Material Guide

Rhodium - This extremely rare and precious metal is of silvery color and it is commonly used for its reflective properties. It has a very high fusion point and an extraordinary ability to withstand corrosion. In jewelry, rhodium is used as a final layer on other precious metals to donate even more resistance to oxidation, keeping whiteness and
shine over time. Rhodium is chosen primarily for its unmatched white color, brightness, and for its high corrosion resistance even at minimum thickness.

Platinum - It is almost 15 times less abundant than gold and in addition to being employed in jewelry, it has multiple industrial uses. It is a metal known for its malleability, resistance to corrosion, and high density. It's a niche material, not widespread in the world but already utilized in the ancient Egypt jewelry. A curiosity about platinum: the famous Koh-i-Noor diamond is mounted on platinum.

Gold - It is by far the most popular of precious metals. On top of its timely listing, gold is the excellence precious metal for its desirability, durability and malleability. It is one of the oldest metals used in coins,
from the ancient Romans in 50 BC to China for more than 3000 years.
Historically, gold has kept its value, irrespective of the collapse of governments, nations, or even of whole cultures. Gold is widely used in alloy with other metals, usually three quarts (18 carats): the carat represents the amount of pure metal in thousands of the total. Pure gold is considered such when it has 999.9 thousandth of pure matter and is thus defined as 24 carat gold. Carats or thousands determine the so-called "title", while the rest of the alloy can be made up of different materials. The most commonly used materials in gold alloys are silver, copper and palladium: the different amount of those metals in gold alloys determines the color of the final material, thus obtaining multiple possibilities of variations, from yellow gold to white gold, and even pink or brown.

Ruthenium - Ruthenium belongs to the platinum metal group and as such it retains many of its features: hardness, rarity and ability to withstand external elements. It is often added to platinum or palladium to obtain a harder and more durable alloy, still of high value. The Ruthenium bath of is used to produce an anthracite, dark color finish: this finishing process represents an alternative to chrome and tin-cobalt plating baths to get dark deposits

Iridium - Even iridium has a white-silver color, belongs to the group of
platinum metals and features an extremely high melting point, being one of the densest elements existing on top to its even higher resistance to corrosion. In jewelry it is used in platinum alloys, thus granting a more resistant material both mechanically and
chemically, while maintaining the typical ductility of platinum.

Osmium - Osmium is one of the densest elements existing on earth. With a blue-silver color, it is very hard, fragile and with a very high melting point. Osmium too is often used to harden platinum alloys

Palladium - This white-gray metal is very much sought after for its rarity, ductility, stability at high temperatures and for its capability to absorb hydrogen at room temperature. In addition to its use in jewelry to get the so-called white gold, it is also used for the making of coins and watch cases: it

features natural luster when polished and in the world of jewelry its use is relatively recent and innovative

Silver - After gold, it is the precious metal of excellence, and considered a form of currency since its discovery. It has excellent electrical and thermal conductivity and, on top of jewelry, it has many industrial uses. Silver is the most white metal of all, so malleable that it must be used in alloy with other materials (often copper) for it to get the necessary strength to be transformed into jewel. It is usually tied up to 925 thousands, and in some countries it is considered pure even in this percentage. In Italy it is considered Silver though tied in 800 thousandths

Diamond - The word "diamond" comes from the union of two greek words: "adamas" (indomitable) and "diaphanes" (transparent). Diamond is the hardest material in nature, it forms at a depth of about 200 km, in the upper terrestrial mantle where, thanks to temperatures between 900 and 1200 C combined with pressures 50,000 times higher than the atmospheric one, carbon is able to crystallize. Following crystallization, it was possible for diamonds to find a way out through unique deep volcanic eruptions which have not occurred in over 500 million years.
Diamond measurement unit is the carat, which corresponds to 0.2 grams.
The value of a diamond is determined by the famous 4C:
1. Color: the purest diamonds are "colorless" and are followed by "near colorless" and finally by the "slighty tinted"
2) Clarity: indicates the presence or absence of so-called inclusions as well as their visibility at 10 magnifications or naked eye
3) Cut: based on the quality of the cut, diamonds are divided into categories: "very good" when symmetry and proportions are perfect or with irrelevant defects; "good"
when symmetry and proportions are lower; "poor" when many or major defects can be highlighted
4) Carat (Weight): one carat is equivalent to 0.2 grams and can in turn be subdivided into hundreds of a carat.

