

An Introduction to Identifying Common Materials in Antiques

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uranium glass statue, made
from radioactive uranium salts

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Chapter 1: Introduction

Materials (ceramics, wood, metal, fur, plastic, paper, etc) is a massive, ongoing area of study and research. There have been volumes of literature written just on diamonds, a university professor may spend his career studying paper and a New York art gallery may sell artworks made only of glass.

For the collector and seller, the use in being able to identify and date materials in art, memorabilia and collectibles should be obvious. A '1660s toy boat' can't be made out of 1920s plastic. An auctioned '1800 map' has to be made from the kind of paper used in the time period. A trinket made of gold will be worth more than one made from brass. Many fakes, forgeries and genuine items are in part identified by identifying the material.

Beyond authentication and fake detection, many people are simply interested in knowing what an item is made out of. Whether an old paperweight on a co-worker's desk is made out of cranberry glass or lucite, that's nice to know. Whether the painting on the wall is oil paint or encaustic, that an interesting fact to learn. It's like enjoying identifying birds at the park. Identifying materials can be a hobby and enjoyment in and of itself.

This guide is a brief introduction and beginner's guide to common materials found in antiques. As a primer it not intended to cover everything nor make the reader into the next museum curator or Sotheby's expert. It sticks to more commonly found materials and basic information.

This guide is intended as a supplement and springboard to the reader's further education, which includes hands on examination, further reading and asking questions. Web links to further reading are included throughout.

Chapter 2: Tools and methods

This chapter describes some of the tools and methods used in materials identification. Covered in this chapter are:

magnifier

black light (longwave ultraviolet light)

Mohs hardness test

hot needle test

A magnifier or jeweler's loupe

A good magnifier is always useful, from a jeweler's loupe to a Sherlock Holme's style magnifying glass to a handheld microscope. 10x-20x power is useful enough. I'm not picky about type or sales price. Whatever works for you is fine. Magnifiers are inexpensive so you can own multiple if you want.

Black light (longwave ultraviolet light)

A blacklight is an inexpensive and easy to use scientific tool that is useful in many areas of collecting.

Longwave ultraviolet light, commonly known as black light, is a range of light invisible to human eyes. While it cannot be seen, UV light makes some materials fluoresce, or glow in the dark. This florescence ranges in color and brightness, and helps scientists and hobbyists identify and study material.

Black lights are inexpensive and can be bought at eBay, amazon.com and similar. They come in many styles and powers. This includes screw in bulbs and large and small flashlights. I own a small flashlight style and a screw in bulb. Both were inexpensive and serve different purposes. The bulb screws into a standard light socket and the flashlight can be carried around in my pocket. As long

as the light gives off black light, the style is up to you.



The above little flashlight is good for authenticating art, currency and such. They take batteries and can be carried around most anywhere. This is the most popular style for collectors.



The above pocket sized LED and other high powered black lights are good for rock hunting and general inspection, and are also good for examining art, collectibles and currency. It uses batteries, so you can take it anywhere.



Screw in black light light bulbs as shown here are especially good for art and crafts displays such as posters, paintings and clothes. This type of light can also work well for inspecting art, but is not as portable as the earlier shown flashlights. As you can see, they look like a regular screw in visible light fluorescent light bulb except the bulb is black not white . . . Be careful when purchasing screw in black lights, as many are not ultraviolet. Make sure it specifically mentions that it is UV or makes things glow in the dark. Many incandescent 'black light' bulbs are not ultraviolet. The non-UV incandescent lightbulbs are cheap, so if you pick the wrong one you

won't be throwing away lots of money.

How to use your blacklight

Once it's plugged in or the batteries popped in, most blacklights are as easy to use as normal flashlights. The blacklight only works in the dark, the darker the better. They can work outside at night and inside in a dark room. You should stay in the dark for at least a couple of minutes so your eyes get adjusted to the dark. After that, shine the blacklight around and you should find things that some things fluoresce, meaning they glow in the dark. Most black lights emit a small amount of visible light so that you know it's on.

When you are later examining specific objects-- like a photo card or dollar bill-- it's best to examine a material against something that does not fluoresce. If the background gives off light it may effect the results.

Safety of blacklight

You'll be happy to know that UVA or blacklight is the safest type of the ultraviolet light. The light you will use is just longer in frequency than visible light. In fact, regular sunlight contains UVA light, so you're exposed to it on a daily basis. It is UVC, or shortwave, that is more dangerous and extra care is to be taken.

While blacklight is not of great danger, reasonable care should still be taken. The key with blacklight is to not stare directly at the light source, just as you shouldn't stare directly at the sun or a regular light bulb. And, as with sunlight, don't overdo exposure. Don't try and suntan with your black light.

Test your blacklight around the house

In the dark, go around your home or office and see which things fluoresce and which do not. Common around the house things that fluoresce include:

White paper

Some cloth, including parts of shirts, hats.

Laundry detergent, eyeglasses

Some glass and plastics

Some things will fluoresce so brightly you can almost read by it!

Mohs scale of hardness

The Mohs scale of hardness is used to identify the relative hardness of a substance, from copper to glass to alabaster. This is important in identifying metal, gems, minerals and other substances. The scale is based on the ability of a harder substance to scratch a less hard material. Diamond is able to scratch steel, steel is able to scratch wood, wood is able to scratch chalk.

In the Mohs scale, materials are assigned a level of hardness 1 through 10, with one being the softest material (talc) and 10 being the hardest (diamond). If a material has a Mohs hardness of 5, that would mean it would scratch a material with a hardness of 3. If an as advertised as diamond (supposed to have a hardness 10) is scratched by steel (hardness 5), then it clearly is a fake.

You can buy inexpensive Mohs testing kits on eBay and at amazon. The kits simply contain 9 different numerically labelled minerals each with a Mohs hardness of 1 through 9. I recommend getting one. Easy to use.



Standard Mohs testing kit, containing materials of different Mohs 1-9 in a box. Each material is clearly labelled 1-9. The kit may contain other common materials, such as glass, a penny and a nail.

You can also use many around the house items for quick reference, including glass, nails and pennies. The following is a 1 through 10 list of different substances.

- 1: (softest): talcum, chalk
- 1.5: tin, lead, graphite
- 2: Gypsum, plaster of paris
- 2.5-3: human fingernail, magnesium, gold, silver, aluminum, zinc, Jet (lignite)
- 3: calcite, US penny, copper, arsenic, antimony, thorium, dentin
- 4: fluorite, iron, nickel, iron nail
- 5: Apatite, tooth enamel, obsidian (volcanic glass)
- 5.5-6.5: Glass
- 6: Orthoclase feldspar, titanium
- 7: Quartz, steel file, ceramic tile
- 7.5-9: emerald, hardened steel, tungsten, garnet
- 8: Topaz, cubic zirconium
- 9: Corundum, ruby
- 10 (hardest in nature) Diamond. (There is a diamond of Mohs 11, but this rare material is commercially made for industrial purposes only.)

Hot pin test

An often used test in material identification is the hot needle or hot pin test. This involves heating a bent needle and pressing it into the material. How easy it enters and the smell given off can help identify materials. This is a bit of a controversial test as it makes a little hole or other mark. Some choose not to use it at all or, when they do, they do the test in an inconspicuous place. In the end, your choice and your collectible.

Chapter 3: PAPER

Having a basic knowledge of paper is important for collectors and dealers. Many collectibles are on paper stock-- etchings, movie posters, autographs, baseball cards, photographs, watercolor paintings. Many paper or cardboard fakes and reprints are identified as the paper is too modern or the wrong type for the print to be an original.

While the type and age of the paper can help determine the authenticity of a print or autograph, it is not in and of itself proof. Some forgers use old paper. However, many prints are identified as fakes because the paper used is too modern or otherwise inconsistent with the original.

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The following are standard types of paper.

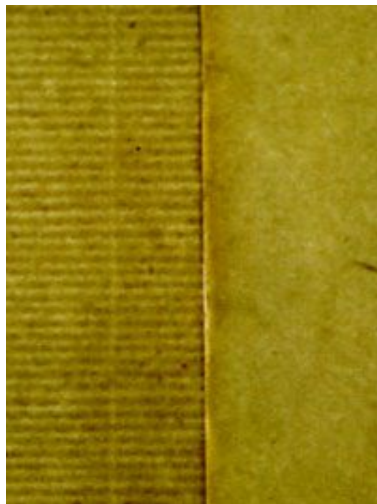
Laid paper: Until the 1750s, all paper was laid paper. It was made on a mesh consisting of strong wires about an inch apart, with finer wires laid close together across them. This gridiron pattern can be seen when the paper is held to the light. Today, some writing paper is still laid, though the pattern being more of a decoration.

A paper print from the 1500s or 1600s has to be on laid paper.



Laid paper showing the distinct gridiron lines, along with a watermark in the middle.

Wove paper: About 1755, wove paper was invented. Wove paper is made on a finely woven mesh, so the paper does not have the rigid lines pattern of laid paper. Laid and wove paper are easily differentiated when held to the light. Most of today's paper, including computer printer and typing paper, is wove. No print from before 1750 could be on wove paper.



Laid paper (left) next to wove paper (right)

Rag versus wood pulp.

In the early history paper was made from cotton rags. Starting about the mid 1800s, rag pulp began to be replaced by wood pulp. Wood became a popular choice due to the scarcity of rags and because wood pulp paper was cheaper to manufacture. The first successfully made American wood pulp paper was manufactured in Buffalo, New York, in 1855. By 1860, a large percentage of the total paper produced in the U.S. was still rag paper. Most of the newspapers printed in the U.S. during the Civil War period survived because they were essentially acid-free 100% rag paper, but the newspapers printed in the late 1880s turn brown because of the high acid content of the wood pulp paper. In 1882, the sulfite wood pulp process, that is still in use today, was developed on a commercial scale and most of the high acid content paper was used thereafter in newspapers, magazines and books.

Counterintuitively, modern paper, especially in books, letters and newspapers, is much more likely to turn brown and brittle than paper from before the American Civil War. For the beginning collector, the paper on an early 1800s print can be surprisingly fresh and white.



20th century newspapers become heavily toned and brittle due to the high wood pulp content.

* * * *

Chronology of Paper

The following is a brief chronology of paper history. Paper has been traced to about 105 AD China. It reached Central Asia by 751 and Baghdad by 793, and by the 14th century there were paper mills in several parts of Europe.

