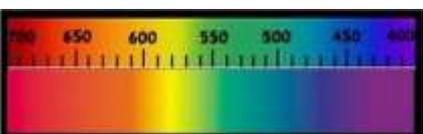


Warning: this version has been completed with Google Translate , it certainly contains errors or inaccuracies.

Technical sheet - general: **Heliodor**

Gemma - names	(Italian - Eliodoro) (English - Heliodor) (French - Héliodore) (Spanish - Heliodor) (Portuguese - Heliodor) (Thai - เฮลิโอดอร์ elixodxr)	(German - Heliodor) (Arabic - هيليودور hylywdwr) (Russian - Гелиодор Geliodor) (Mandarin - 赫利奥多尔 heliàoduōr) (Swahili - Heliodor) (Hindi - हेलियोडोर heliyodor)	photo 
Colors (GIA)	Small traces of iron and a touch of uranium are enough to give a colorless beryl a yellow hue more or less intense. Golden beryl captivates with its range of yellow shades , from a faint lemon yellow to a warm golden color . Iron and uranium together are also responsible for the greenish yellow of heliodor .		
Cause of Color	The golden yellow color is attributed to Fe ³⁺ ions . The yellow component of the coloring is attributed to the intense O ₂ ⁻ → Fe ³⁺ charge transfer bands seen as the absorption edge in the wavelength part of the visible light spectrum range. The greenish colors of ferrous beryls are usually due to the mixture of color centers, which cause the blue color in aquamarines (Al Fe ²⁺ and Fe ²⁺ / Fe ³⁺) and those responsible for the intense absorption edge at length of short wave that causes the yellow and golden colors of heliodor. Allochromatic gem		
Classification	Mineral class Cyclosilicates	Species - Group (mineral) Beryls - /	Variety Heliodor
Optical properties	Specific Gravity: 2.68-2.80 Municipality: 2.72	RI: 1,566-1,579 Polariscope : DR Double refraction: 0.005-0.009	optical Character uniaxial negative
	Luster (luster) - luster of the fracture Vitreo - Vitreo		Pleochroism Weak: golden yellow, green yellow
Light	Fluorescence SWUV (254 nm) : Inert LWUV (365nm) : inert		Dispersion (fire) 0.014
Form	Crystalline dress Melting point: 2500 ° C	Phenomenal optical effects Gattitude (due to gahnite needles , a member of the zinc-rich spinel group with the general formula ZnAl ₂ O ₄ .	Crystalline system Hexagonal Crystal class
	Chemical formula	Aluminum silicate and beryllium Be₃Al₂(SiO₃)₆ + Fe³⁺ with trace elements such as Cr, V, Fe, Mn, etc.	Spectrometer image  Absorption spectrum not indicative
Fracture	Flaking Indistinct	Breaking- Parting Rare - baseline	Fracture Concoidal
Durability	Hardness (Mohs) - Absolute 7.5-8; 150 - 200	Toughness Buana to fragile	Stability (heat, light, chemicals) Good-stable
Clarity - characteristics	Typical Inclusions: Planes of tiny 2-phase inclusions, long and hollow tubes, needles, fingerprints, crystals (tourmaline etc.), negative crystals, chrysanthemums (in the shape of snowflakes). Rare heliodor specimens contain a "silk" of tiny , straight, parallel, needle-shaped inclusions of ghanite . When these gemstones are cut into <i>cabochons</i> with the <i>silk</i> oriented parallel to 		

