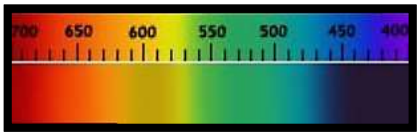
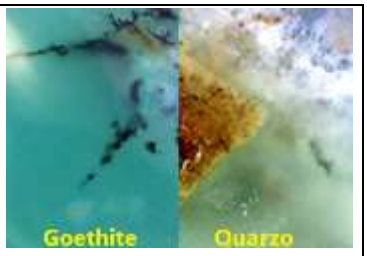
Attention: this version has been completed with Google Translate, it certainly contains errors or inaccuracies.

Technical sheet – general: Chrysoprase

<table>
<tr><td>Gemma – names</td><td colspan="2">(Italian - Crisoprasio)
(English – Chrysoprase/Chrysophrase)
(French - Chrysoprase)
(Spanish - Crisopraso)
(Portuguese- Crisopraso)
(Thai - ไครโซปราส-Krisoprase)
(Hindi - क्रिसोप्रासे Crisoprase)</td><td>(German - Chrysopras)
(Arabic - كريسوبراسي krisuprasi)
(Russian - Хризопраз chrisoprase)
(Mandarin - 克里索普拉斯 Crisoprase)
(Swahili - Chrysoprase)</td><td>photo
  </td></tr>
<tr><td>Colors (GIA)</td><td colspan="3">Chrysoprase is a gemstone variety of chalcedony (a cryptocrystalline form of silica).
The color range of chrysoprase varies from light green to emerald green, with possible shades of yellow or brown. Typically this tint is referred to as apple green. Stones with even the slightest trace of a visible yellow secondary hue are much less desirable and expensive.</td></tr>
<tr><td>Cause of Color</td><td colspan="4">The color of chrysoprase is mainly due to the presence of nickel (microscopic inclusions of silicates with a layer containing Ni) . Nickel replaces iron in its structural unit. Chrysoprase, similar to gemstone chrysocolla, is known to fade when exposed to heat or a dry environment . This is certainly true of material from older European sources, mainly from Silesia. This appears not to be the case with material found in Australia; gems from Marlborough and Yerilla are stable. However, it is still advisable to keep chrysoprase away from prolonged exposure to direct sunlight and other forms of extreme heat.
Idiochromatic gem</td></tr>
<tr><td>Classification</td><td colspan="2">Mineral class
Tectosilicate</td><td>Species – Group (mineral)
Chalcedony (Quartz) - /</td><td>Variety
Crosoprase</td></tr>
<tr><td rowspan="2">Optical properties</td><td>Specific Gravity:
2.58-2.91
Municipality:
2.65</td><td colspan="2">RI: 1.531- 1.539 (1.53 per point)
Polariscope : ADJ
Birefringence: 0.004</td><td>Optical character
Uniaxial positive</td><td>Pleochroism
Absent</td></tr>
<tr><td colspan="3">Luster (gloss) – lustre of fracture
Vitreous - vitreous</td><td colspan="2">Dispersion (fire)
0.018</td></tr>
<tr><td>Light</td><td colspan="3">Fluorescence
SWUV extension (254 nm) : Green
LWUV extension (365nm) : Absent</td><td colspan="2">Phosphorescence
Absent</td></tr>
<tr><td>Form</td><td>Crystal clear dress
Microcrystalline aggregates
Melting point: 1410-1470°C</td><td colspan="2">Phenomenal optical effects
Nobody</td><td colspan="2">crystalline system
Trigonal
Crystal class</td></tr>
<tr><td>Chemical formula</td><td colspan="3">Silicate (silicon diuoxide) hydrate of aluminum
SiO_2</td><td colspan="2">Spectrometer image
 

Not indicative</td></tr>
<tr><td>Fracture</td><td>Cleavage
None</td><td colspan="2">Breaking- Parting
-</td><td colspan="2">Fracture
Conchoidal or granular</td></tr>
<tr><td>Durability</td><td>Hardness (Mohs) - Absolute
6.5-7.0; 86-100</td><td colspan="2">toughness
Fragile</td><td colspan="2">Stability (heat, light, chemicals)
Good (Light, Heat) Fragiel (Acids)</td></tr>
</table>