- 105: Paper making invented in China.
- 400: Invention of true ink in China.
- 610: Paper making introduced to Japan from China.
- 770: The earliest instance of text printing upon paper, in China.
- 868: Earliest printed book, the Diamond Sutra, in China.
- 900: First use of paper in Egypt.
- 1228: First use of paper in Germany.
- 1282: Watermarks first used in Europe.
- 1319: Earliest use of paper money in Japan.
- 1450-55 Johan Gutenberg's forty two line Bible produced.
- 1470: First paper poster, in the form of a bookseller's advertisement.
- 1521: First use of rice straw in Chinese paper.
- 1589-91 European printing introduced to China and Japan.
- 1609: First newspaper with regular dates (Germany)
- 1662: First English newspaper introduced
- 1869: The first 'Dutch Gilt' papers made in Germany.
- 1750: Cloth backed papers introduced. Used for maps, charts, etc.
- 1755: Wove paper introduced
- 1758: First forgery of bank notes
- 1763: First Bible printed in America using American paper.
- 1800-10s: Practical paper making machines developed
- 1824: First machine for pasting sheets of paper together is introduced. Cardboard is first formed.
- 1830: Sandpaper introduced commercially.
- 1830s: Coated paper introduced. This paper is usually coated with China clay, which makes it white and smooth, sometimes glossy. It is most often used in art and illustrated books.
- 1842: Christmas card invented.
- 1844: First commercial paper boxes made in America.
- 1854: Paper made from chemical wood pulp patented.
- 1862: Tracing paper introduced commercially
- 1871: Roll toilet paper introduced.
- 1875: First instance in U.S. of paper coated on both sides.
- 1903: Corrugated cardboard introduced. Replaced many wooden

boxes.

1905: Glassine paper introduced

1906: Paper milk-bottles introduced

1909: Kraft paper introduced

1910: Bread and fruit wrapped in printed paper

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Some common fine art paper terms

Blind stamp: an embossed seal used to identify the artist, publisher, printer or collector. It is usually stamped or pressed into the paper.

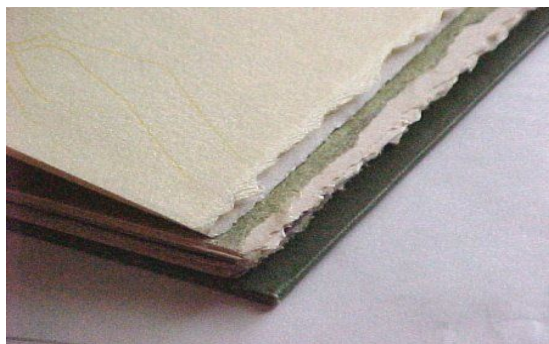


Blind stamp or dry stamp

China Paper: a soft paper made in China for think books.

Chine appliqué, or chine collé: a chine appliqué is a print in which the image is pressed into a thin sheet of China paper which is backed by a thicker and stronger paper. Some proof prints are chine appliqués.

Deckle edge: the rough, almost feathery edge on hand made paper.



deckle edge paper

Embossment: A physically raised or depressed design in the paper.

Enameled paper: any coated paper. Some paper and card stock is coated in white to make the printed graphics appear brighter.

Glassine paper: A super smooth, semi-transparent paper that is often used to make the envelopes that hold stamps.



Glassine paper envelope

Hand made paper: Paper made by hand in individual sheets.

India paper: an extremely thin paper used primarily in long books to reduce the bulk.

Machine Made Paper: Made on a machine called a "Fourdrinier." Produces consistent shape and textured paper.

Marbling: a decorative technique of making patterns on paper

Mouldmade Paper: paper that simulates hand made paper, but is made by a machine.

Parchment: An ancient form of paper made out of animal skin. It is smooth and semi-translucent

Plate Finish: A smooth surface made by a calendar machine.

Rag Paper: Made from non-wood fibers, including rags, cotton lintens, cotton or linen pulp.

Rough: a heavily textured paper surface

Tooth: A slight surface texture.

Vellum: a modern version of parchment, with the same dense, animal skin-like appearance. A slightly rough surface and is semi-translucent. Some drafting paper is called vellum.

Velox: Black and white paper print for proofing or display.

* * * *

Watermarks

For centuries paper manufacturers have often distinguished their product by means of watermarks. A watermark is a design in paper made by creating a variation in the paper thickness during manufacture. The watermark is visible when the paper is held up to a light. Watermarks can sometimes give important information about the age of the paper and the authenticity of the print.

Watermarks are known to have existed in Italy before the end of the 13th century. Two types of watermark have been produced. The more common type, which produces a translucent design when held up to a light, is produced by a wire design laid over and sewn onto the sheet mold wire (for hand made paper) or attached to the "dandy roll" (for machine-made paper). The rarer "shaded" watermark is produced by a depression in the sheet mold wire, which results in a greater density of fibers--hence, a shaded, or darker, design when held up to a light. Watermarks are often used commercially to identify the manufacturer or the grade of paper. They have also been used to detect and prevent counterfeiting and forgery.

Catalogs often list watermarks used or otherwise discuss watermarks as it relates to the artists' work.

Examples of how watermarks help identify prints:

If a Salvador Dali print has a watermark consisting of the word "ARCHES" with an infinity sign (sideways '8') beneath, the print is a fake. Dali used ARCHES brand paper, but in 1980 ARCHES added the infinity sign to the watermark. 1980 was past Dali's working career and Dali himself stated that he never used the

'infinity' paper. While this watermark is easily identified, some enterprising forgers and dealers, picked the 'infinity' paper where the watermark was near an edge so they could conveniently cut off the infinity. A simple rule of thumb for collectors, is to make sure that you buy a Dali print on Aches paper where the watermark is entirely on the paper and away from an edge.

For John James Audubon's very large size "Birds of America" prints, the presence of a "J. Whatman" watermark is strong evidence that the print is original. No known reprints or later restrikes are on paper with that watermark.

Pablo Picasso sometimes used paper with his personal watermark



shaded watermark on a Malaysian paper bill

* * * *

Using black light to identify modern paper

A black light is effective in identifying many, though not all, modern paper stocks. This allows the collector and dealer to identify modern reprints and fakes of antique trading cards, posters, photographs, programs and other paper memorabilia. Many people buy a black light specifically for this purpose.

Starting in the late 1940s, manufacturers of many products began adding **optical brighteners** and other new chemicals to their products. Optical brighteners are invisible dyes that fluoresce brightly under ultraviolet light. They were used to make products

appear brighter in normal daylight, which contains some ultraviolet light. Optical brighteners were added to laundry detergent and clothes to help drown out stains and to give the often advertised 'whiter than white whites.' Optical brighteners were added to plastic toys to make them brighter and more colorful. Paper manufacturers joined the act as well, adding optical brighteners to many, though not all, of their white papers stocks.

A black light can identify many trading cards, posters, photos and other paper items that contain optical brighteners. In a dark room and under black light optical brighteners will usually fluoresce a very bright light blue or bright white. To find out what this looks like shine a recently made white trading card, snapshot or most types of today's printing paper under a black light. If paper stock fluoresces very bright as just described, it almost certainly was made after the mid 1940s. It is important to note that not all modern papers will fluoresce this way as optical brighteners are not added to all modern paper. For example, many modern wirephotos have no optical brighteners. This means that if a paper doesn't fluoresce brightly this does not mean it is necessarily old. However, with few exceptions, if a paper object fluoresces very brightly, it is modern.

**(4) CERAMICS : porcelain,
earthenware, stoneware, terra cotta**



Ceramics (cups, bowls plates, jugs, figures, etc) are divided into three major categories: **stoneware**, **earthenware** and **porcelain**. It is usually easy to make an identification, though there will always be some gray areas where it's hard to tell if something falls into one or the other category.

4a) Porcelain



Porcelain, which has that signature refined, smooth, thin, 'dainty tea cup' look, is the only of the three categories that is translucent.

This means if you hold up the item to the light you can see light come through. If you pass your fingers between the item and the light, you will see the shadow of your finger pass by. The bottom is often an unglazed white with a lightly roughish, but not coarse, feel.



Translucence of porcelain saucer held up to sunlight.



The translucence test sometimes doesn't work on porcelain figurines, as no single side is exposed.

*** 4b) Stoneware



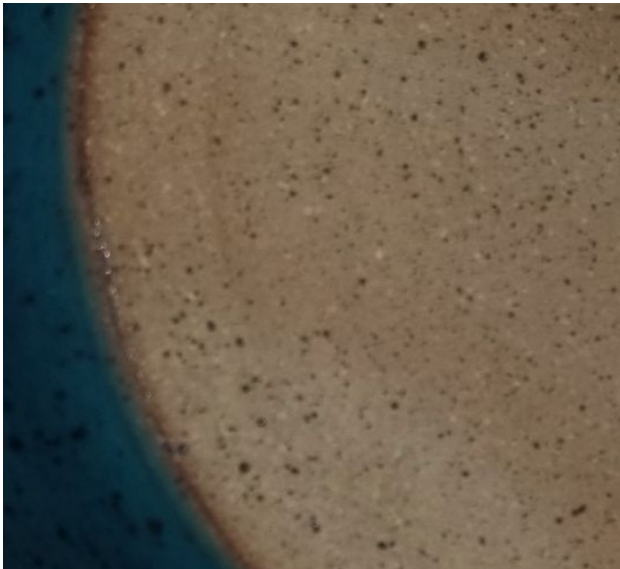
Stoneware is opaque, tends to be heavy and substantial. It can look more basic, handmade and primitive— such as that old time country folk art jug. Anywhere the object is unglazed the clay is darker, usually dark grey, but sometimes light brown, sometimes with specs in it, and has a rough texture as if it was made out of a chunk of clay in middle school pottery shop. Stoneware cups, bowls, plates and similar usually have unglazed bottoms where you can see the rough, dark material. Due to being cooked at a higher temperature, stoneware can hold water even when unglazed— thus the unglazed bottoms.



Heavy primitive stoneware mug



bottom of a stoneware figure/jug showing the dark, rough and unglazed bottom.



Bottom of stoneware bowl showing the rough grainy material

*** 4c: Earthenware

Earthenware, which is also opaque, is the most common form of ceramics. Most of your ‘department store’ dinner plates and coffee cups in your kitchen are earthenware. Unlike stoneware, earthenware is not waterproof when unglazed. This means earthenware is almost always glazed all over, including on the bottom. This is particularly true for a cup, bowl or jug that is intended to hold liquid. On an earthenware cup, plate or bowl the entire item will be glazed except for a thin white or off white rim at the bottom. That part is unglazed as that is where the item rested in the kiln. At this unglazed area, or any other glazed area such as a chip, the material is milky or chalky (unlike the coarse dark stoneware material).



Earthenware: most kitchen bowls, plates and coffee cups are earthenware.

Just remember that an earthenware cup, bowl or plate will be glazed on the bottom (except for the chalky rim), while heavy stoneware is unglazed on the bottom and has a darker, rough texture.



Coffee cup with standard unglazed white rim on bottom

**** Terra cotta (type of earthenware)**



common orange flower pot

Terra cotta is a type of earthenware that is common but looks distinctly different from most other earthenware.

Terra cotta is usually a distinct orangish, but sometimes brown/gray. Those orange, and sometimes greyish brown, flower pots are terra cotta. The orange water pots are unglazed, so the water can seep in and out. Not good for a cereal bowl or coffee cup intended to hold liquid, but what you want for plants. Some plant pots are glazed and colored on the sides for aesthetic purposes, but the bottoms and insides will be unglazed with a large hole.

