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Andean Importers: Materials Guide
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1 Introduction

Welcome to Andean Importers' guide to the materials most often found in our jewelry. The reason we wrote this guide is better inform our customers about what they're purchasing: many of our items are very unique — like our five stone pendant made of sodalita and serpentina — and some constituents may not be common knowledge to the average buyer.

2 Materials

2.1 Precious Metals

Silver & Purity: The Scale of Millesimal Fineness Millesimal fineness[1] is a system of denoting the purity of platinum, gold and silver alloys by parts per thousand of pure metal in the alloy. The gradations, as the name implies, are in the units of thousandths and usually rounded to a three-digit number. So, for example **Sterling Silver is 92.5% silver** and is thus denoted as 925/1000, or simply 925 silver. It is easy to see that the higher the grade the more pure is the silver. **Andean Importers sells a higher grade of silver than Sterling.** This higher grade of silver is found in all of our products and is **950 silver**, often referred to as **Mexican Silver**.

The millesimal fineness scale is an extension of the older carat (karat in North American spelling) system of denoting the purity of gold by fractions of 24, such as "18 carat" for an alloy with 75% (18 parts per 24) pure gold.

2.2 Seimprecious Stones

Fluorite (Peruvian Fluorite) Fluorite[2] is a mineral with a veritable bouquet of brilliant colors. Fluorite is well known and prized for its glassy luster and rich variety of colors. The range of common colors for fluorite starting from the hallmark color purple, then blue, green, yellow, colorless, brown, pink, black and reddish orange is amazing and is only rivaled in color range by quartz. Intermediate pastels between the previously mentioned colors are also

possible. It is easy to see why fluorite earns the reputation as "The Most Colorful Mineral in the World."

The many colors of fluorite are truly wonderful. The rich purple color is by far fluorite's most famous and popular color. It easily competes with the beautiful purple of amethyst. Often specimens of fluorite and amethyst with similar shades of purple are used in mineral identification classes to illustrate the folly of using color as the sole means to identify minerals.

The blue, green and yellow varieties of fluorite are also deeply colored, popular and attractive. The colorless variety is not as well received as the colored varieties, but their rarity still makes them sought after by collectors. A brown variety found in Ohio and elsewhere has a distinctive iridescence. The rarer colors of pink, reddish orange (rose) and even black are usually very attractive and in demand.

Most specimens of fluorite have a single color, but a significant percentage of fluorites have multiple colors and the colors are arranged in bands or zones that correspond to the shapes of fluorite's crystals. In other words, the typical habit of fluorite is a cube and the color zones are often in cubic arrangement. The effect is similar to phantomed crystals that appear to have crystals within crystals that are of differing colors. A fluorite crystal could have a clear outer zone allowing a cube of purple fluorite to be seen inside. Sometimes the less common habits such as a colored octahedron are seen inside of a colorless cube. One crystal of fluorite could potentially have four or five different color zones or bands.

Fluorite is the most popular mineral for mineral collectors in the world, second only to quartz. Fluorite is by far one of the most beautiful and interesting minerals available on the mineral markets.

As well as ornamental uses, fluorite[1] is used in the making of opalescent glass, enamels for cooking utensils, hydrofluoric acid, and as a flux in the manufacture of steel. Fluorite is also used in some high performance telescopes and camera lens elements instead of glass. The name fluorite is derived from the Latin fluo, meaning "flow", in reference to its use as a flux. Fluorite is slightly soluble in water, and is decomposed by sulfuric acid to form free hydrofluoric acid, which etches glass.

Lapis Lazuli Lapis lazuli[3], also known as just lapis, is a stone with one of the longest traditions of being considered a gem, with a history stretching back to 5000 BC. Deep blue in color and opaque, this gemstone was highly prized by the pharaohs of ancient Egypt, as can be seen by its prominent use in many of the treasures recovered from pharaonic tombs. It is still extremely popular today.

Lapis is a rock and not a mineral because it is made up from various other minerals. To be a true mineral it would have one constituent only.

The first part of the name is the Latin *lapis*, meaning stone. The second part, lazuli, is the genitive form of the medieval Latin *lazulum*, which came from Arabic (*al-lazward*), which came from Persian. This was originally a place-name, but soon came to mean blue because of its association with the stone. English azure, Spanish *azul*, Italian *azzurro* also derives from this source. Taken as a whole, lapis lazuli means stone of azure.

Lapis Lazuli in History & Culture In ancient times, lapis lazuli was known as sapphire, which is the name that is used today for the blue corundum variety sapphire. It appears to have been the sapphire of ancient writers because Pliny refers to saphirus as a stone sprinkled with specks of gold. A similar reference can be found in the Hebrew Bible in Job 28:6.