Famous diamonds:
- Koh-i-Noor, which is currently in the London Tower and weighs 108 carats
- The Star of Africa weighs 530 carats
Today, diamond is universally recognized as the queen of precious stones.
Below is a table of the characteristics of the diamonds

Ruby - This precious stone, of the Corundum family, has a distinctive red color
in presence of chrome and its name comes from the latin word "Rubeus", used to represents its typical red. Rubies are extremely rare stones, and are often confused with spines and garnets amongts all. It can be sythetically manufactured and the only distinction between a natural and an industrial ruby can only be done through a careful microscopic examination, aimed at identifying the typical natural inclusions.
Ruby's color can vary from purple red to red, while the "pink sapphires" are not considered rubies despite belonging to the corundum family.
High-value rubies are perfectly transparent to the naked eye and inclusions can only be seen with a microscopic analysis. Less valuable rubies have so many inclusions to appear semi transparent, up to opaque. Most rubies on the market are treated to improve their features: at the same appearance, an untreated ruby will always have a greater value than a treated one. The treatment

most commonly used is the thermal one, commercially "accepted" because it is considered less penalizing. Treatments must be declared according to well-defined rules.

Emerald - Emerald name comes from Latin "smaragdus" and it simply means "green stone". This gorgeous stone has taken on important meanings across important cultures: symbol of power in the ancient Egypt, sign of charity for belonging to the heart chakra: emerald is a symbol of nature for its color. The presence of chrome makes it an emerald and it distinguishes it from the green beryl; the stone always has inclusions and surface cracks, so the flawlessness evaluation is always performed with naked eyes, unlike diamonds.This gem:- is 20 times rarer than a diamond,- is difficult to cut because of the many inclusions, which is why it is often cut into the classic rectangular form, called "emerald cut"- has a value not heavily dependent on the size: in fact a small but clear stone may be worth more than a sone of a larger size but more "opaque": this is because larger sizes increase the likelihood of larger inclusions

Sapphire - Sapphire is a variety of corundum, and more precisely denotes the blue / light blue variety of the stone when the name is used alone, when the name is used as a suffix, it is used to indicate the corinthes of other colors (e.g. pink sapphire, ruby, etc.). Sapphire is am extremely rare and precious stone: a very transparent blue stone can also be worth millions of dollars per carat. In the 1800s a specimen of 951 carats was found and undoubtedly, the most famous sapphire is the Ruspoli, 136 carats, flawless, and currently kept in the Museum of Mineralogy of Paris. The most precious sapphires have a deep blue cue, while those with lighter shades are less precious; purity, that is, the presence of inclusions also determines the quality of the gem. A "Royal" curiosity: Lady Diana's engagement ring had a splendid sapphire and was chosen by Prince Charles as a symbol of faithfulness.

Misc stones mistakenly defined as semi-precious - The "semi precious" definition attributed to these stones is definitely misleading and does not make full justice to the actual value that some of these stones actually carry, even in relation to some other precious stones. Some of these stones can show up market prices even higher than a diamond and they have a rarity absolutely comparable to that of more celebrated stones. We also add that they are also really very nice: we at Millewels think of such a definition as to an unjustified and anachronistic one, and you will see it only in this
paragraph to better explain it to our customers and allow them to approach a world made of beautiful stones, featuring great elegance and potential.
Following is the list of these gorgeous stones, feel free to find them out one by one:
Aquamarine, Alexandrite, Amber, Amethyst, Andalusite, Apatite, Apofillite, Benitoite, Bixbite, Brasilianite, Cymophane, Citrino, Demantoid, Dioptase, Eliodoro, Euclase, Fluorspar, Hauyne, Howlite, Iolite, Malachite, Labradorite, Malachite, Oregon, Sunstone, Ortoclasio, Padparadscha, Peridoto, Pezzottaite, Prasiolite, Rutile, Spinello, Tanzanite, Titanite, Topaz, Tourmaline, Tsavorite, Turquoise, Vesuvianite, Zircon