Glazed and unglazed terra cotta is often used in art, including Chinese figurines. The glazed ones usually leave the bottoms

unglazed. If the terracotta on the figure is gray/brown it can sometimes be difficult to tell if its terra cotta or stoneware. Stoneware is usually heavier. If it's unglazed on the bottom and is a food bowl or cup for liquid it's stoneware. Only unglazed stoneware can hold liquid.



Standard flower pot bottom. Unglazed orange with hole



Terra cotta figurine with the face and hand left unglazed and orange.

Chapter 5: Early Plastics : celluloid, bakelite & catalin, casein, lucite



old plastic to toy cow

Plastics aren't just a commonplace thing of today. In the late 1800s and early 1900s plastics were used to make a plethora of products, from jewelry and toys to electrical fixtures and kitchenware parts. With many of today's antique collectors, certain early plastics are in vogue and sought after, in particular when in the form of eye-appealing items like art deco jewelry, advertising pins and old time radios.

The following looks at the most common early plastics: **celluloid, bakelite, catalin, casein and lucite**. With experience, you shouldn't have trouble distinguishing between these. As you will see, a common identifier is the distinct smell of a plastic under hot water or friction.

How to tell plastic from other materials?

Most people have a good feel for what plastic feels like, but glass and crystal are sometimes mistaken for plastic. This is particularly true if the item is small, like a button.

Plastic is warmer to the touch than glass, crystal and most gems.

Just put the object to your cheek to test. Plastic is usually much lighter. Glass items, like a glass wine glass, will have a distinct sound when clicked with the fingernail that plastic does not. Plastic often has a seam, but rubber and glass can too.

The hot needle test will often reveal the identity. A pin won't pierce glass or mineral, but can enter plastic and often gives a distinct plasticity smell. Rubber will give off a rubber smell. Wood will often give off a burnt wood smell.

****Early Plastics: Celluloid**

Celluloid is the trade name for a plastic that was widely used in the 1800s and early 1900s to make pins, fountain pens, buttons, toys, dolls and many other products. It was commonly used as an ivory substitute, to make cheaper versions of items with ivory such as toiletry boxes, billiard balls, handles and backings for hand mirrors, combs and brush handles. If you ever see the name 'French ivory' or 'Ivoryne,' that is faux-ivory celluloid. Though widely used in its day, drawbacks to celluloid were flammable, fragile and deteriorated with time. Due to the common decomposition, antique celluloid in top condition is prized today.

Identifying celluloid: Celluloid tends to be much thinner and lighter than other period plastics. You can often see right through the plastic when held it is held up to a bright light.

The easy and reliable test for celluloid is to place it under hot water for a few seconds, then smell it. If it smells like camphor it's probably celluloid.



Antique celluloid pin



antique celluloid brushes made to look like ivory

** Early Plastics Bakelite and catalin

Bakelite and catalin are trade names for closely related antique plastics that are popularly collected today in the form of old timey radios ('catalin radios'), colorful jewelry, toys and more.



Brightly colored old catalin radio

Bakelite and catalin are both made from phenol and formaldehyde, and are **phenol formaldehyde resins**. Because of this they have many of the same characteristics. However, the two were made in different ways so also have distinct differences.

Bakelite was made by from 1907-27. It used a filler of cloth, paper, cotton and even sometimes asbestos. This meant the plastic was heavy, strong, opaque and came in only dark colors. Bakelite

usually came in only black and dark brown, and was used usually used for 'utilitarian' purposes, including pipe fittings, coffee pot handles, and electrical outlets.



antique metal coffee pot with a dark brown bakelite handle



dark brown bakelite radio

When Bakelite's patent ran out in 1927, the process was picked up by the American Catalin Company which called their version of the plastic catalin. The American Catalin Company used the same phenol formaldehyde chemicals, but made the plastic in is a different way. In particular no fillers were used. This meant that, unlike the dark and dreary Bakelite, catalin was often translucent and made in a wide variety of bright colors and interesting designs,

including a marble of different colors. Catalin was used for more fun, decorative and collectible items, including jewelry, toys, trinkets, decorated boxes, brightly colored radios. Catalin tended to shrink with age, which explains the sometimes warped and shrunken frames for catalin radios. Catalin was made from 1928 to about World War II.

Collectors and dealers mixing up the names.

As the plastics are such closely related plastics, collectors and dealers often get the names mixed up, calling catalin bakelite, and bakelite catalin. **Most so called ‘bakelite jewelry’ on the market is actually catalin.** Some sellers on eBay and elsewhere play it safe and call it ‘bakelite catalin.’

Happily, both plastics are vintage (1907-WWII), so if you know its one of the two but aren’t sure which, you can be at least confident the item is old. You can even use the catch all ‘phenol formaldehyde resin’ to cover them both, though that might not sound as romantic at sale.



Multi-colored catalin toy

Identification of bakelite and catalin

First I’ll show the tests to used to identify phenol formaldehyde—meaning both bakelite and catalin. As they are both made of the same chemical-sh. Then, once something is identified as phenol formaldehyde, we’ll look at how to differentiate between the two.

Bakelite/catalin general appearance: Bakelite and catalin is heavy and clunky. It makes a distinct sound when two pieces are clinked against each other. Visually, there should be no seams or mold

marks. There is no pure white in color, as the whites formed a yellowish patina with time.

Bakelite/catalin hot water and rub test: Hold the plastic under hot water for perhaps 15 seconds, then smell it. If it smells strongly like medicinal chemicals, then it likely is bakelite/catalin. Though it doesn't work as well, you instead can rub the plastic with your fingers and sniff for the strong medicinal smell.

Lucite, a plastic that can resemble bakelite/catalin, has no smell under the hot water/rub test. 'French bakelite,' which is a mostly modern faux-bakelite, smells like burnt or sour milk.

Bakelite/catalin polish test: The common metal polisher called **simichrome** polish can help identify Bakelite/catalin. If you rub a q-tip with simichrome polish on bakelite or catalin, the polish on the q-tip will turn yellow. Simichrome polish is available at many hardware stores and online. The same test works with Dow Bathroom Cleaner or 409.

So, then, is it Bakelite or Catalin?

If you can determine an item is phenol formaldehyde, the next question is is bakelite or catalin. If you know the date of the item, then it's easy. Bakelite: 1907-1927. Catalin: 1928-1940s. Bakelite only comes in dark colors, usually black or dark brown. Catalin can come in a wide variety of color colors, including bright colors and marbling. Bakelite is opaque, while catalin is often translucent. If the item is brightly colored jewelry or similar items, it is more than probably catalin.

So called 'French Bakelite' is galalith, a plastic closely related to casein (described later). Under the hot water tests, French bakelite smells like milk. Lucite can closely resemble Bakelite and catalin, but is lighter in weight and has no smell under the hot water/friction smell test.

**** Early Plastics: Casein



many vintage plastic buttons are casein

Casein plastic was a popular plastic developed at the end of the 19th century and used through the 1900s. Casein is a powdered milk. For the plastic, the powder was mixed into a paste then hardened by putting it in formaldehyde.

Casein was originally made in Europe and sometimes called **galalith**, a name you still see from time to time. Casein was hard, could be polished and colored to imitate materials like ivory. Casein was used for jewelry and fountain pens, but is most commonly found in the form of knitting needles and buttons.

Casein is identified by putting it under hot water for a few seconds as it will smell like burnt milk.



Many knitting needles are casein

**** Early Plastics: Lucite

Lucite was a popular early form of plastic that is still used today. While transparent in its natural state, lucite can be dyed many possible colors, molded and imbedded with objects, so comes in a wide and sometimes wild variety of colors and looks. In vintage times, it was used to make everything from plastic toys to jewelry. Colorful versions of jewelry are often mistaken for catalin, which could also be made in many colors and textures.

Identifying antique plastic:

Lucite has a slick feel and is fairly light weight. It is lighter in weight than catalin.

If you put lucite under hot water, rub it vigorously or poke a hot pin into it it will have no smell. Catalin, bakelite and celluloid have chemical smells and casein smells like burnt milk.

If it's transparent or transparent with objects embedded in it (plastic pieces, flowers, coins, etc) it's lucite.

The following are examples of the various styles of lucite styles.



Clear Lucite bracelet. Lucite can also be opaque and in many colors.



The ever popular confetti lucite, with confetti or shavings embedded within the plastic.



transparent lucite with embedded plant leaves

Gutta percha

Gutta-percha is a natural, rubbery plastic, and from the mid nineteenth century until the 1930s it was moulded into many domestic and industrial products. It very closely resembles, and is often misidentified, as rubber. It is made from sap from Palaquium trees in Malaya, Sumatra and Bornea. Many gutta percha items have a mixture of latex and rubber.

Gutta percha is dark colored, but can be dark yellow, red, dark brown and black. It is lighter and glossier than rubber. If you rub it vigorously use the hot needle test, it will smell like rubber, but sweeter and milder. The ultimate test is to taste, as it tastes salty.



1800s Gutta purcha jewelry

Composition

Composite is not plastic but is included here as it closely resembles plastic and was often used in the old days for plastic-like things, especially toys and dolls. It was commonly used to make 1800s-early 1900s toys and dolls.

Composite was made of sawdust, glue and other materials like resin and flour. Composite is less fragile than many period plastics. Most composite dolls were made in the 1920s-40s.

Composition dolls are prone to crazing and have painted

surfaces that can peel. Hard plastic toys tend not to craze.

The hot needle test will produce the odor of burning lacquer or sealing wax because of the component used to hold it together. Many composition buttons have sparkles in them.

Chapter 6: FINE ART PAINTS

Fine art paints are identified by their style, age, paint thickness and other qualities. Antique paintings were usually on canvas, but can also be on wood ('panel paintings') and paper. Panel paintings were the common form of painting before canvas.

**** Oil paint**

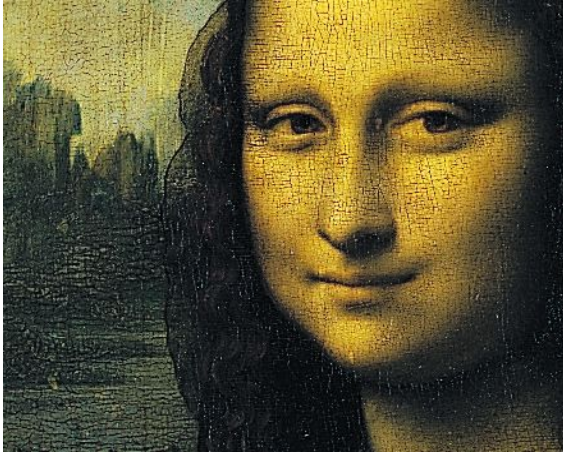


heavy brush strokes on an oil painting

Oil painting is the most famous form of fine art painting and the most common in antique days. It has been used for centuries and is still used by artists. The Mona Lisa, Whistler's Mother, Van Gogh's Starry Night and countless other famous paintings in museums are oil paintings. Oil paint is slow to dry and usually shows the brush strokes. The brush strokes are physically raised as with a relief

map. You can see and feel the brush strokes. Especially bold brush strokes are called *impasto*.

