

Alexandrite



By Karl Schmetzer

History

Alexandrite is one of the rarest gemstones in the world. Because of its famed change of color from red to green it has been described as “emerald by day and ruby by night”. Abundant alexandrite deposits were first discovered in the 1830’s in Russia’s Ural Mountains. Those first alexandrites were of very fine quality, and displayed vivid hues and dramatic color changes. The gem was named after the young czar Alexander II, and it caught the country’s attention because its red and green colors mirrored the imperial Russian flag.

The Russian deposits depleted, and now most alexandrites come from Sri Lanka, Brazil, India, Tanzania and Madagascar. The new deposits contain some fine quality stones, but many possess less precise color change, and muddier hues.

Although today it comes from different countries, some collector’s will always argue that the Russian material is the finest.

Geology /Properties

Alexandrite is the colour change variety of the mineral species chrysoberyl, chemically is an aluminate of beryllium. Its strongly pleochroic, will exhibit green, red and orange-yellow colours, depending on viewing direction. However, the colour change phenomenon doesn’t arise from the pleochroism but from the unusual and complex way the mineral absorbs light. It’s most distinctive property is that it changes colour depending on the type of lighting, green in daylight or fluorescent light, changing to red or slightly purplish-red in incandescent light such as a candle flame.

The color change is due to strong absorption of light in the narrow yellow portion of the spectrum, while allowing large bands of blue-green and red wavelengths to be transmitted equally.

The gem has given rise to the adjective “alexandric” or “alexandrite effect”, meaning any transparent gem or material which shows a noted change in color between natural and incandescent light. Only the hue is changed by the alexandrite effect, tone and saturation usually remain the same. Some other gem varieties displaying color changes include sapphire, garnet and spinel.

Alexandrite has an excellent toughness. Typically comes in sizes from melee to 5 ct. Larger stones are very rare. It occurs in granitic pegmatites and mica schists. The cause of the colour in alexandrite results from the presence of trace elements of chromium. The rarity of alexandrite is caused by the unique geological environment which it is found in. The elements necessary to form alexandrite are found in two distinct rock types that also lack silica, which is overly abundant in the earth’s crust. If the silica is present, emerald will occur instead of alexandrite.



By Mineral Mines



By Damian by Mischelle

Refractive index	1.745 – 1.759
Hardness	8.5 Mohs scale
Specific gravity	3.5 – 3.84
Crystal System	Orthorhombic
Crystal Habit	Prismatic-tabular with striations, commonly twinned
Fracture	Conchoidal
Luster	Vitreous

Synthetics and Imitations

Synthetic alexandrite was developed in 1973. It can be grown by using the flux or Czochralski methods. Synthetic alexandrite will have a similar colour change to its natural counterpart, often having flux inclusions, curved striae or gas bubbles, depending on the growth technique used. Synthetic alexandrites typically have a slightly lower RI, and stronger fluorescence.

Some gemstones described as synthetic alexandrite, are actually corundum, or color change spinel, and are not actually chrysoberyl. They would be more accurately described as simulated alexandrite, rather than synthetic.



By Pretty Rock

Evaluation and Use



By Respendent Gems

There is numerous average to poor specimens of alexandrite on the market; small stones containing flaws with rather murky colours and mediocre colour change, but even these stones go for high prices. The closer the colours are to green and red of pure hue, and the better and stronger the colour change, the higher the value. Although clarity is a significant factor in evaluation, an alexandrite with poor clarity but good colour and strong color change, is still highly valued.

It is one of the rarest gemstones in the world, and the value between a synthetic stone and a natural counterpart differs excessively. A 3ct. natural alexandrite could cost \$45, 000, whereas a 3ct. synthetic alexandrite would cost about \$500.

Alexandrite is primarily cut into mixed cuts with brilliant crowns and step-cut pavilions in oval or cushion shapes. It is sometimes also cut into cabochons, usually in the cases of lower quality stones.

It's very durable and really popular as a ring stone because of its high hardness and excellent toughness.

Cleaning/Care



By Respendent Gems

Usually it is safe to put alexandrite jewelry in ultrasonic cleaners as long as the stone is not excessively fractured. Lukewarm soapy water and a soft brush is the safest way to clean alexandrite.



By Respendent Gems

Metaphysical/Astrological Properties

Alexandrite's astrological sign is Scorpio, and it is the traditional birthstone of June.

The stone vibrates to the number 5.

It is the symbolic gemstone for the 45th wedding anniversary.

It is said to enable its wearer to foresee danger, and to bring happiness and success. Wearing natural alexandrite jewelry is said to help balance one's emotional state, to provide confidence, increase self-esteem and help bring about change, and draw luck and good fortune.

Alexandrite grounds the second chakra (the naval chakra), and promotes the flow of energy through it. It will also aid its wearer find his inner centre during meditation. The use of alexandrite crystals can help one return to the origin of time and connect with the beginning of one's development. The energy of the crystalline form is especially conducive to the art of manifestation. It is a rare gemstone regarded as having regenerative power. It enhances the rebirth of both the inner and the outer self.



By J. Lawrence



By Mardon Jewelers



By Whiteflash