Clarity-characteristics	**Typical Inclusions:** Chrysoprase may contain small inclusions of other minerals such as **goethite, limonite and hematite** , which can cause color variations. However, due to the relative abundance of the material, chrysoprase is usually cut flawlessly. Stones from Western Australia will sometimes show small **black dendritic inclusions** . Any visible inclusions exclude the stone from being considered of superior quality. 	
	Type III Typically included	**Transparency (commercial) - diaphanousness** From translucent to opaque
Deposits -types of rocks	Chalcedony forms from aqueous silica gel at **relatively low temperatures** . Silica is often weathered from rocks (e.g. basalt) that initially lacked this mineral, and consequently the formation of chalcedony occurred very close to the surface. Chalcedony is found in weathered volcanic rocks, but also in sedimentary ones. In igneous or metamorphic rocks, chalcedony is very rare and forms veins only in cracks that have been leached from silica-rich hot brines. Chalcedony is occasionally found as a petrifying agent in fossils. Chalcedony can completely fill cavities or as a chalcedony layer of rocks, which show a warty or smooth surface, the so-called **botryoidal** (ball-shaped) surface which reveals the formation of a gel. Other forms are thin stalactites and thin, rounded aggregates, the so-called chalcedony roses. The aliases **Geological age** : typically 145-66 million years	
Characteristics of rough stones	Rough chrysoprase stones can grow to large sizes, up to several meters in length. Chrysoprase from Queensland, Australia is considered to be of superior quality. Chrysoprase from Poland is also highly valued for its quality.	
Main deposits	The main chrysoprase deposits are found in **Myanmar, Poland, Australia (Queensland) and the United States.** Minor deposits are found in Indonesia, Russia, Brazil, India, Mexico and Germany.	
Year of discovery	**Ancient or circa AD 77:** Chrysoprase was discovered in ancient times. It was first mentioned by Pliny the Elder in his book "Naturalis historia".	
History	The earliest uses of chalcedony can be traced back to **32,000 BC** . in central Australia, where it was used in tool making. The Greeks and Romans carved the stone into cameos, known as intaglios, and sealed the impressions because the hot wax didn't stick to the stone. It was used in different religious traditions throughout history in Judaism, Christianity, Islam and Buddhism. Chalcedony stone beads have been found in **Turkey dating back to 7000 BC** Chrysoprase appears, like many others, **in the Bible** (or at least its modern translations), however its modern translation may be incorrect: " *The foundations of the city walls were adorned with all kinds of precious stones. The first foundation was jasper; the second, lapis lazuli... the tenth, heliodorus...*" — **Revelation 21:19-20** In the Book of Revelation, a gem called ***a chrysoprase*** is the twelfth foundation stone, bringing good luck to those born under the twelfth zodiac sign, Capricorn. Contemporary interpretations identify the *chrysoprasos gem* with chrysoprase, the green variety of chalcedony. However, the ancient chrysoprase, *chrysoprasus* in Latin, was a variety of beryl with a golden color, i.e. heliodorus. The equivalent of chrysoprase in the **Book of Exodus** is the *ligurion* , whose identity is probably the most obscure of the 12 gems that adorn the breastplate of the High Priest, Aaron. ***Ligurion*** , whose Hebrew translation was *Leshem* , was a term used to refer to amber, an organic gem that in ancient times was mined in the region now known as **Liguria, in Northern Italy** . This gem was said to be tawny or pale waxy in color. However, the amber was too soft to be inscribed with the name of the related tribe, as was done for all the stones on the priest's breastplate. Thus, *ligurion* must have referred to a gemstone that resembled amber, but was hard and strong enough to be worked with. It may have been the yellowish-green or golden beryl, or heliodorus, that was the gem in question. Chrysoprase was traditionally the **December birthstone in Russia** . This designation originates from the Apocalypse, which mentions a gem called chrysoprason as the tenth foundation stone. This tenth foundation stone has become the birthstone of the tenth zodiac sign, Capricorn, and the month of December, overlapping in part. However, the ancient chrysoprason was a golden-green variety of beryl. In fact, he was referring to heliodorus instead of chalcedony green, which is what the term chrysoprase denotes today. Today's chrysoprase represents a variety of chalcedony with tonal	