In ancient Egypt lapis lazuli was a favorite stone for amulets and ornaments such as scarabs; it was also used by the Assyrians and Babylonians for seals. Egyptian burial sites dating before 3000 B.C. contained thousands of jewelry items, many of lapis. Powdered lapis was used by Egyptian ladies as a cosmetic eye shadow.

As inscribed in the 140th chapter of the Egyptian *Book of the Dead*, lapis lazuli, in the shape of an eye set in gold, was considered an amulet of great power. On the last day of the month, an offering was made before this symbolic eye, for it was believed that, on that day, the supreme being placed such an image on his head.

The ancient royal Sumerian tombs of Ur, located near the Euphrates River in lower Iraq, contained

more than 6000 beautifully executed lapis lazuli statuettes of birds, deer, and rodents as well as dishes, beads, and cylinder seals. These carved artifacts undoubtedly came from material mined in Badakhshan in northern Afghanistan. Much Sumerian and Akkadian poetry makes reference to lapis lazuli as a gem befitting royal splendor.

The Romans believed that lapis was a powerful aphrodisiac. In the Middle Ages, it was thought to keep the limbs healthy, and free the soul from error, envy and fear.

It was once believed that lapis had medicinal properties. It was ground down, mixed with milk and applied as a dressing for boils and ulcers.

Many of the blues in painting from medieval illuminated manuscripts to Renaissance panels were derived from lapis lazuli. Ground to a powder and processed to remove impurities and isolate the component lazurite, it forms the pigment ultramarine. This clear, bright blue, which was one of the few available to painters before the 19th century, cost a princely sum. As tempera painting was superseded by the advent of oil paint in the Renaissance, painters found that the brilliance of ultramarine was greatly diminished when it was ground in oil and this, along with its cost, led to a steady decline in usage. Since the synthetic version of ultramarine was discovered in the 19th century (along with other 19th century blues, such as cobalt blue), production and use of the natural variety has almost ceased, though several pigment companies still produce it and some painters are still attracted to its brilliance and its romantic history.

Opalo Andino **Opalo Andino**, or **Andean Opal**[7] is a lovely bluegreen translucent opal found in the Andes mountains near San Patricio, Peru. Copper may be the essential trace element that causes its soft distinctive color. It has been used by native South Americans for more than a thousand years and is well known in the semi-precious stone trade.

Peruvian blue and pink Andean opal is relatively rare. It is a very translucent stone with color similar to the Caribbean Sea. Depending on how the stone is cut it can be clear, scenic showing varying degrees

of color or dendritic which has black fern like inclusions.

Other Characteristics: can sometimes fluoresce in various hues of green, or blue purple or white. It demonstrates a rich hue of colour some phosphoresce and *all specimens can be very sensitive to impacts and low temperatures*. Opal forms the skeletons of some marine organisms, such as diatoms. Diatomite, or diatomaceous earth is a sedimentary rock made up of the remains of diatoms. Opalo Andino is formed by weathering and alteration of siliceous rocks being deposited at low temperatures, especially in the area of geysers and hot springs. Best Field Indicators are color, low density, fluorescence, fracture filling tendency and lack of cleavage or crystal faces.

Recent commercial production is making more of this expensive material available to jewelers and craftsman around the world.

Serpentina Serpentina is said to owe its name either to its serpent-like colours and patterns or from an old belief that the stones were effective protection from snake bites.

Most serpentinas are opaque to translucent, light, soft, infusible and susceptible to acids. All are microcrystalline and massive in habit, never being found as single crystals. Lustre may be vitreous, greasy or silky. Colours range from white to grey, yellow to green, and brown to black, and are often splotchy or veined. Many are intergrown with other minerals, such as calcite and dolomite.

The more attractive and durable varieties (all of antigorite) are termed "noble" or "precious" serpentine and are used extensively as gems and in ornamental carvings. Typical cloudy patches and veining are apparent.

The Maori of New Zealand once carved beautiful objects from local serpentina, which they called *tangiwai*, meaning "tears". Material quarried in Afghanistan, known as *sang-i-yashm*, has been used for generations. It is easily carved, taking a good polish, and is said to have a pleasingly greasy feel.

The lapis atracius of the Romans, now known as verde antique or *verde antico*, is a serpentinite brec-

cia popular as a decorative facing stone. In classical times it was mined at Casambala, Thessaly, Greece. Serpentine marbles are also widely used: Green Connemara marble (or Irish green marble) from Connemara, Ireland (and many other sources), and red Rosso di Levanto marble from Italy. *Use is limited to indoor settings as serpentinites do not weather well.*

Sodalita Sodalita[6] is a rare, rich royal blue mineral widely enjoyed as an ornamental stone. Although massive sodalita samples are opaque, crystals are usually transparent to translucent. Sodalita is a member of the sodalite group and together with hauyne, nosean and lazurite is a common constituent of lapis lazuli.