Oil paintings were usually varnished which can make them glossy. The varnish can darken, crackle and gather dust and grime over the decades.



Commonly found toning and 'alligator skin' cracks on an old oil painting.



Half the old varnish has been removed from this antique oil painting revealing the original tones.

Oil colors can be subtle, dark (if antique) and have a glowing, translucent quality. When restored, the varnish is stripped, new varnish is added that makes the painting seem bright and new again.

Acrylic paint is a synthetic plastic version of oil paint, and closely resembles oil paint. It was introduced around the mid 1900s. Due to its invention date, a painting identified as acrylic clearly cannot be from 1910 or 1880. Acrylic paintings closely resemble oil paintings, including the raised physical brush strokes and impasto. In fact they are often hard to tell apart.

Acrylic paintings tend to be more plastic looking, with more pallid colors. Oil paintings tend to be glossy, while acrylics often (not always) are matte.

Modern artists use both acrylic and oil.

Tempera (egg tempera)



egg tempera painting by Botticelli

Tempera, often called egg tempera, is an ancient type of paint and painting that pre-dated oil paint in popularity. The paint usually has

the color pigment mixed in egg yolk, thus the name egg tempera. Many ancient Egyptian and Western Medieval paintings were tempera, as are the paintings of Michelangelo and Botticelli. Tempera was the most popular form of painting until the 1500s, when it was replaced by oil paint. Some artists today paint in tempera. Twentieth century American Andrew Wyeth is the most famous modern egg tempera painter.

Due to the distinct paint qualities, tempera has a look and feel much different to oil and acrylic painting. Tempera paint is thin in consistency and dries very fast. This means the artist painstakingly paints in careful, thin brush strokes, brush stroke by brush stroke, and slowly adds up the paint lines to create the overall detail. When you look closely at a tempera, the graphics are usually made up of thin lines, often overlapping and cross hatching to build up color and detail. These lines mean the painting often closely resembles a fine color pencil drawing.

There are no big, bold, thick brush strokes or heavy globs of color as can appear on oil and acrylic paintings. Tempera paintings usually have a matte finish.

Tempera paintings tend to have overall brighter colors and with less contrast in the details. Notice the lack of contrast in the face of the Botticelli painting shown here. The shadows of her skin are lighter and more gradual than the stark dark to light that often appears in oil paintings. The lighter contrast is because the artist created the details and colors by carefully building them up thin overlapping line by thin overlapping line.



Tempera detail showing lines of color

Watercolors



Watercolor is a thin, watery, translucent paint that has a signature 'wash' look. As the paint is translucent, you can see through it to the paper behind and can often see pencil sketches and outlines behind. The pencil sketches and outline often give away a painting as a watercolor. Under magnification, you can see how the ink is applied in different amounts to the paper. Unlike oil or acrylic paint, there are no physically raised brush strokes you can see and feel. Water can be added to acrylic paint to have a similar watercolor wash appearance.

The only non-painting process that can very closely mimic watercolor is a form of handmade lithography, sometimes call *wash lithography*. At eye level and even under magnification, this lithography looks like watercolor paint. Luckily, it is an 'artistic' form of lithography, often used on 19th century and early 20th century items so has value. One way to tell the difference between the watercolor and lithograph, is to apply a wet q-tip to a part of the item. The water soluble paint will come off on the cue tip but the non-water soluble lithography ink won't. If it has the background sketch or outline, then it is watercolor. Clearly, this is usually not a desirable thing to do to a painting, and some will never do it.

Gouache

Gouache is opaque watercolor. Chalk is added to watercolor to make it opaque. As with watercolor, it is often on paper and there are no to very slight raised brush strokes. Gouache has a different look and style to watercolor. Gouache is somethings used with watercolor in the same painting, so there will be areas of opaque and areas of translucent ink.

Pastel

Pastel, including oil sticks, is a painting medium where the artists uses sticks of pure powdered pigment to draw, instead of brushing paint on paper or canvas. A pastel painting can generally resemble oil and acrylic paintings with raised brush strokes, but has a distinct drawn crayon look. It can resemble a bit a thick crayon drawing.



Edgar Degas pastel showing the drawn chalk/crayon quality.



Detail of a pastel sketch showing the crayon-like drawing details

Encaustic painting

Encaustic painting is an ancient wax-based painting technique that has been revived in recent years.

Using hot bees wax as the material to hold the color pigments, an encaustic painting is easy to identify at a museum or gallery because it has a distinct waxy appearance. It usually has bold physically raised brush strokes. It was used by the ancient Greeks and Egyptians, with the picture here showing an ancient Greek

encaustic painting. It was rarely used for hundreds of years after due to the universal popularity of oil paints. However, the technique was revived in the 20th century and you can likely find a local beginner's class on how to make your own encaustic paintings. After viewing encaustic paintings in person, encaustic paintings are easily identified by their distinct waxy appearance and often waxy smell.



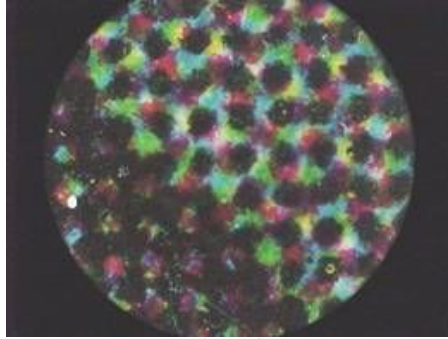
detail of ancient Egyptian encaustic painting

Chapter 7 : Identifying reproduction paintings

Many paintings have been reproduced. Reproductions range from the blatantly obvious to the more deceptive. I assume I don't have to explain to you that the Mona Lisa on your umbrella isn't the original. However, reproductions can be more realistic, can be on canvas, framed and even with fake brush strokes. A number of well known artists have had their paintings officially reproduced. Leroy Neiman, Norman Rockwell Salvador Dali and Thomas Kincaid come to mind.

Identifying a reproduction is usually easy, though there might a few bit trickier instances. The following are a few things to look for:

** A fine color dot matrix pattern under high magnification. A photomechanical or digital reproduction of a painting or photograph will translate the original into a fine pattern of different tiny color dots. With a strong magnifying glass or microscope examine a magazine photo or picture postcard to see what this dot pattern looks like. A painting is made with brush strokes of solid paint and will not have this maze of dots throughout the image. If you've identified this dot pattern you can stop. It's not a painting. It's a reproduction.



Dot pattern under microscope

** With an oil or acrylic painting, there will be physically raised brush strokes that you can see and feel. As on a relief map. If you run your finger across the original Mona Lisa or your neighbor's acrylic landscape, you will feel the brush strokes.

With watercolor and gouache (opaque watercolor) paintings there will be no such raised brush strokes, the surface can feel smooth and the painting can be on regular paper. This makes reproductions of these paintings more deceptive before you take a close look. Happily, that tiny color dots pattern under magnification will always give it away a reproduction.

In some professional reproductions, clear paint is added over the top of the print to simulate raised brush strokes. However, you should still be able to see the tiny dots indicating it is a reproduction.

** If a painting is supposed to be an acrylic or oil painting or anything with heavy paint, turn the painting around, put it in front of a light source and see how the image looks from behind. Oil and acrylic paint is an opaque, often thick substance and will block light (of course, then, that's what opaque means). With a real oil or acrylic painting and its heavy paint, some parts of the image you can see while others will be completely blocked out by the paint. With a lithograph or digital print on canvas or paper, you should be able to see the whole graphics fine— as there is no paint to block the light.

** A black light can identify many modern reproductions of old paintings, or otherwise modern paintings, as many of the modern

materials fluoresce brightly under black light. In particular, the modern paper and canvas can fluoresce brightly.

Chapter 8 : Glass

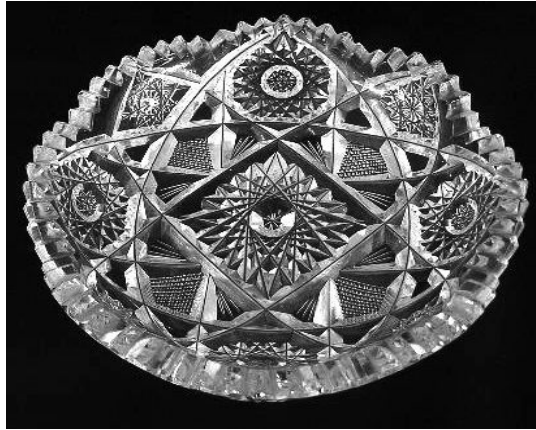
Glass is labeled and catalogued in different ways, including by its formula or chemical recipe, how the glass formed (cut, molded, blown, etc), style and genre. Some types can overlap. For example, cut glass can be lead glass and it can be sodium glass. The following are standard types of glass, presented in assorted ordered, defined by the formula, method and genre.

Pressed glass. Most glass items are pressed into a mold. This involves pouring the molten glass into a mold. Most pressed glass has a seam, which is a thin line along an edge, though it can be sanded off. The mold can produce various designs, patterns and even a pattern mimicking hand cut glass.



You can faintly see the vertical seam down the middle of the edge of this glass jar.

Cut glass is is glass that has the outer design cut by hand or by machine. This is considered fancy and more expensive glass. Cut lead glass, containing lead, is called **lead crystal** or **crystal** and is considered high end glassware. It is used to make fancy bowls, wine glasses and crystal chandeliers. Cut glass will not have a seam, as it is usually hidden or never had one in the first place. The cut of the outside will be sharper than pressed glass made to resemble cut glass. Cut lead glass, or lead crystal, is very clear and heavy. Vintage American cut glass is called Brilliant Cut or American Brilliant cut.

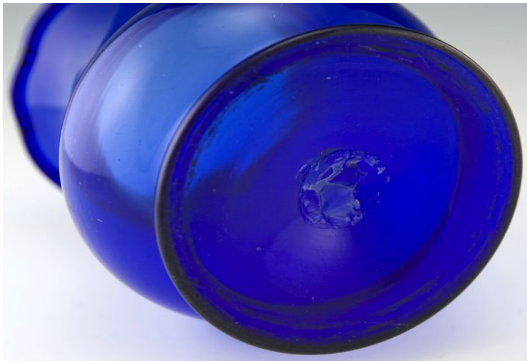


Cut glass bowl

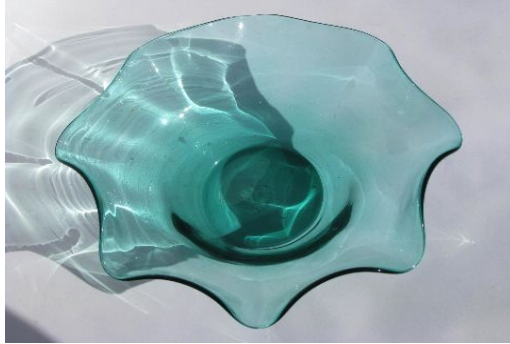
Blown glass is an ancient form of glass making that is still used in the fine arts. The molten glass is formed by literally blowing it through a tube. The resulting glass item will often have a blown look and glass varying in thickness. It will not have a seam. It often has a pontil or rod mark, where the pipe was attached. It will appear as a little hole or bump, though is sometimes smoothed over. Blown glass can have tiny bubbles or shifts, and colors that mix together. Some may be assembled from multiple parts into one piece.



