
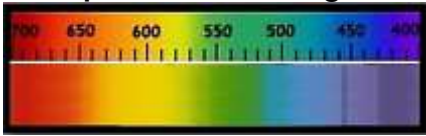
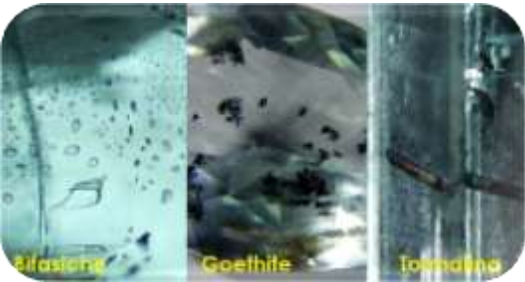


Warning: this version has been completed with Google Translate , it certainly contains errors or inaccuracies.

Technical sheet - general: **Aquamarine**

Gemma - names	(Italian - Aquamarine) (English - Aquamarine) (French - Aquamarine) (Spanish - aguamarina) (Portuguese - Aquamarine) (Thai - อความารีน xakhwāmārīn)	(German - Aquamarin) (Arabic - زبرجد zabarjīd) (Russian - Аквамарин Akvamarin) (Mandarin - 藍晶 lán jī ng) (Swahili - Aquamarine) (Hindi - अकामरीन akvaamareen)	photo 
Colors (GIA)	Slight shade of spring green (green-blue) , between cyan and blue - green on the color wheel.		
Cause of Color	Light blue, Fe ²⁺ in the canals of the structure. Darker blue, Fe ²⁺ - O-Fe ³⁺ interval charge transfer. Allochromatic gem		
Classification	Mineral class Cyclosilicates	Species - Group (mineral) Beryls - /	Variety Aquamarine
Optical properties	Specific Gravity: 2.68-2.80 Municipality: 2.72	RE: 1,564-1,596 Polariscope : DR Double refraction: - 0.005-0.009	Character optical Negative uniaxial
	Luster (luster) - luster of the fracture Vitreo - Vitreo		Pleochroism Distinct dichroism (light-dark blue) depending on the depth of the color.
Light	Fluorescence SWUV (254 nm) : inert LWUV (365nm) : inert		Dispersion (fire) 0.014
Form	Crystalline dress Long prismatic crystals, occasional vertical streaks, with growth figures and engravings on the faces of the prism. Melting point: 2500 ° C	Phenomenal optical effects Attitude	Phosphorescence NO
Chemical formula	Aluminum silicate and beryllium Be₃Al₂(SiO₃)₆; with trace elements such as Cr, V, Fe, Mn, etc.		Spectrometer image  Spectrum not pronounced
Fracture	Flaking Poor-imperfect cleavage along the basal plane	Breaking- Parting Rare- basal	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: Solid inclusions are quartz, muscovite, garnet (spessartine, almandine), tourmaline (Schorl ?), Apatite and less often epidote, tantalum-columbite, cassiterite and hematite. The gas-liquid inclusions are concentrated as veils and thin tubular channels parallel to the long axis of the crystal. There are also gas and multiphase inclusions with halite, sylvite, muscovite and other minerals, which can occupy 30 to 40% of the vacuole volume , Common tubular inclusions 		