Discovered in 1806 in Greenland, sodalita did not become important as an ornamental stone until 1891 when vast deposits of fine material were discovered in Ontario, Canada. It has since been named Princess Blue after Princess Patricia who, upon visiting Ontario some time after its discovery, chose sodalite as interior decoration for Marlborough House in England.

A light, relatively hard yet fragile mineral, sodalite is named after its sodium content. Well known for its blue colour, sodalita may also be grey, yellow, green, or pink and is often mottled with white veins or patches. The more uniformly blue material is used in jewelry, where it is often fashioned into cabochons and beads. More veined material is more often seen as facing or inlay in various applications.

Although very similar to lazurite and lapis lazuli, sodalita is never quite comparable, being a royal blue rather than ultramarine. Sodalita also rarely contains pyrite, a common inclusion in lapis. It is further distinguished from similar minerals by its white (rather than blue) streak. Sodalita's six directions of poor cleavage may be seen as incipient cracks running through the stone.

Hackmanite is an important variety of sodalite exhibiting tenebrescence: when freshly quarried, it is a violet to red colour and gradually fades to a white or green in sunlight. If left in a dark environment for some time, the violet will return. The process is

accelerated by the use of shortwave ultraviolet light. Much sodalite will also fluoresce a patchy orange under UV light.

2.3 Shells

Mother-of-Pearl Simply put, **Nacre**, also known as **Mother of Pearl**[5], is the inner layer of a pearl. It is attractive and has an interesting origin. The iridescent inner layer is considered highly attractive by many cultures and is often used in making jewelry or as inlays in wood furniture and guitars.

Creation When a mollusk is invaded by a parasite or is irritated by a foreign object that the animal cannot eject, a process known as encystation entombs the offending entity in successive, concentric layers of nacre. This process eventually forms what we call pearls and continues for as long as the mollusk lives.

Chief sources are the pearl oyster, found in warm and tropical seas, primarily in Asia; freshwater pearl mussels, which live in many rivers of the United States, Europe, and Asia; and the abalone of California, Japan, and other Pacific regions. [edit]

Decorative Uses Tiles: Small, hand-cut shapes with straight edges, called 'tesserae', are laminated to either a marble or a ceramic base. The tesserae are hand-placed and closely sandwiched together, creating an irregular mosaic or pattern (such as a weave). The laminated material is typically 1/16 of an inch thick.

Sheets: Instead of using a marble or tile base, the mother of pearl tesserae are glued to a fiberglass mesh. The result is a lightweight material that offers a seamless installation, and there is no limit to the sheet size. Mother of pearl sheets may be used on interior floors, exterior and interior walls, countertops, doors and ceilings. Insertion into architectural elements, such as columns or furniture is easily accomplished.

Both black and white mother of pearl are used for architectural purposes. The natural mother of pearl may be artificially tinted to almost any color.

Mother of pearl is also used to clad porcelain sinks. Mother of pearl tesserae may be cut into artistic shapes and be laminated to ceramic tile and surrounded by numerous coats of colored lacquer to create an artistic design. The lacquer and the mother of pearl are polished at the same time, creating a durable, glossy hard surface.

It is also available in thin laminated sheet form, allowing easy inlay and cladding work, and modern ceramic tiles.

Shirt buttons were once often made of mother of pearl, though plastic has largely replaced its use. Some of the finer-quality clothing companies (e.g., Lacoste) still use it, however.

Key touches and various decorations on musical instruments such as saxophones, trumpets, and guitars are sometimes made of mother of pearl.

Spondylus[4] Spondylus is a genus of bivalve mollusks known as Thorny Oysters or Spiny Oysters.

Spondylus shells are much sought after by collectors, and there is a lively commercial market in them. Archaeological evidence shows that people in Neolithic Europe were trading the shells of Spondylus gaederopus to make bangles as long as 5000 years ago. The shells were harvested from the Mediterranean but were transported far into the centre of the continent.

Spondylus princeps are also found off the coast of Ecuador, and have been important to Andean peoples since pre-Columbian times.

2.4 Other Organics

Pumpkin Rind The Peruvians have been using pumpkin rind for many years in traditional dress and jewelry. Other applications can be found in clothing (belt buckles) and necklaces. When caring for these unique items, please do **not** use harsh detergents, or perfumes as they may damage the item.

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