Blown glass



pontil mark on the bottom of blue (cobalt) blown glass



hand blown dish

Soda-lime. Most glass is soda-like glass. Soda-lime is the chemical makeup of the glass, and the glass is made up of sodium carbonate and lime. It's naturally clear, though not as clear as lead glass, and fairly hard. It can be made into made shapes and designs, from soda pop bottles and drinking glasses to fancy cut glass decanters. Soda lime can be pressed, blown or cut.

Enamel is a transparent glass that is applied in a thin layer over metals, usually metal. It can be colored, painted and was often used on jewelry, ornaments, clocks and for small portrait paintings.



Gold ring with pearls and enamel portrait

Lead glass. Lead clear glass is made with lead oxide, typically 10% or less in content. It is known for its sparkly brilliance and is

used for fine glass, including expensive wine glasses, lead crystal (cut lead glass), crystal chandeliers. Cut lead glass, also known as *lead crystal or crystal*, is used to make rhinestones and fake diamonds. As it blocks more ultraviolet, infrared and other lights, it is often used for science and medical labs. Lead glass is heavier than soda-lime glass. Lead glass can be pressed, cut or blown.

Borosilicate glass (Pyrex). Commonly known by the brand name **Pyrex**, borosilicate glass is a specialty glass used to make heat resistant items, including cooking ware, oven and microwave windows. It is made from the same formula as soda-lime glass, except is tempered through a second cooking. Looking at the glass itself, it is difficult to tell the difference between Pyrex and soda-like glasses, so you have to look how its used. Also the name 'Pyrex' on the oven dish will identify. Old Pyrex cooking ware is popularly collected.



Pyrex glass clearly labeled



vintage Pyrex

Uranium glass (subcategories: vaseline glass, custard glass, jadeite glass). Uranium glass is a highly collectible antique glass that was made with uranium salts. Uranium salts are naturally a bright yellow and they were used to color the glass. Uranium glass ranges from yellow to green, with the green versions having had additional coloring chemicals added. Uranium glass is transparent to opaque and comes in many forms and styles, including plates, glasses, cups and saucers, salt and pepper shakers, candlestick holders and figurines.





Uranium glass fluorescing brightly under black light

As it contains uranium, the glass is radioactive. Happily, the uranium salts added and radiation given off is so low it's considered harmless.

Uranium glass is identified by its general appearance and color (yellow to green) and because the uranium salts makes it fluoresce a bright green under black light. Some advanced collectors and dealers even use a geiger counter to measure the radiation, but for most people a black light is more than enough.

There are sub categories for uranium glass. The problem is different people use the names differently, even sometimes applying them to non-uranium glass that has same superficial appearance. Some areas of the world use the terms differently. In short, these sub-names can be taken with a grain of salt. I take them that way.

The following are common subcategories.

Vaseline glass is a nickname given to uranium glass that is transparent and with a yellow or yellow-green tinge. It got its nickname as some thought it resembled vaseline. However, some call any kind of uranium glass vaseline glass, some say vaseline glass can only be yellow and some call any kind of transparent yellow glass vaseline glass even if there is no uranium salt content. Some collectors and dealers label that syrup pitcher vaseline glass, while others would not because it's not yellow. The latter would call it simply uranium glass.

Custard glass is a uranium glass that is an opaque or near opaque yellow. Though some some call any opaque yellow glass custard glass, even if it contains no uranium.



Custard glass

Jadeite glass is uranium glass that is opaque or semi opaque pale green. However, some call any opaque or semi opaque pale green glass jadeite glass even when it has no uranium content.

With all the competing subcategory definitions, just remember that a black light will tell you if something has uranium salts in it and is genuine uranium glass.



Jadeite glass

Cobalt glass is a popularly collected glass that uses cobalt salts to create a deep blue color. Cobalt glass has been made for centuries and centuries.



Cobalt glass is easily identified by its distinctly blue color

Cranberry glass, sometimes called **Gold Ruby** and **Rubino Oro**, is a cranberry red glass made by adding gold oxide to molten glass. The glass is expensive and used for high end items.



Reddish cranberry glass

Milk glass is an old time opaque to translucent glass that is usually milky white but can be made to be milky blue, pink, brown and blue. Whatever the color, it has a distinct milky look. It is used to make glasses, cups and other glassware. It was also used to make the scarce antique opalotype photographs, that had the photographic image on a pane of milk glass.



milk glass. It can come in milky shades of of other colors



Blue milk glass



1800s opalotype photograph on white milk glass

Depression glass is clear or colored translucent glassware that was distributed cheaply and often free around the time of the U.S. Depression.

Most of this glassware was made in the American Midwest. More than twenty manufacturers made more than 100 patterns. Common colors are clear (crystal), pink, pale blue, green, and amber.

Although of marginal quality, Depression glass has been highly collectible. Due to its popularity as a collectible, Depression glass is becoming more scarce on the open market. Some manufacturers continued to make popular patterns after World War II, or introduced similar patterns, which are also collectible. Popular and expensive patterns and pieces have been reproduced, and reproductions are still being made.

Goldstone is a glass with metal shavings inside. It is sometimes mistaken for stone or gem and can come in many different colors. It can be molded into little figurines and comes in many possible colors, blue to yellow.



Goldstone with its sparkly metal shavings



goldstone

Chapter 9: Black Light and art glass

Black light is a useful tool in judging the identity and age of art glass vases, figurines and more. Different types and ages of glass can fluoresce different colors, and the color of fluorescence can be helpful in identification. As there are variations and exceptions, the fluorescent colors should be used only as a general guide. The expert collector and dealer also look at the color, physical nature, style, visible stamps, provenance, etc.

The following are a few examples of glass and fluoresce:

Lalique art glass. The Frenchman Rene Lalique produced some of the finest glassware. Lalique art glass from before 1945 typically fluoresces yellow and sometimes peach, but different colors after.

Marbles. Many 1800s marbles fluoresce, some bright green and yellow. Many believe post WWII marbles do not fluoresce

Modern reproductions of Burmese Art Glass. Old Burmese art glass tends to fluoresces a bright yellow, while modern reproductions usually do not.

Dating American colorless pressed glass. American colorless pressed glass made from before 1925-30 fluoresces brightly. Modern reproductions do not.

Chapter 10: Non-Precious Metals

Metals are identified by examining numerous qualities, including appearance (color, shine, signs of aging), weight, magnification (drawn to magnet or not), use (your bicycle spokes won't be made out of sterling silver) and hardness. Metal is often easy to identify. It can be more difficult when the metal is a small piece, such as when an embedded part of a larger ornate object.

What can further make things harder is there are alloys, meaning mixtures of different and varying percentage of metals. Steel, for example, comes in varying percentages of different metals giving it different tone, hardness and magneticism. Gold is almost never 100% gold . . . Someone might call something a 'copper alloy' meaning the metal is copper metal and a smaller percentage of something else. Common alloys names include bronze, steel and brass.

For the purposes of collectors, it's rarely important to determine the exact percentages of non-precious metal but determine a general label. Calling something an aluminum alloy or an iron alloy is usually good enough. Collectors often just want a good label. Now, if it's silver or gold, then details are more important. Precious metals (silver, gold and platinum) are covered in an other chapter.

Magnetism

Some metals are attracted to a magnet and some are not. The magnet is a good aid, though not a definitive test, in identifying metals. Metals are usually magnetic because they contain iron, though nickel is magnetic despite having no iron.

Magnetic metals include iron, nickel, cobalt and most of their alloys. Some forms of steel are magnetic, while others are not.

Non magnetic metals include aluminum, copper, lead, tin, titanium and zinc, and alloys such as brass and bronze. Precious metals such as gold, silver and platinum are also not magnetic.

Mohs scale of hardness. The mohs scale of hardness is helpful in identifying metals, and this is a simple test to do. Obviously, you want to take care not to scratch valuable antiques. It's best to do the hardness test on an out sight place, like the bottom.

The following looks at the most common metals in alphabetic order.

Aluminum is fairly easy to identify as it is a silvery white color and is very light and bendable. It does not tarnish or rust so always remains its silver white color. It is commonly and widely used, but is not strong. It's been used on toys, pins and many inexpensive items. It's mohs hardness is 2.5-3 and it is not magnetic.

Brass is cheap and a yellowish brown color. It is sometimes mistaken for gold, but with experience you can visually tell them apart. Brass is much lighter in weight than gold. Brass has a dull ring when struck, while bronze has clear bell-like ring. Brass has a Mohs of 3-4.



brass instrument

Bronze usually is an alloy of copper and tin, but sometimes has a little lead in it. Bronze has a dark coppery color and gets a green oxide over a period of time. Bronze vibrates like a bell when hit. It's Mohs is 3.

Chromium is easy to identify because it is a very, very shiny, a bright silvery white color and rarely rusts or corrodes. Things are rarely made of pure chromium but lots of things are coated with it to make it shiny and not rust. Chromium's mohs is 8.5 which is very hard.



chrome car bumper

Copper is made into many alloys including brass and bronze. Copper has a light red tinge in color and gets a green oxide over time. Copper is not magnetic. As with brass, copper can vibrate like a bell when hit. It has a mohs of 2-1/2 to 3.



copper pennies, some with green rust

Iron is a dull grey when unpolished and can rust to a reddish color. It is also used in a lot of alloys. Iron is heavy, and has a mohs of 6-7.

Lead is a dull grey when unpolished but shinier when polished. Lead is not magnetic and is extremely heavy, but not hard. It has a mohs of 4.

Magnesium has a grey color and develops an oxide that dulls the color. Magnesium is extremely flammable in powder or thin strips. Magnesium burns very brightly and hot and is very hard to put out, even with water. Magnesium can also burn without oxygen. Magnesium is very light. It is very light and soft with a Mohs of 2, meaning it can be scratched by glass.

Steel is used for wide variety of reasons and comes in a variety of forms. It ranges in hardness from about 5 to 8. Some is magnetic and some is not. Hallmarks often identify it as steel. Old steel kitchen utensils are sometimes misidentified as silver.

Nickel is shiny silver when polished and is darker unpolished. Nickel is one of the few metals that is not an iron alloy that is magnetic. Nickel has a mohs of 4. Today's US nickel coins are not made out of nickel.

Pewter is a composite that has a distinct, dull silvery color. As it contains lead, you can write with it on paper as with a pencil. It is soft and heavy.

Tin is silvery grey in color when polished and darker when unpolished. Tin has a Mohs 1.4

Titanium is a silvery grey metal when unpolished and darker when unpolished. Titanium Mohs 6

Zinc is naturally dull grey and is hard to polish. Zinc naturally rusts or galvanizes. Because of its low cost zinc is the main metal in used in pennies. Zinc's Mohs hardness 2.5 which is soft.