	parallel to the optical axis, healing cracks, hollow tubes, biphasic inclusions, mica .	
	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 , Badakhshan, Kunar , Nangarhar , Brazil , Bahia, Minas Gerais, Paraíba, Rio Grande do Norte , Canada , British Columbia, Yukon, China , Sichuan, Xinjiang, Yunnan, Finland , South Karelia, India , Tamil Nadu , Kazakhstan, Karaganda Region, Kenya , Embu County , Madagascar , Amoron'i, Sava, Vakinankaratra , Mozambique , Zambezia Province , Myanmar , Mandalay Region, Pyin-Oo-Lwin District , Shan State, Namibia , Erongo Region , Nepa, Nigeria , Kaduna, Nasarawa , Plateau, Pakistan , Gilgit-Baltistan , Goshawk District, Khyber Province Pakhtunkhwa , Russia , Sverdlovsk Oblast , Zabaykalsky Region, Nerchinsky District , Sri Lanka , Sabaragamuwa Province , Tajikistan , Gorno-Badakhshan, Ukraine , Zhytomyr Oblast, USA , California, Colorado, Maine, New Hampshire, North Carolina, Utah, Vietnam , Yên Province Bai , Zambia , Eastern Province, Zimbabwe , East Mashonaland , Mashona and West	
Year of discovery	About 400 BC: The earliest documented use of this mineral dates back to 400 BC in Greece, but it has been used in multiple societies for over 2000 years	
History	<p>The attributes of aquamarine were first recorded by Damigeron in the 2nd century BC. "This stone is also good for eye injuries and any disease if it is placed in water and given as a drink. Roman fishermen called the gem "sea water" and used it as protection, to travel safely by boat and luckily in catching fish. Acquamarina was linked to the apostle St. Thomas who often traveled by boat.</p> <p>The Sumerians, Egyptians, Jews and Greeks all admired the precious stones of aquamarine. Pearls were discovered with Egyptian mummies. And the High Priest of the Second Temple was believed to wear aquamarine stones engraved with the six tribes of Israel.</p> <p>The ancient writer Pliny paid homage to this gem of vitality, stating that "the beautiful aquamarine, which seemed to come from the treasure of a mermaid, in the depths of a summer sea, had a charm not to be denied". Two thousand years ago, Greek artisans engraved designs in aquamarine stones, turning them into carvings. The specific term "aquamarine" would have been used in an important gemological work by Anselmus de Boodt in his <i>Gemmarum et Lapidum Historiia</i> , published in 1609 . Aquamarine was also a precious gem of ancient lineage. In the 19th century, varieties with shades more towards sea green were the most popular, but today, the more blue the color, the more precious the stone.</p> <p>In the 19th century, the favorite color of aquamarine was sea green, in fact the name itself means sea water. Today the most popular colors are light blue and dark blue.</p> <p>Name : Aquamarine (from the Latin: <i>aqua marina</i> , "sea water") is so called due to its color similar to that of the sea.</p> <p>Other trade names:</p> <p>Variety : Brazilian aquamarine : bluish green. Also a misnomer for bluish green topaz.</p> <p>Aquamarine from Madagascar : fine, medium blue.</p> <p>Maxixe Beryl : A deeper blue variety originally called Maxixe from the name of the Maxixe mine in Brazil where it was found, is better called Blue Beryl. Sometimes confused with aquamarine. It is vivid blue beryl, but known to fade on exposure to bright light. Also called <i>halbanite</i> .</p> <p>Aquamarine Santa Maria : medium-dark tone and very saturated blue color.</p> <p>It should not be assumed that the gems labeled "Brazilian" or "Madagascar" actually come from these sources. These terms may refer only to color, so ask to see documentation to certify the origin of a gem. The "Santa Maria" aquamarines are named after the Santa Maria de Itabira mine where they were first discovered, but stones with similar colors have also been found in other locations.</p>	

<p>Property attributed</p>	<p>Legend has it that the aquamarine originated in the caskets of the fabulous mermaids. For centuries the aquamarine has been the constant companion of sailors, their protection against the wrath of the sea. Roman doctors also used it to treat overeating and bloating. The Romans believed that if the figure of a frog was carved out of an aquamarine, it would serve to reconcile enemies and make them friends. Another Roman legend stated that the stone absorbs the atmosphere of young love: "When it is blessed and worn, it joins in love and does great things". Aquamarine was also considered the most appropriate morning gift to give to a bride by her groom after the consummation of their marriage. Greeks and Romans knew aquamarine as a sailor's gem, ensuring safe and prosperous passage across stormy seas. In medieval times, the stone was thought to awaken the love of married couples. It was also believed to make soldiers invincible. It was a symbol of happiness and eternal youth. The Natural History of Pliny the Elder also lists the stone as an excellent cure for eye diseases. The eye had to be washed in water in which an aquamarine was immersed. To cure severe eye ailments, it was recommended to put the gem powder in the eye every morning. The ancient Romans believed that aquamarine would be useful for treating diseases of the stomach, liver, jaws and throat.</p> <p>In Christian times the aquamarine was identified with the Apostle, St. Thomas , because "it imitated the sea and the air" and the Saint "made long journeys by sea, as far as India , to preach salvation". Identifying a certain jewel with one of the twelve apostles was a common practice at the time . . . Medieval writers argued that aquamarine was the most popular and effective of the "oracle" crystals. When cut like a crystal ball, it was thought to be a superior stone for predicting the future. In ancient literature, many methods have been described for using stone as a diviner tool. One method involved hanging a stone with a thread over a bowl of water, barely touching its surface. The inside edge of the bowl was covered with the characters of the alphabet. The soothsayer had to hold the top of the thread and allow the stone to hit certain letters, which would provide the answers to an important question, some kind of ouija board . Another method was to throw a crystal into a bowl of pure water. Disturbances in the water would reveal messages on the surface of the liquid. Aquamarine's powers of revelation were also said to help search for lost or hidden things. <i>The Vision Concerning Piers and the Plowman</i> by William Langland , from 1377 , mentions aquamarine as an antidote for poison. This antidote was widely known throughout Europe. Since there was a great deal of poisoning among royalty at the time, the gem was in great demand for just that purpose. It was not necessary to pulverize the stone, as it was / is with other precious stones. Simply wearing the stone as a pendant or in a ring was just as effective</p> <p>Today, modern healers believe that the aquamarine stone aids in fluid retention , a further association with the aquamarine aspects of aquamarine. They also believe that the stone will help deal with glandular ailments , as well as help maintain eye health , as ancient healers believed. Some consider it the specific stone for treating most of the afflictions associated with the oral cavity. It is associated with the charka of the throat, including the faculties of speech and song , a quality perhaps associated with the therapeutic value of color rather than with the actual composition of the stone.</p> <p>This very important connection allows to speak constantly from the heart and to the highest truths. This variety of beryl is a perfect stone to help you resolve conflicts, arguments and disagreements. Aquamarine can also help you refresh those fiery emotions that wish to reach us. The water element shines brightly in this stone and prompts us to peel off a layer of ourselves to allow that inner being to shine. Additionally, Aquamarine is here to help you constantly refresh your emotions and provide mental clarity . There are times when your heart will be completely open and clear, but your mind may still tend to be foggy. Aquamarine supports us in wisdom, in intellect, in knowledge, in the enhancement of ideas and in the clarity of the mind. When the open heart and clear mind are able to work in sync, the opportunities and relationships will become endless.</p> <p>It is the gem of the 19th wedding anniversary . Planet: Moon Month: March (official) Zodiac signs: Aries, Gemini, Pisces Chakra: Throat, (Heart)</p>
<p>Treatments</p>	<p>The pure blue of aquamarine is the most prized and, as such, a heat treatment is often applied to enhance its color. After applying gentle heat for several hours, the previously greenish gem becomes the pure pastel blue typical of the gem in today's market. The</p>