	the flat bottom of the stone, the dome of the stone will exhibit a phenomenon known as cat's eye or cat's eye.	
	Type I. Typically free of inclusions	Transparency (commercial) - transparency Transparent to translucent
Deposits - types of rocks	It is often found in granite pegmatites and alluvial gravel deposits. Geological age : 35+ million years ago	
Characteristics of rough stones	Crystals tend to be hexagonal, with a flat or pointed top like a prism.	
Main deposits	Afghanistan , Kunar , Brazil , Minas Gerais, Espirito Santo, Madagascar , Amoron'i , Sava, Vakinankaratra , Mozambique , Zambezia Province , Myanmar , Mandalay Region, Pyin-Oo-Lwin District , Shan State, Namibia , Erongo Region , Nigeria , Nasarawa , Russia , Sverdlovsk Oblast , Sri Lanka , Sabaragamuwa Province , Northeastern Tajikistan Tian Shan Range, Ukraine , Zhytomyr Oblast, USA , Connecticut, Maine, New Hampshire, Zimbabwe , Mashona and West	
Year of discovery	Antique / 1910: Heliodorus is a golden yellow stone first discovered in Rossing , Erongo , western Namibia in 1910.	
History	<p>This stone appears, like many others, in the Bible (or at least in its modern translations): <i>" 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, heliodor ... "</i> - Revelation 21: 19-20</p> <p>In the Book of Revelation, a gem called chrysoprase is the twelfth foundation stone, which brings good luck to those born under the twelfth zodiac sign, Capricorn. Contemporary interpretations identify the chrysoprasos gem <i>with</i> chrysoprase, the green variety of chalcedony. However, the ancient chrysoprase, <i>crisoprasus</i> in Latin, was a golden-colored variety of beryl, that is, heliodor. The equivalent of chrysoprase in the Book of Exodus is the <i>ligurion</i> , whose identity is probably the darkest of the 12 gems that adorn the breastplate of the High Priest, Aaron. Ligurion , whose Hebrew translation was <i>Leshem</i> was a term used to indicate amber, an organic gem that in ancient times was extracted 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 engraved with the name of the relative tribe, as was done for all the stones on the priestly breastplate. Thus, the <i>ligurion</i> had to refer to a precious stone that resembled amber, but was hard enough and resistant to be worked on. It could have been yellowish green or golden beryl, or heliodor, to be the gem in question.</p> <p>Heliodor is a form of beryl and is actually the brightest form of all the types belonging to this species. In fact, heliodorus has always been linked to the sun. Initially, only the golden beryl found in Namibia was called heliodor , but today the name is applied almost indiscriminately to all the different varieties of yellow and golden beryl. According to a well-known gemological reference (Walter Schumann, Gemstones of the World, first published in 1976), the term heliodor refers to the light yellow-green color of beryl . However, Schumann goes on to note that <i>" since there is no clear distinction in tones between yellow-green and yellow or golden yellow, the term "heliodor" encompasses the range of beryls of all shades of yellow, regardless of whether they are golden or pale yellow . "</i></p> <p>Yellow beryl was discovered in Africa, in the region of Namibia, in 1910, during the extraction of aquamarine, also a type of beryl. The company that found the new mineral called it " <i>Heliodor</i> ". In 1914 , for William II, the last German Kaiser / emperor, a splendid ring with gold beryl was made . But the popularity of the new find never came, the First World War intervened and everyone forgot about this precious stone. Before 1925 , beryl (in general) was used only as a precious stone . Subsequently, many important uses were found also on an industrial level. However, there are no large deposits and much of the production is a by- product of the extraction of feldspar and mica or other precious stones.</p> <p>First name: Heliodorus : from the Greek Ἡλιόδωρος (Heliodoros), composed of the name of Helium. the titan of the sun (in Greek Ἡλιος , Hélios , "sun), combined with δῶρον (dôron , " gift "); a theophoric word, meaning " gift of Helium "or" gift of the Sun ".</p> <p>Beryl : the name "beryl" seems to originate in India, in particular it derives from the Sanskrit word 'veruliyam ' , an ancient term used to indicate chrysoberyl (a different gem), from</p>	