Chapter 11 : Precious Metals: gold, silver and platinum

As precious metals can have high monetary value, this is an area where getting an educated second opinion is wise. A jeweler or avid collector can give good opinion.

There are both scientific tests and more informal on-the-spot ways of identifying gold, silver and platinum. The first part of this chapter will look at the informal methods you might use if you're in an antique store or estate sale. The second part of the chapter will show the acids tests that are used to both identify and determine the purity of these metals.

* * * *

Informal quick tips for identifying gold, silver and platinum

* Look at different metals to get an eye for the look. Though somewhat similar in color, gold looks different than brass and copper. Silver looks different than pewter and aluminum. An experienced eye is helpful.

Gold

* Gold is a shiny yellow color and does not tarnish. Even old gold pieces are shiny. Gold is very soft and heavy.

* Pure gold cannot scratch glass. Some imitation golds can and some can't.

* Gold is not attracted to a magnet. Other metals are also not magnetic so this is not a definitive test.

* Gold often has its identity and carat stamped on the piece, though this can be faked and one should not rely upon that alone.

* Many people do the simple test of running gold along unglazed

porcelain tile. If the resulting mark is yellowish-gold the piece is real. If the mark is black, the piece is not real.

Various Colors of Gold

There are various factors that determine the color of the gold. One is the alloy used to combine with gold. *The color does not effect the caret, with each of the colors can come in different purities.*

Yellow Gold. It is the natural color of gold.



White Gold Fine gold is combined with a big percentage of silver, together with the nickel and zinc to achieve a white color.



Pink or Rose Gold Has a rose tinge, and is made up of gold combined with a percentage of copper, zinc and silver. There is also a brighter version called **bright red gold**.



Pink or rose gold

Deep Green. Has copper, zinc and silver in it.

Silver

- * Silver is silvery colored. It looks slightly different than steel, though steel kitchen forks and spoons are often mistaken for silver.
- * Silver is not magnetic. Some steel is magnetic and some is not.
- * Silver has a naturally dull finish. Only silver-plated pieces are shiny.
- * Silver will be warmer to the touch than stainless steel.
- * Old and new silver often has a hallmark explicitly or symbolically identifying it as silver. As hallmarks can be faked, it is best not to rely on the hallmark alone. Hallmarks can be sometimes be missing due to wear or that the item was repaired.
- * Rub a clean, white polishing cloth over a silver piece. Real silver and silver plate will turn the cloth black.
- * Silver can tarnish, even turning blackish or dark brown.

Platinum

- * Platinum will never tarnish or wear out, no matter how old.
- * Platinum is the heaviest precious metal. Place a platinum piece in one hand and a gold piece in the other. The platinum piece should be noticeably heavier than the gold piece.
- * Platinum is not attracted to a magnet. Some but not all steel is.
- * Platinum will often have an hallmark identifying that it is platinum and its purity. Hallmarks are often in symbols so some

research might have to be done.

*** **Precious metals testing kit**

There is a simple kit for testing precious metals using acids. These kits are inexpensive and can be bought at amazon, ebay and other places. The kit includes the testing acids in little bottles, a testing stone and instructions. Be careful with the acids as they can stain or worse your hands, and keep it away from your eyes. But you're only using a small drop or two at a time so being safe isn't hard.



A standard precious metals kit with little acid bottles and 'stone'

Testing Gold:

There are clearly labeled 9kt, 14kt, 18kt and 22k testing acids in the kit. The process is simple, scratch or rub the metal in question onto the testing stone so you can see a metal streak. Try to do it in a spot on the jewelry that won't be noticeable. Place about half a drop of the closest acid to the karat you estimate the metal to be.

If the acid dissolves the metal it's less then the karats on the bottle and you should try again with lower level acid.

If it dissolves the metal slowly, it's possible you would have a bit less then the karat of the acid in the bottle.

If the metal stays it's most likely the karat or higher of the acid in the bottle.

Platinum

In the kit will be a bottle clearly marked for platinum. The metal scratched off on the testing plate should not dissolve under the platinum acid. Some less pure platinum may dissolve a bit. Platinum has a Mohs hardness of about 4-4.5.

Silver

In the kit are bottles of acid clearly labelled for the different carats of silver. Rub metal onto the stone, apply a nice drop and wait for a reaction.

0.999 pure silver will turn bright red color

0.925 sterling silver will turn dark red color

0.800 silver will turn brown color

0.500 silver will turn green

Precious Metal Hallmarks

Hallmarks is such a large area that this section only touches on it. Web page links to further resources are listed at the end.

A hallmark is an official mark or series of stamps on precious metals. In modern times, hallmarks are usually legally required to appear on precious metal items. Authentic hallmarks and other stamps help identify the metal, purity, era and origin of the item. As hallmarks can be faked and sometimes missing (often due to wear or repair), a hallmark shouldn't be use as the sole identifier of the metal.

Hallmarks are often in obscure symbols and have varied from country to country and time period to time period. It's a foreign language, and identifying specific hallmarks can take much time and effort.

Useful link on Hallmarks:

<http://www.gold-traders.co.uk/hallmarks/>

<http://en.wikipedia.org/wiki/Hallmark>

http://en.wikipedia.org/wiki/Silver_hallmarks

<http://www.sterlingflatwarefashions.com/>

<http://www.925-1000.com/>

Chapter 12) Wood

Even experienced wood experts say that identifying the type of wood is difficult and involves educated guessing. There are a number of reasons for this difficulty. One is trees are generally categorized by external qualities such as shape, flowers and leaves, rather than by the inner wood. This means different woods can be similar in grain and color. Further, there can be wide variations within a species of wood, including depending on age and geography. When wood is cut, varnished, shaped and/or painted, it can be difficult to impossible to identify. There is also 'unwhole' wood, meaning wood pieces that are made up of different kinds of wood and even non-wood wood. This includes veneered wood and particle board, laminated, painted and printed wood, and plastic and other material made to look like wood.

When looking at wood, the first question in wood identification: Is it wood?

It may seem that the answer to this question will more often than not be obvious, and it usually is. The look, feel and, of course, smell often gives away real wood. However, if the item is small, say a button, carved/polished/sanded or part of an intricate and ornate design involving other material, identification may not be so easy.

As mentioned, a common test is the smell. Wood smells like, well, wood. However, the smell can be masked if varnished or painted.

Another test often done on small items is the hot needle test, which will easily tell the difference between wood and say

plastics. Plastic is sometimes molded to resemble wood, especially for things like old buttons. Press a hot needle into the piece. If it's wood, it will smell like burned wood. Plastic will not. This test is destructive, so you should be prudent and careful in its use.

For many collectors of buttons or toys, identifying that the item is wood is enough. An antique button collector may just want to know that it wood versus plastic or glass, and may have no great desire to know if its cedar, oak or ash. Obviously for furniture collectors, the type of wood can be more important and influence the value. The latter type of identification is beyond this small document.

Is it a solid piece of wood?

Many wood pieces are not a solid, single piece of wood, but pieces of wood or wood with non-wood. This includes veneer, laminated wood, painted and printed wood, plywood and particle board.

A good test to see whether or not a piece is whole wood is to check the edge of the wood to see if the grain wraps and matches the front as natural wood. Also check the front and the back of the wood to see if the grain pattern matches.

Plywood, veneered wood and particle board are obvious if you can examine all sides of the wood.



Particle board, invented in 1950, is made up of bits of wood and glue mashed together. In person, it is clearly not a whole, single piece of wood.



edge of particle board

Veneered wood. Veneer is a thin surface layer of higher quality wood glued to the surface of inferior wood. The edge of the wood will show the different wood and grain. If you see a large panel that has a repeating grain pattern, it may be a veneer.

Veneer is sometimes plastic made to resemble wood. This may clearly look like plastic. The hot pin test will give off the smell of wood.

Veneer is usually easy to identify.



Veneer wood, showing how the edge is different color

Reference, further reading:
<http://www.wood-database.com>

Chapter 13: Stone (Marble, alabaster, etc)

The following shows several common types of stone used in carvings, buildings and more.

**** Marble



Marble is a famous and expensive stone used for statues, ancient buildings and more. It is limestone that was heated longer and transformed in the earth's crust. It is often mistaken for granite, and visa versa, as the two have the same general look, uses, weight and are used for similar purposes. Luckily, they have several distinct qualities that help tell them apart.

Polished marble is smooth and silky with a highly reflective surface. You can often see your face reflected. If the polished surface has roughness or bumps, it is probably not marble.

Marble is at least two colors or tones and has a distinct pattern. A grain that runs through it, made up of lines and waves that create a disorganized pattern. Some of the lines may smudge and swirl. If the marble has a speckled or crystal-like markings, then it is more likely to be granite stone. The colors in marble include pink, black,

white, greenish, red and cream. The colors are soft shades, rather than bright.

Marble is very heavy, but relatively soft with a Mohs scale hardness of 3-4. It can be cut by a steel knife. Granite is much harder. If you cannot cut it with a knife, it is probably granite. Pouring on vinegar will make a bubbly fizz, while granite will be unaffected. The bubbles can be very small so use your magnifying glass to see.

Splash water on the material surface . Marble does not absorb water and water will pool.

*** *Granite



Granite is heavy and resembles marble, is but much harder. It is 7 on the Mohs hardness scale and, unlike marble, cannot be scratched by a steel knife. Unlike marble, granite doesn't react to vinegar, lemon juice or other acids. Granite generally has a more sparkly, granular pattern, as opposed to the fluid lines of marble.

*****Alabaster**



Alabaster is famous as a milky white mineral that can be translucent if carved thin enough. In fact, alabaster was used as church windows centuries ago.

There are two types of alabaster. One is gypsum, which is used today. The other is calcite, which was used in ancient times including by the Ancient Egyptians.

The two kinds are distinguished from each other due to the difference in hardness. The gypsum kind has a Mohs hardness rating of 1.5-2 and can be scratched with a fingernail. The calcite kind has a Mohs rating of 3. It can't be scratched with a fingernail but can be scratched by a knife.

Hydrochloric acid makes the calcite alabaster fizz and bubble, but does not effect gypsum alabaster.

*****Sandstone**



Sandstone is sand turned to rock. It was formed when grains of sand become cemented together over many years. Sandstone is opaque, with a dull surface. It is usually tan or yellowish, though can be found pink to dark red, and even sometimes blue and green. Sandstone is identified by distinct fluid, wavy patterns from how the sand lawyered and was effected by water deposits Horizontal lines through the stone, indicating the layers shows it is sandstone not limestone. Limestone is uniform in color and tone.

The Mohs hardness varies with sandstone but is often around 7. If you break a part off with a hammer it will crumble with lots of sand. Limestone doesn't crumble.

Vinegar and hydrochloric acid makes limestone fizzle and pop as it dissolves. Sandstone would be unaffected.

***** Limestone**

Limestone is is often mistaken for sandstone, but, unlike sandstone, is a solid color and much softer, with a Mohs hardness of 3. It can be cut with a knife. Vinegar and hydrochloric acid makes limestone fizzle and pop as it dissolves. Sandstone is unaffected.