	<p>result is permanent and widely accepted in the jewelry industry, not least because it is very difficult, if not impossible, to detect.</p> <p>The lower grades are heated to 400-450 degrees C to change from blue green-green to the desired aquamarine blue. Higher heat will lead to discoloration. Colors can also be enhanced with neutron and gamma irradiation , but these changes don't last.</p>		
Synthetic counterpart	Synthetic aquaraine can be obtained - but it is uneconomical - by means of the flux and hydrothermal solution processes (not commercially available).		
It can be confused with	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, birigrangence)		
Indicative gemological tests	Different tests reveal the different characteristics between aquamarines and potential simulants, so all possible types of anal must be taken into consideration: visual aspect, microscope examination, polariscope, dichroscope, refractometer, chelsea filter , UV light, etc.		
Value (2021)	High : 1500+ \$ / ct 3 carat +	Medium : 500-700 \$ / ct 1-3 carats	Low : \$ 100 / ct below the carat
Typical cut	<p>Aquamarine is often cut with the facet of the table parallel to the length of the crystal to emphasize the deeper coloring .</p> <p>Since aquamarines are available in large sizes, there is no incremental increase in the price per carat for large gems. In fact, aquamarines cut over 25 carats will have a lower price per carat than smaller stones of the same quality. Fitting and putting on stones of that size can be difficult, so there is less demand for them.</p>		
Famous stones	<p>British Museum (Natural History) (London England): 67.35 carats (blue) and 60.90 carats (greenish); 879 carats (sea green, oval).</p> <p>American Museum of Natural History (New York): 272, 215 and 160 carats; also 355 carat (Sri Lanka), 144.5 carat (Brazil).</p> <p>Hyde Park Museum, New York: 1847 carat .</p> <p>Smithsonian Institution (Washington, DC): 1,000 carats (blue-green, fine color, Brazil); 911 carat (blue, Brazil); also 263.5 carats (blue, Russia); 71.2 carats (blue, Sri Lanka); 66.3 carat (blue-green, Maine); 20.7 carats (light blue, Madagascar); 15.3 carat (blue-green, Idaho); 14.3 carat (blue, Connecticut).</p>		
Record stones	<p>A blue-green crystal was found in Marambia , Teofilo Otoni, Brazil. This irregular prism, transparent from end to end, measured 48 cm in length and 40 cm in diameter and weighed almost 100 kg .</p> <p>The famous aquamarine Martha Rocha, found in Brazil, weighed 37.7 and produced more than 57,200 carats of superb blue gems. An even larger crystal found in 1910 weighed 104 kg but produced only 200,000 carats of cut gemstones. \</p> <p>Other phenomenal stones were: a gem called <i>Urubu</i> , with a weight of 33.2 kg , the Jacueto with a weight of 19 kg .</p> <p>The Smithsonian Institutions houses the largest cut aquamarine in the world, the Dom Pedro, a carved obelisk of 10,363 ct .</p>		