	variations from light apple green to deep green. This gem does not match the description of the ancient chrysoprase and would more properly be called prase, lacking the gold element that would have otherwise added the prefix "chryso-" to its name. However, whether today's chrysoprase is the same gem **mentioned in the Apocalypse** is irrelevant. Chrysoprase was considered the **December birthstone in Europe only from the to the 15th century.** Chrysoprase has been known and used for thousands of years by many different cultures. Archaeologists have discovered **an Egyptian necklace** made of this ancient mineral **dated to 1500 BC.** Archaeological sites in ancient Greece and Rome also contained figurines . In ancient times, it was highly prized for its beauty and purported healing properties. Archaeological excavations in ancient Mesoamerican civilizations, such as **the Maya and later the Aztecs** , also reveal that chrysoprase was highly prized and used in their artwork and religious ceremonies. Chrysoprase was used to make beads, figurines, and mosaic inlays, and was also carved into masks and other objects. Chrysoprase commemorates the **18th wedding anniversary** ! **Name:** The term **chalcedony** (generic name of a variety of cryptocrystalline quartz) derives from the Greek Χαλκηδόνιος (Chalkedonios) or Καλχεδόνιος (Calcedonios), Latinized in Calcedonius; is an ethnonym referring to ***Chalcedon*** (since this mineral was extracted in the area surrounding Chalcedon), an ancient city of **Bithynia on the Bosphorus** (means, that is, "inhabitant of Chalcedon"). Today, ancient Chalcedon corresponds to Kadıköy, a district of Istanbul. Calcedonio is also a not very frequent name, but still used in Sicily due to the cult of the saint so called (San Calcedonio, martyr venerated above all in Sicily and Malta), whose name day is celebrated on 7 September. there is also a correlation with the almost coincident Greek term: Χαρκηδόνιος (Charkedonios), which instead denoted an **inhabitant of Carthage** . The **name chrysoprase** comes from the Greek "chrysos" (gold) and "prasos" (grass, leek), referring to its emerald green colour. **Other trade names:.** "green agate", "green amethyst", "prase" and sometimes the stone of spring or even Venus stone. **Variety** : Chrysoprase citrine/lemon (yellowish). Lemon chrysoprase is found in Western Australia. It is a dull pale lime-green color and is actually not a chalcedony at all **but a nickeloan magnesite** .
Attributed properties	The historical significance of chrysoprase has been to **manifest abundance, balance the mind and promote spiritual growth** . By many it is seen, due to its bright colour, as **bringer of joy, wisdom and new beginnings** . It is also believed to be a powerful stone for the heart chakra, **associated with love, compassion and emotional balance.** It is believed to calm, promoting feelings of inner peace and tranquility. Furthermore, it is believed to facilitate self-expression, communication, as well as the encouragement of forgiveness and compassion towards self and others. Historically, chrysoprase was believed to have the power to **cure diseases of the heart, lungs, and eyes** . In ancient Greece and Rome, it was used for jewelry, seals and other decorative items, as it was believed to have the power to protect the wearer **from nightmares and bring good luck** . Chrysoprase is also believed to possess grounding and protective properties and is often used as a talisman to **repel negative energies and evil spirits** . It is believed to be a powerful stone for protection, especially **when travelling** , guarding against accidents and negative energies and helping to ensure safety and security. In recent times, chrysoprase is still used in jewelry making, lapidary work and as a decorative stone. It is also employed as a healing stone, believed to possess grounding and protective properties, and is also used in crystal healing. Chrysoprase was also highly valued **by the ancient Egyptians** and was used to create beads, figurines and mosaic inlays. The **ancient Persians** also believed that chrysoprase had healing powers and that it protected the wearer from evil spirits and brought good luck. The ancient **Greeks** linked **chrysoprase to Aphrodite** , the goddess of love. They claimed that better health and relationships could be manifested by charging the stone under a half moon. **Medieval Romanian legends** claimed that chrysoprase gave the ability to understand the language of reptiles, based on a local legend. Legend has it that a princess owned

