

E is for Emerald

E is for Emerald, the green variety of the beryl family of gems that talks about spring and life that comes around again and again. It has been the gem symbolizing beauty and constant love for centuries and a fine quality emerald can be more valuable than a fine diamond equal in size. Emeralds have been in circulation for more than 3000 years and for centuries people believed that emeralds are good luck gems, and by wearing one, it will enhance one's well-being.



A 4.94 Colombian emerald from Muzo

Let's find out more.

The chemical composition of emerald is $\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$, meaning it is a beryllium-aluminum-silicate.

Colour

The colour of emerald is an incomparably beautiful, most radiantly intense green. There is no other gem that can compare in colour. Yet, it is not just one colour green. The green of an emerald is in a range that is best described as light to very dark green to very strongly bluish green. The cause of the green colour is the presence of chromium in its chemical composition. Some emeralds get their green colour from the presence of vanadium. Some emeralds get their green colour from both chromium and vanadium being present.

Identifying Inclusions

Emerald is a transparent stone but can appear translucent when it is highly included. It is commonly found with inclusions and is graded as a Type III clarity. This gemstone can be identified by what is seen inside the gem. Emeralds have easily recognized inclusions such as calcite, mica, pyrite crystals, tremolite needles and three-phase inclusions (irregular spaces filled with solid liquid and gasses).

Treatments and Synthetics

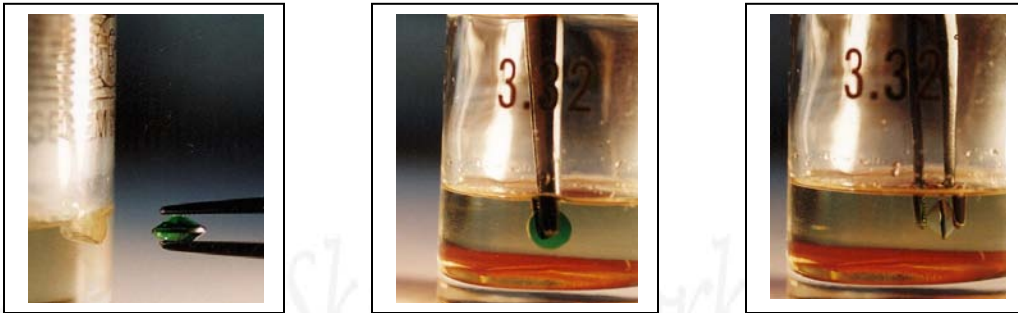
As emeralds are usually a highly included gemstone, these inclusions can affect the transparency of a gem. To improve the appearance, emeralds are often oiled as the oil can hide the inclusions and give the gem a cleaner appeal. The oiling of emeralds is an accepted practice. When the oil contains green dye, it will also improve the colour of the emerald at the same time as hiding the inclusions. It is not an accepted practice to dye emeralds. These enhancements should be disclosed to customers.

There are well known synthetic emeralds on the market. Some manufacturers of synthetic emeralds are Caroll Chatham, Pierre Gilson, Johann Lechleitner, and the Linde Division of Union Carbide. Synthetic emeralds look like natural emeralds but there are differences, for instance, in the type of inclusions found inside the gem. A trained and experienced gemologist will be able to help with separating natural

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from synthetic emeralds. It is compulsory for retailers to disclose to their customers the natural or synthetic nature of emeralds when being sold.

An old deceiving practice that is reappearing today is the **emerald triplets**. These are clear glass, or clear quartz, or clear synthetic spinel glued together with green paste.



This fake emerald looks green from the side and the top, but look sideways at the gem through immersion liquid and the two clear layers with the green paste in between are clearly visible.

The Use of Emerald in Jewellery

The hardness of an emerald is 7.5 to 8 making it a durable stone for all types of jewellery. However, as it often has inclusions, this can make the stone brittle causing problems with cutting and setting. Cutting a rough emerald into a gem is a specialized skill, but as difficult as it is to cut this rough gem, a special cut has been developed for an emerald called the emerald cut. This is the rectangular or square cut with beveled corners that not only protects the gem from mechanical strain, but this clean design also brings out the beauty of this amazing stone.

Other styles are cut as well such as rounds, pears, marquise, ovals, and heart shapes, for instance, even beads, but nothing is as appealing as the classic emerald cut.

It is not unusual to see large emerald gems. In fact, the largest emerald is called the [Mogul Emerald](#), a rare 217.80ct gem that dates back to 1695. This famous emerald, and a few more such as the [75.47ct Hooker Emerald brooch](#), the [37.8ct Chalk Emerald ring](#), and the [167.97ct Mackay Emerald pendant](#), are safely stored at the Smithsonian Institution's National Museum of Natural History.

Taking Care of Emerald

Never clean emerald gemstones in an ultrasonic cleaner or a steamer. Rather use warm, mild soapy water. Exposure to heat could cause breakage or running of fractures. Emeralds are resistant to all chemicals but if the gem has been oiled, cleaning the gem with hydrofluoric acid will remove the oil.

Locations

The best emeralds are found in three main emerald mining areas in Colombia: Muzo, Coscuez, and Chivor. Other deposits are in Afghanistan, Australia, Brazil, Canada, Pakistan, Russia and Zimbabwe.