	<p>which the Greek word 'beryllos' later developed (βήρυλλος), then passed to the Latin beryllus .</p> <p>Other trade names: Golden Beryl / Golden Beryl, Golden Beryl, Golden / Yellow Emerald (The name "yellow / golden emerald" is a misnomer. Misnames are misspelled names that are sometimes misleading), Yellow Beryl .</p> <p>Variety : golden beryl</p>		
Property attributed	<p>In his <i>Historia Naturalis</i> (1st century AD), Pliny the Elder stated that powdered beryl could heal eye injuries.</p> <p>There is a number of legends, stories and relics related to this stone. According to these beliefs, its most important property is that it shares with other members of the beryl family (aquamarine, emerald), that is, that of protecting . In particular, heliodor creates a shield of spiritual defense from evil spirits, evil people and self-destructive thoughts. It also helps to make healthy and rational decisions for the benefit of oneself and others.</p> <p>Due to its color, heliodor is considered a pious stone . It is also called the Gem of Hope , due to its effects in easing despair and despair. It brings a feeling of renewed positivity to the wearer.</p> <p>It is believed to be an excellent stone for meditation and strengthens the capacity for intuition and foresight. Some people also claim that it increases luck. The same people believe that it brings physical and mental prosperity , increasing a balance between happiness and creative energy.</p> <p>It is the gem of the 19th wedding anniversary .</p> <p>Planet: Jupiter, Moon, Mars</p> <p>Month: March (official) Zodiac signs: Aries, Gemini, Pisces</p> <p>Chakra: Throat, (Heart)</p>		
Treatments	<p>Color can be enhanced by heat treatment or created by irradiation of colorless varieties. The iron contained in the heliodor can be altered by the heat treatment. Low temperature heating sometimes enhances the yellow color of the stone. In some cases, further heating will turn the yellow heliodor into a greenish blue to blue material. If the color is appropriate, this material will be sold as heat treated aquamarine . This type of intervention is often used in gems from Ukraine. Generally, aquamarine has a higher value than heliodor, with the same color intensity. The color of yellow heliodor can also be improved by irradiation and is a fairly common intervention on the market. In fact, the irradiated aquamarines can also be transformed into heliodors. Vietnam's clear aquamarines could reportedly receive radiation treatment in Laos, only to be returned to Vietnam and sold as natural heliodors. Some controversy surrounds the so-called Zelatoya Vada heliodors in Tajikistan, which according to some analyzes, could actually be pale Pakistani aquamarines or Chinese beryls. Furthermore, he was unable to locate the alleged source of these stones in the camp. These heliodors could simply be very pale treated aquamarines and / or colorless beryls (goscenites).</p> <p>when heated up to 400 ° C, the yellow beryl crystals became colorless .</p>		
Synthetic counterpart	<p>Synthetic heliodorine can be obtained - in a currently uneconomical way - by means of the solution processes using flux and hydrothermal method . Hydrothermally grown synthetic heliodor slowly crystallizes from a solution (a mixture of water and dissolved elements) that has been exposed to heat and pressure similar to the conditions on Earth in which the natural gem mineral grows.</p>		
It can be confused with	<p>Topaz (separation by: RI, SG, inclusions), glass (separation by: optical character), synthetic spinel (separation by: optical character, RI, SG), synthetic quartz (separation by: optical figure, RI), petalite (separation via: optical figure, RI, SG), blue apatite (separation by: SG, RI fluorescence), blue zircon (separation by: SG, RI, birefringence)</p>		
Indicative gemological tests	<p>Different tests reveal the different characteristics between aquamarines and potential simulants, so all possible types of anal must be considered: visual aspect, microscope examination, polariscope, dichroscope, refractometer, <i>Chelsea filter</i> , UV light, etc.</p>		
Value (2021)	High : 1500+ \$ / ct 3 carat +	Medium: 200-700 \$ / ct 1-3 carats	Low: \$ 5 / ct below the carat
Typical cut	<p>Golden beryls work well with rectangular or square stepped cuts , as a clear design is required to bring out the sheer beauty and often subdued color of these gems to the maximum. The usual calibrated and traditional cuts are also often applied such as those with round brilliant, pear, oval, emerald, cushion and many others. Large clear heliodor</p>		

	crystals are sometimes carved into ornamental figures , while the perfect, clear six-sided raw ones are occasionally worn uncut into pendants.
Famous stones	<p>In a photo shoot for the American Gem Trade Association (AGTA), actress Robinson Peete , who starred in the hit film "21 Jump Street" and the television series "Chicago Fire ", appeared adorned with spectacular jewelry designed by the AGTA in 2016. Among them was also a creation by, Ricardo Basta, E. Eichberg , a ring called " Miele / Honey " featuring a large heliodor accented with sapphires and diamonds. The piece won in the category "Business / Day Wear ". (jewelry to wear every day or for business).</p> <p>A modern reproduction of a 10th century necklace by Paul Binder features a pendant with fancy-cut heliodor and brilliant-cut diamonds.</p> <p>In 1914 , for William II, the last German emperor, a splendid ring with gold beryl was made . But the popularity of the new find never came, the First World War intervened and everyone forgot about this precious stone.</p> <p>A 122.33 ct turtle figurine, sculpted from a single piece of Ukrainian origin heliodor by Hans Ulrich Pauly .</p> <p>There is an 82.25-carat specimen at the British Museum of Natural History, London, England, a 77.8-carat specimen at the Royal Ontario Museum in Toronto, Canada and various specimens (2,054, 133.5, 43.5 and 17.5 carats) at the Smithsonian Institution in Washington, DC, in the United States.</p>
Record stones	<p>The largest faceted heliodor weighs 5,900 carats (1.18 kg) and is owned by the Medici Collection , LLC (USA), of tycoon Dion Tulk .</p> <p>A large faceted 2,054-carat golden beryl is on display at the Smithsonian Institution in Washington DC.</p>