	a golden reptile with chrysoprase eyes. A sorcerer told her that if she kept it, she would one day communicate with animals and find wealth. When a famine struck, he tried to feed his people by selling all his joys except the reptile. In her most difficult moment, a real reptile with chrysoprase eyes appeared to her and told her (in reptilian language) to seek help in a river. In fact, the princess discovered a quantity of chrysoprase in Râul Doamnei, enabling her to end the famine and usher in an era of prosperity. **In other nations during the Middle Ages** , this stone was believed to lose color to indicate poisoning. Some believed that chrysoprase granted freedom if held in the mouth after being accused of a crime. In the **19th century** , it became popular as a decorative stone for cameos, snuff boxes and other small items. It was also used for scientific instruments such as microscope plates and bearings for compasses. Its grounding and protective properties, along with its association with emotional balance, self-expression and communication, make it a powerful stone to use in meditation and healing practices. **Today** : Strengthens the liver, **gallbladder, bladder** . Represents the earth element. **Planet:** Mercury **Month:** December, September **Zodiac sign:** Gemini **,** Virgo, Libra **Chakra:** Heart		
Treatments	There are no known treatments for chrysoprase.		
Synthetic counterpart	There is no known synthetic counterpart to chrysoprase.		
Can be confused with	Chrysoprase can be confused with other green minerals, such as hematite, malachite and turquoise. To distinguish it from these minerals, a gemological microscope must be used to analyze the inclusions and refractive index. Sometimes a **grayish type of chalcedony is dipped** in a mixture of water, acid, chromium or nickel compounds, then heated and dried. This will create a green to bluish green material that is sold as chrysoprase. Chromate chalcedony is a green variety of the mineral chalcedony, colored by small amounts of chromium. It is most commonly found in Namibia and Zimbabwe, where it is known as **Mtorolite, Mtorodite, or Matorolite** . It is also marketed under the trade name Aquapraso. Crosoprase can be used **to imitate** more precious gems such as **imperial jade** .		
Indicative gemological tests	**Carefully examine the color** , luster and internal inclusions of the chrysoprase. This stone features a distinctive apple green hue and may contain inclusions of other minerals. Imitations may have different colors or have non-characteristic inclusions. Place the chrysoprase sample over a light source to check if light is passing through the stone. Natural chrysoprase is translucent and allows light to pass through, while imitations may be opaque. Hardness testing only as a last resort (it is potentially destructive) using an awl or needle of different materials. Chrysoprase has a hardness of 6.5-7 on the Mohs scale, so it shouldn't scratch easily. Softer imitations may suffer visible scratches. **Measuring the specific density** of chrysoprase can help identify it correctly. Chrysoprase has a typical density of about 2.6-2.7 g/cm³. Significant differences from this range may indicate different materials. Use a **refractometer** to measure the refractive index of the chrysoprase. This can help distinguish the stone from possible imitations with different refractive indices. Subject the chrysoprase to **ultraviolet light** to verify its fluorescence reaction. Natural chrysoprase may have weak fluorescence, while imitations may react differently or have no fluorescence at all. Observe the stone under **direct light** and at different angles to evaluate its brightness. Natural chrysoprase may have an internal brightness due to its translucency, while imitations may appear less bright. It is important to note that some gemological tests may require special equipment and specific skills. For an accurate evaluation, it is advisable to consult a professional gemologist or a qualified gemological laboratory.		
Value (2021)	**High:** $100/ct **under the carat**	**Medium:** $20/ct **1-3 carats**	**Low:** $2/ct **3 carats+**
Typical cut	The most popular denominations for chrysoprase are **briole/drop and trillion** . However, most chrysoprase is cut into **pearls, cabochons or polished stones** . The durability of		

	chrysoprase lends itself well to various carving techniques. The chrysoprase **carvings include cameos and figurines** .
Famous stones	The "Chrysoprase of Russia" stone, which is a **12.5-carat stone** originally from Russia. The "Chrysoprase of Australia" stone, which is a **10 carat stone** native to Australia. **8-carat** stone originally from Brazil.
Record stones	The largest known chrysoprase stone weighs 1,200 carats. One of the largest historical chrysoprase carvings was a **2nd-century cameo of the Greek god Jupiter** . The most expensive known chrysoprase stone sold for US$100,000 per carat.