

Beryl variety: Emerald

'Gem of the eternal spring'. The name emerald is derived from a Persian word, which later appeared as smaragdus in Greek.

General Information

Emerald is the birthstone for May and the anniversary gem stone for 20th and 35th year of marriage. The magnificent green of the emerald conveys harmony and love of nature. Really good quality is rare and inclusions are accepted. These typical crystal inclusions, cracks or fissures are called 'jardin' (garden) due to their resemblance to foliage. These inclusions are like fingerprints and can reveal where the emerald has come from.

The extreme rarity of transparent emeralds can make them more valuable than diamonds.



Legend and Lore

Emerald is steeped in superstition and lore and was dedicated by the ancients to the Goddess Venus. The Inca's and Aztecs of South America regarded the emerald as a holy gemstone.

It is the symbol of immortality and is said to be beneficial to the eyes.

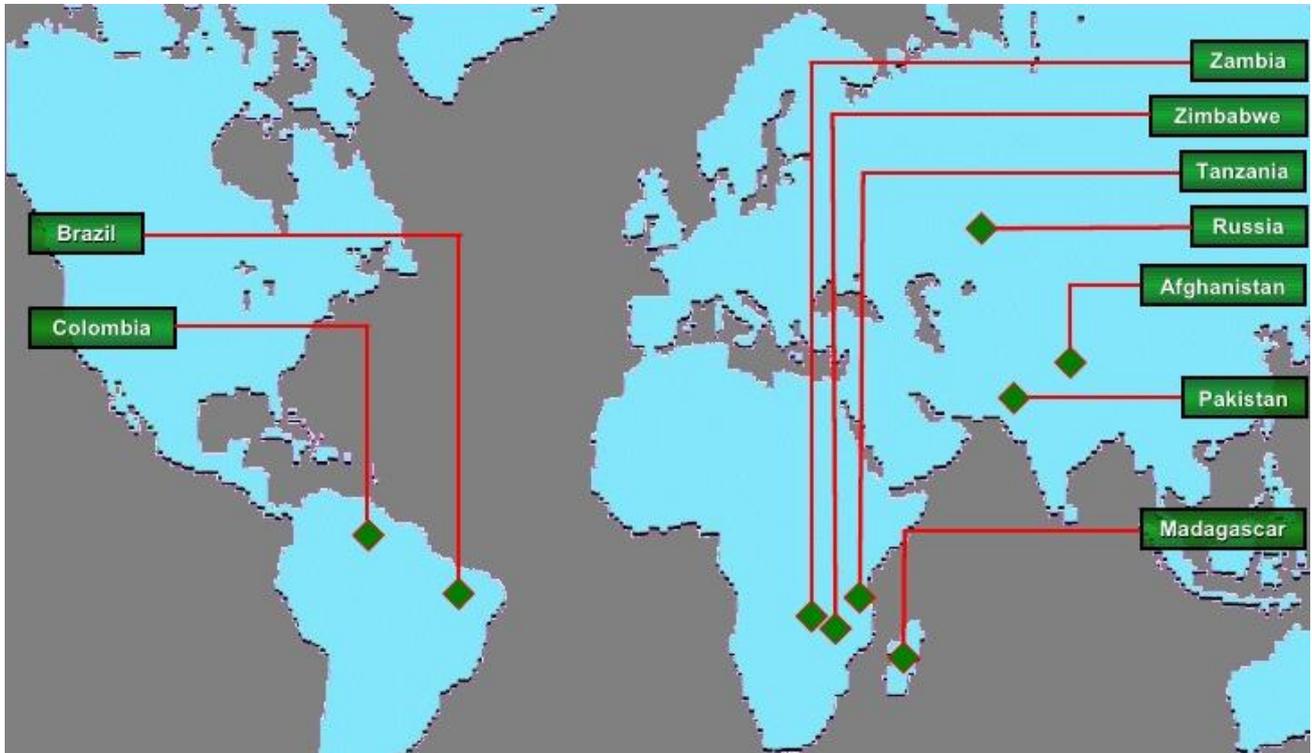
History

Emerald has a rich history and tradition. Archaeologists have traced their use in ancient India and Egypt as far back as 3000 B.C. The earliest known locality for emerald was the group of mines by the Red Sea in Egypt, the so-called Cleopatra's emerald mines which were probably worked around 2000 B.C. and most of the emeralds used in ancient jewellery came from them. The mines were re-discovered in the early 18th century but they had already been exhausted by the Egyptian pharaohs.



Location

Emeralds are found in several places throughout the world. Without a doubt, the finest emeralds come from the top three Colombian mines: Muzo, Chivor, and Cosquez. Emeralds of varying (but generally inferior) colour, clarity, and quality are also mined in Brazil, Pakistan, Afghanistan, Madagascar, Nigeria, Russia, Zambia and Zimbabwe (Sandawana producing the well-known fine quality material).



Physical Properties

Mineral Special:	A variety of the mineral beryl
Crystal Structure:	Hexagonal crystal system
Specific Gravity:	2.71
Hardness:	7½
Refractive Index:	(DR)1.560 – 1.600

Durability

Emerald's hardness protects it from scratching but its brittleness and fissures can make cutting, cleaning and setting very difficult.

Today, many emeralds are enhanced with colourless oils and resins. This is general trade practice but it makes emeralds very sensitive. Consequently ultrasonic cleaning or immersion in any cleaning agent is harmful to the gem stone.



Enhancements

Today, we have many sophisticated technologies with which to clarity-enhance emeralds.

The inclusions in emeralds are often extremely fine gas pockets or fissures. To disguise these fissures, numerous materials have been used to fill them, and if the refractive index of the filler is similar to that of emerald then it makes the fissure less visible.

In addition to the oils and waxes, we now use clear resins to penetrate the open fissures surfacing in the stones. Hardeners are often added to solidify these liquids. This step prevents the resin from evaporating, thus making the clarity enhancement more permanent than oiling or waxing the gem.

Cedarwood oil is the traditional clarity enhancer that has been used on Colombian emeralds for generations. It improves clarity while at the same time not hiding the fissures completely, thereby allowing the buyer to detect their presence. Also, cedarwood oil is quite stable and remains in the stone.

The only way to confirm that an emerald hasn't been oiled is if the cut stone has no fractures at the surface for oil to enter into the stone.

Ultra sonic cleaning and even the use of hot water and detergent will remove oil impregnation and must be avoided at all costs.



Synthetics & Simulants

Synthetic emerald was developed by Carroll Chatham in 1939. Synthetic emerald is created using the Flux-Growth, and Lechleitner Synthetic Overgrowth (hydro-thermal) methods and is sold under the trade names **Chatham Created Gems** and **Gilson**.

Synthetic emerald can be identified by its characteristic inclusions. Common emerald imitations are green tourmaline, Tsavorite garnet and the Soudé emerald doublet. This comprises two pieces of colourless quartz cemented together with a green coloured material.