*** Plaster



Plaster is a cement-like substance that is used in buildings, on walls, for statues and figurines. It has a molded rather than carved or sanded look and you can often see where and how it was spackled on. It often crumbles if rubbed hard.

Chapter 14 : Gems

Gems is an area beyond a beginner's guide such as this, and this chapter just touches on it. Gems is a vast and complex area of identification, requiring experience and scientific equipment. There are hundreds of different kinds, plus synthetic and simulant versions. Further complicating it, gems are sometimes altered and recolored.

Especially when the gem is valuable and/or adds greatly to the value to the object, it is important to buy from a reputable and knowledgeable gem seller, and/or get a second opinion from from a gemnologist, jewelry or other expert.

This chapter gives an overview of how gems are identified, and qualities that are looked for. It is followed by links for further information, and a look at how to identify several common gems.

Natural, simulant and synthetic gems.

Natural gems are the gems made by nature. Simulant gems are look-alike or fake gems made from other material. A simulant ruby might be colored glass or an inexpensive red crystal. Synthetic gems are real gems, but made by humans in a laboratory. A synthetic diamond has the same chemical content and crystal structure. As you might expect, synthetic gems are often mistaken by non-experts to be the real thing. Both a simulant and synthetic gem is worth substantially less than the equivalent real thing.

Synthetic gems good enough for jewelry are a recent phenomenon, from the mid to late 20th century. If you can verify the family heirloom is unaltered and from the 1800s, the gems should be natural.

Gems are almost always imperfect. A perfect diamond, with no fissures or inclusions, is synthetic or simulant. A gem with bubbles in it is glass.

The following are some qualities and aspects people look at to identify gems.

* Overall look. Rubies are red crystals and diamonds, well, look like diamonds. This is a starter but superficial test, as fakes and substitutes often resemble the real thing. A diamond-looking stone may turn out to be a cheap crystal or glass.

* Hardness. Diamonds are the hardest natural substances and Rubies and Sapphires are the second hardest. These stones should scratch most everything else. One should be careful with this test, as some gems are treated and recolored and the mohs test can scratch the surface film.

* Price tag. Use common sense. No one's going to sell you a natural diamond ring or ruby pendant for 1/4th the price.

* Streak. By rubbing a gem across an unglazed ceramic plate, you create a streak. The color of the streak helps identify the gem. There are online streak charts. Clearly, you must be prudent when rubbing and if you chose to rub a gem.

* Shape. Gem stones have different crystal structures which give it a different form and shape.

There are advanced scientific tests using scientific equipment. These are used to test refractive index (how light changes even sometimes), specific gravity, light dispersion (if and how the light spreads or splits) and color changes. The measurements from these help identify gems and fakes, but it takes much experience and cost to do them. This is something an potential collector may wish to look into.

There are electronic gem testers, that are not used by experts, but are of some use to average collectors. They usually test the thermal qualities of the stone and give the collector an group of possibilities of what the stone is. The collector then has to look at other qualities to single out which is the stone. It is good at

identifying simulants like glass.

Further reading;

An article on diamond and gem grading companies, including their list of reputable companies.

<http://guide.diamondpriceguru.com/diamond-and-ring-basics/certified-diamonds/gia-ags-egl-and-other-diamond-grading-certificates/>

A nice and brief listing and illustration of gems

<http://www.hiddenitegems.com/gem-id.html>

Scientific identification articles and guides

<http://www.gemsociety.org/info/info.htm>

The following is a look as a few assorted gems.

Amber



Amber, or fossilized tree resin, is a popular and valuable gem often used in jewelry and often displayed on its own. There is, however, fake amber and other substances that can be mistaken for amber. Amber colored plastics and glass are commonly used to make fake amber. There is also the natural substance called copal that is young amber. Copal is very old, but not fossilized yet and is sometimes passed off as genuine amber.

The following are some quick tips which, in combination, help tell the difference between amber and common imitations. These

tests are for bare amber. If amber has metal added, like a clasp or a ring, it can effect the buoyancy and static electricity tests.

* Amber is warm when you touch it. While plastic is also warm, glass, crystal and gemstones are usually cold. Glass and stones are also heavier

* Static electricity test. When rubbed on cloth or even your pants leg, amber becomes electrostatically charged and will attract lint/dust particles and tiny pieces of paper.

* Solvent test. The surfaces of copal and plastics deteriorate when a drop or two of solvent is put on it, but amber is not effected. Plastics are affected by ethyl alcohol and acetone (fingernail polish remover). A few drops of acetone or alcohol put on surface will reveal if it holds up to the solvent. If the surface becomes tacky or dissolves, it's not amber.

* Buoyancy in salty water. Amber will float in seawater. Dissolve about 3 tablespoons of salt into per cup of water to test this out. Amber should float and many imitations will sink.

* Fluorescence under black light. Black light makes amber fluoresce, or glow in the dark. Amber can fluoresce different colors, including pink, yellow and green.

Jade

To the Ancient Chinese, jade was more valuable than gold and called the stone of heaven. They considered jade to have special powers and symbolic meaning.

Though commonly thought of as green, jade can be found in different colors including white and red, and can be transparent to opaque. Jade is one of two minerals: nephrite and jadeite. Nephrite is the jade the Chinese used, is more common and a touch softer than jadeite. Jadeite is more valuable.

The best way to determine if an item advertised as genuine jade is genuine jade is to take it to a knowledgeable gemologist or geologist. However, the following are some simple tips that will help separate the real from crystal, glass and other faked jade.

** Jade is cold to the touch. Hold it to your face or in your hand. It's noticeably colder than glass. Plastic is typically warm.

- ** Jade is dense and heavy. It has heft in your hand.
- ** If there are air bubbles in the stone, it is not jade but glass.
- ** Jade can't be scratched by steel.
- ** Jade gives a chime-like sound when it's hit by another stone. Many other stones give a dead thunk. The Chinese made flutes and other instruments from jade.
- ** Jade often has a shiny, greasy looking surface.
- ** Jade is usually super smooth in the straight parts (ala, not where part of the carved or other design)



jade

Pearls

A pearl is a hard gem produced inside a shelled mollusc. They can be valuable and are popular as gems on earrings, necklaces and other jewelry. Materials have been used to make faux, fake, substitute (or what other term you want to use) pearls. Fake pearls can be, amongst other things, painted over glass, plastic balls and small shells. This section offers some quick introductory tips to telling the difference between real and fake pearls, but isn't intended to replace the opinion of a qualified gemologist or jeweler.

- The most common and well known test for a pearl is to run it over the edge of your teeth. A real pearl will feel sandy and gritty, while fake pearls tend to feel smooth. Similarly, if you lightly rub two pearls against each other, they should feel gritty not smooth.
- If you put a pearl under a strong microscope, the surface looks scaly. Fake pearls often have a grainy surface.

- Closely examine the pearls for flaws. If the pearl is completely and unnaturally perfect, that points to it being a fake. Real old pearls are imperfect items from nature.
- Pearls are fairly heavy and tend to be heavier than fakes. Glass, however, can have some heft to it.
- If you have a string of pearls, examine it under sunlight or other bright light source. As natural pearls in a necklace were taken from different mollusks and often from different places, the tones of the pearls should differ. If the tone/color is the exact same across all the pearls, that points to them being fake.
- Similarly, under black light the different pearls should fluoresce differently on a string of pearls, and will tend to fluoresce yellowish or tan. Fake pearls will tend to be uniform across the line.
- Cultured (rather than natural or wild) pearls were introduced in the 1900s. If there is rock solid provenance showing a pearl or pearls is from before 1900 it is significant.

Fake and Real Ivory

Ivory is a traditional and valuable material that comes from from the tusks or teeth of elephants, hippopotamus, narwal whales, wild boars and a few other animals. Since ancient times, ivory has been used to make figures, buttons, combs, chess boards and more.

Genuine ivory has long been a challenge to identify, as similar looking items have been made out of bone, vintage plastics, ceramics and nuts. The following is a quick look at telling the difference between ivory and its fake counterparts.

It's often wise to get the second opinion and/or buy from a reputable expert.

Ivory. Ivory is heavy and cold to the touch when you put it to your cheek. It will usually have " Schreger lines." These lines may be cross hatching circular rings.

If you do the so called 'hot needle' test and press the tip of a hot needle to the ivory surface, it will not press in and may slightly smell of bone.



Schreger lines in genuine ivory

Bone. Bone will not have the Schreger lines, but will have brown or black pores. The brown or black is from the accumulation of dirt. If you press a hot needle to it, it may smoke and will smell of bone.

Plastic ivory. The most common antique plastic versions of ivory are from bakelite and celluloid. Bakelite can be heavy like genuine ivory, but celluloid is noticeably light and translucent. If you press a hot needle to the plastics it will press in easily and smell like chemicals rather than bone. For a less destructive test, you can put the item under hot water and get the same chemical smell. 'French ivory' and 'ivoryide' are names for celluloid ivory.

Vegetable ivory. Vegetable ivory is carved from the hard Tagua nut of South America, and is used to make little carved figures and buttons. It closely resembles ivory and will have a pattern similar to Schreger lines. The husk of the nut is dark brown and often is part of the carving and the carving can be larger than the nut. The hot needle test will produce the smell of burning walnut shells.



Vegetable ivory nuts in their natural state.



Vegetable ivory figure with the husk left on at the bottom

Diamonds

It goes without saying that diamonds are expensive and always in high demand. There are numerous kinds of fake or faux diamonds, including glass, plastic, simulant and synthetic stones. While expert diamond and gemstone identification requires scientific tests and much experience, the following offers a few quick tips for judging if a diamond is the real thing.

1) Diamond (natural or synthetic) is the hardest natural material on earth. It will not be scratched by any other substance. It easily scratches glass and other stones. A steel knife won't cut it.

However, there are other very hard, if not as hard, stones including rubies.

2) Diamonds are cold to the touch. They don't heat up.

3) Try reading through the stone. Due to the way diamonds manipulate the light, you can't read a newspaper or other text through a diamond. If you can read through it, it's not a diamond and likely glass.

4) Diamonds stay dry. Fog it up with your breath. The fog will disappear right away on a diamond.

5) Sharp edges and corners. As diamonds are so hard they don't wear out. If the corners and cuts on your diamond ring are rounded, it's not a diamond.

6) Look inside for flaws and inclusions. Natural diamonds are almost never perfect, but can have inside flaws and inclusions. If it's perfect, it may be synthetic diamond or glass. There are natural diamonds without flaws, but they are extremely rare and EXTREMELY expensive. As in only the super rich could afford one.

7) If the stone has air bubbles, it's glass.

8) Is the sales price consistent with it being a real diamond? Use common sense. Someone isn't going to sell you a natural diamond for a fraction of the price.

9) Check the mount. In particular for modern jewelry, a quality diamond will be on a ring or earring made of precious metal, as with high grade gold, silver or platinum. If the ring is made of brass, aluminum or steel, it probably isn't holding a diamond. The type and quality of the precious metal is usually stamped into the metal and can be located somewhere on the jewelry.

