000	31.103	2.98	40.60	Silver-.999	Onboard
Australian Kangaroo	1.000	31.103	3.20	40.60	Silver-.9999	Onboard
Austrian Philarhmonic	1.000	31.103	3.20	37.00		Onboard
Canadian Maple Leaf	1.000	31.103	3.29	38.00		Onboard
Chinese Panda	1.000	31.103	2.98	40.00	Silver-.999	Onboard
Mexican Libertad	1.000	31.103	3.00	40.00		Onboard
S. African Krugerrand	1.000	31.103	2.84	38.70		Onboard
U.K. Britannia (1997 - 2012)	1.040	32.450	3.10	40.00	Silver-96% Britannia	Onboard
U.K. Britannia (2013 - Pres.)	1.000	31.103	3.00	38.61	Silver-.999	Onboard

SILVER

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
U.S. 1921 - 1935 Peace Dollar	0.859	26.730	2.40	38.10	Silver-90% Select the correct coin era setting	Onboard
U.S. 1878 - 1904, 1921 Morgan Silver Dollar	0.859	26.730	2.40	38.10		Onboard
U.S. 90% Silver Dime	0.080	2.500	1.35	17.91		Small Wand
U.S. 90% Silver Quarter	0.201	6.250	1.75	24.30		Large Wand
U.S. 90% Silver Kennedy Half Dollar	0.402	12.500	2.15	30.60		Onboard
U.S. 90% Silver Liberty Half Dollar	0.402	12.500	1.80	30.63		Onboard

Tips for Testing Platinum

- Always test both resistivity and density. If you only test one, counterfeits could slip by.
- Platinum is dense, so platinum coins and bars are usually quite thin. If you're having trouble getting a good reading, try placing the calibration disk behind the sample or using a smaller sensor.
- The platinum setting on the PMV (under "Other - Platinum") is calibrated for pure platinum only (.999+). Samples of lower purity are rare and will not be testable with the PMV.
- Platinum and palladium have very similar resistivities. However, platinum is much more dense than palladium, so be sure to check the weight and size of your sample!
- ***If a deal is too good to be true, it probably is!***

PLATINUM

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
American Eagle	1.00	31.103	2.50	32.70	Other-Platinum	Onboard
Austrian Philharmonic	1.000	31.103	1.00	37.00		Large Wand + Cal Disk
Canadian Maple Leaf	1.000	31.103	2.62	30.00		Onboard
U.K. Britannia	1.000	31.103	3.00	32.69		Onboard

My Collection

You may have more sample types than we have listed in this booklet. The following pages give you space to record the specific data for any coins or bars that we don't have listed.

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection
10 oz RCM Bar	10.0	310.03	7.60	90 x 52	99.99% Silver	Bullion Wand

Record your sample's info and reference it later!

Tip: Be sure to use trustworthy sources, like verified coin books or trusted online databases, to ensure you have the correct info.

My Collection

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection

My Collection

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection

My Collection

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My Collection

Name	Weight (ozt)	Weight (grams)	Thickness (mm)	Diameter (mm)	Alloy Setting	Sensor Selection