10) Electronic diamond testers. Most gem testing equipment is pricey, but there are inexpensive and handheld diamond testers. They can quickly tell if you if a diamond is genuine or simulant. The catch is it can't tell the difference between synthetic and natural diamonds— as they are both diamonds.

11) Luckily, synthetic diamonds for jewelry is a recent phenomenon so if you're certain the diamond ring is from 1850, then it's natural not synthetic. Also, and as already noted, synthetic diamonds can be perfect whereas natural diamonds will usually have inner flaws. You can find diamond testers for sale at eBay, amazon and similar places.

12) Ask for outside expert opinion. Purchase a diamond that has

already been certified and graded by reputable company like GIA, or submit it yourself. A local jewelry store may be of help. The Jeweler may charge you. Buy from a reputable, knowledgeable seller.

Jet and Oak Bog



Princess Louise, daughter of Queen Victoria, wearing her jet bead necklace. Jet is a black fossilized wood that Queen Victoria popularized for jewelry. The term jet black comes from jet.

Jet is a black fossilized material prized for its gem-like use in jewelry, including necklaces, brooches, pins and earrings. The term jet black, meaning as black as black can get, comes from jet. When

Prince Albert died in 1861, his wife Queen Victoria famously wore jet mourning jewelry and jet was popularly used in general for Victorian era mourning jewelry.

Primarily originating from underneath Whitby England, jet is fossilized wood, often well over one hundred thousand years old. Though not particularly attractive when it's mined from the ground, it is easily carved and polished to a gem-like black. You can sometimes see patterns from the original tree.

Jet is light and floats or sinks slowly in water. If you rub jet on unglazed pottery or a sidewalk it will leave a brown/black streak.

French Jet is a black or very dark red glass used to imitate jet in antique jewelry. Jet is a highly prized fossilized wood that was carved into intricate designs. French jet is heavier and colder than Jet, and often shinier. Unlike with the hand molded jet, French Jet can have mold lines.

Oak bog, is also wood (actual oak, fir, pine or yew) that has been fossilized in peat marshes or bogs so that it turns hard and black or very dark brown in color. As with Jet, it is also lightweight and warm to the touch, but it usually has a matte finish, as opposed to jet's gleaming polish. Pieces made of it often have Irish motifs (shamrocks, harps), as it was popular for crafting jewelry in 19th-century Ireland. Bog oak leaves a brown streak when rubbed on a white, unglazed tile.

15) Cloth

There are many different kinds of cloth fibers, both natural and synthetic. As with metals and their ores, many cloths are a combination of different types of thread which can make exact identification difficult. Synthetic cloths tend to be modern, most from the 20th century and later, and easily identifiable. This makes identifying modern made synthetic cloth items straight forward. Clearly this will identify many modern made reproductions and fakes of antique items.

Along with general use and feel, cloths are commonly identified by how they burn, including the smoke given off, smell and ashes. The common burn test involves taking a small swatch or even threads from the cloth and burning them safely, carefully and over a metal bucket with water nearby. Take due safety precautions



Many items have the items on tags, which makes identification easy. As polyester was invented in 1941, the above couldn't be a 1800s shirt.

The following is look at the common natural and synthetic cloth fibers.

Natural Fibers:

Acetate (cellulose acetate) was invented in 1865. It is considered a quality, fancy cloth that is used in dresses and other fashion. Burn test: Flames and burns quickly, has an odor similar to burning paper and hot vinegar. Its residue is a hard, dark, solid bead. Fingernail polish remover will dissolve the threads.

Cotton is a strong cellulose fiber used widely in clothes, hats, ropes, sheets and many other items. Burn test: It burns and may flare up under flame. No melted bead is left. After burning, it continues to glow. It gives off a smell of burning paper and the smoke is gray or white. The ash is fine and soft.

Hemp. A cellulose fiber that burns quickly with bright flame. During burning there are no melted beads and it smells like burning leaves or wood.

Jute. A cellulose fiber that doesn't shrink from flame, and otherwise burns like hemp.

Linen. A cellulose fiber that burns similarly to hemp and jute. It takes longer to ignite and quickly extinguished by blowing on it.

Rayon is a cross between natural and manmade, as it was invented by man but using natural substances. It was invented in 1855 but not commercially produced until 1891. Burn test: It has no flame or melting, but may flare up. There are no beads. After the flame it may glow a bit longer than cotton. It smells like burning paper, and leaves a soft, gray ash.

Silk is considered a high end cloth and has been used for centuries. It is a protein fiber that burns slowly and curls away from the flame. It leaves dark, easily crushed beads. It is self-extinguishing and leaves ash that is a dark powder. It smells like burned hair and gives off little smoke.

Wool is a protein fiber that burns slowly. It sizzles and curls away from flame and may curl back. It is self-extinguishing and leaves beads that are brittle, dark and easily crushed. It gives off a strong odor of burning hair or feathers, and a dark smoke.

Synthetic fibers

Acrylic fibers, early on called by the brand name Orlon, was invented in 1941 but not widely manufactured until the 1950s. It resembles silk and is often called artificial silk. Burn test: fiber samples flare up and shrink under flame. It burns fast with a hot sputtering flame and dripping, and continues melting when the flame is removed. The beads are hard, dark, and with irregular shapes. It gives out a strong acrid, fishy odor. Although no ash is left, their is black smoke and fume are hazardous.

Nylon was invented in 1935 and used in during World War II. The cloth can resemble silk and was used during WWII as a substitute for silk parachutes and silk stocking. It was also used to make strings for instruments, packaging and hard plastics. Burn Test: Burns quickly and shrinks from the flame. After removing the flame, the fibers burn slowly, melt and may beads and drip. It self extinguishes. It smells like celery, leaves behind no ash.

Polyester was invented in 1941 and has been widely used in many products. This includes hats, shirts, blankets, sheets and furniture. Burn test: It burns quickly and shrinks away from flame. It often also flares up. It leaves hard, dark, round beads. After the flame, it burns slowly and is not always self-extinguishing. It has a slightly sweet chemical odor. It leaves no ash but its black smoke. The fume is hazardous.

Sources and further reading

[Http://vintagevisage.net/burn_chart.html](http://vintagevisage.net/burn_chart.html)

[Http://www.vintagevisage.net/fabric_itendfication.htm](http://www.vintagevisage.net/fabric_itendfication.htm)

16) Fur

Fake fur is a relatively modern invention. Thus, fake fur will help identify an 'antique' item as a modern fake or reproduction. Fake fur was introduced in 1929 and has been commercially available since the 1950s.

The following are some tips for identifying fur versus fake fur:

**** Check the backing -** Genuine fur will be on leather, the original skin of the animal. It will resemble suede and there are often strips of leather sewn together. You may be able to see the backing if you part the fur and separate the hairs.

The material on faux fur, on the other hand is fabric, often ribbed and clearly not leather.

**** Price-** Real fur tends to be much more expensive than fake.

**** Feel of the fur--** Real fur is soft and smooth. Fake fur feels coarse and plastic.

**** Burn test.** Pull out a few strands of hair. Hold the hair to a match over a plate or fire-proof surface with safety water nearby. Fur will singe and have a burnt hair smell. Faux fur will smell like melted plastic and curl in to plastic balls.

**** Pin test.** Poke a pin through the fur and backing. If it's hard or impossible to push through, this is consistent with the leather backing of real fur. If it goes through easily, this suggests it is fake fur.

The following are some common types of fur.

Beaver. Beaver was long a popular fur due to its warmth and hardness. It is dense and lasts well. Many antique beaver items are still in strong shape. Beaver has been used to make winter hats,

coats, muffs, scarves and more. It is identified due to its prevalence, density and warmth. It resembles a bear's cold weather fur.

Fox. Fox comes in several possible colors, including white, silver, red, blue, brown and beige. Due to the different colors, they are not often dyed. The fur is soft, with relatively long hairs. Popular in the 1930s-40s were whole fox pelts, worn around the neck complete with head and feet.

Mink. Long considered a luxury item, mink are small animals so it takes many pelts to make a coat. Mink fur is short and flat, thick but light and often described as shiny and wet.

Rabbit. Rabbits are plentiful around the world, so there is much rabbit fur and it is often less expensive and are often dyed to resemble other furs, including mink and fox. Rabbit fur feels like pet cat fur. It is silky soft and the hairs are long.

Raccoon fur is mostly made up of the undercoat (the short hairs), and was often used for winter items. Raccoon is similar to fox fur but with a different coloring.

Sources and further reading on fur:

<http://sammydvintage.com/vintage-style/fur-types/>

<http://www.ebay.com/gds/IDENTIFYING-FURS-PHOTOS-E-bayers-Vintage-fur-guide-/10000000001591715/g.html>

16) Leather

Artificial leather is a relatively modern invention, so identifying something as fake leather will weed out many fake or modern reproduction of antiques.

Tips for Identifying Real Versus Fake Leather

- * Look at the edging of the fabric. Real leather will have a roughish feel to it, while fake can look and feel like foam or plastic.
- * Feel the fabric. Fake leather has an artificially smooth, often plastic feel to it.
- * Examine for pores on the surface. Pores on the fake will be in a consistent, repeating pattern, whereas pores on the real thing will be more irregular.
- * Smell it. Leather smells like leather. Fake leather doesn't

For further reading:

<http://www.all-about-leather.co.uk/what-is-leather/leather-types.htm>

17) Miscellaneous Materials

Horn or hoof

The hot needle test will give the odor of burning feathers, burning hair or meat, and produce sizzling and smoke. If you hold it up to light, you should see light through edges.

Early Rubber

Charles Goodyear discovered the vulcanization of rubber in 1839 and hard rubber was made from the mid 1800s on. The pin test gives off a rubber smell, while related and common early natural rubber Gutta Percha tastes salty.

Goodyear did not make the rubber, but only leased out its patent. The rubber items from the 1800s and early 1900s are usually marked. Early marks can include 'N.R. Co.' (Novelty Rubber Co., mid to late 1800s), "IRC Co." (India Rubber Co.), "India Rubber" and "AHR Co. (American Hard Rubber Co.-- early 1900s). Rubber with a Goodyear 1851 patent date dates to the 1800s (the patent date isn't the manufacture date).

(reference: vintagebuttons.net)

Mother of pear, or nacre is a shiny material lining the inside of of

some mollusc shells and the outer coating of pearls. It is strong and has been used as a fancy material for many items including jewelry, buttons and clock faces. Faux mother of pearl is often made out of plastic. Real mother of pearl will have a 'click' when you bight on it with your teeth (be careful!) and is colder than plastic.



Tortoise shell



The hot needle test produces a smell of decaying fish, seaweed,

burning hair or the smell of the sea, and produce some sizzling and smoke. Tortoise shell is often ornately engraved.

Wood glue

In victorian days, trading cards, paper die cuts and trade cards were often glued in to albums with period wood glue. The glue remnants on back are brown and thin, and easily differentiated from modern elmer's glue.