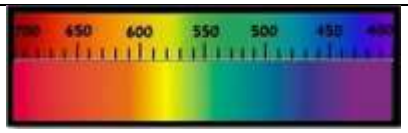
Warning: this version has been completed with Google Translate, it certainly contains errors or inaccuracies.

Technical sheet - general: Blue beryl (maxixe)

<table>
<tr><td>Gemma - names</td><td>(Italian - Maxixe)
(English - Maxixe)
(French - Maxixe)
(Spanish - Maxixe)
(Portuguese - Maxixe)
(Thai - บ ลู เบริล Bl ū beril)
(German - Maxixe)
(Swahili - Maxixe beryl)</td><td>(Arabic - M axixe البريل Maxixe albril)
(Russian - Максикс берилл Maksiks berill)
(Mandarin - 蓝 绿柱石 Lán lǜ zhùshí)
(Hindi - मैक्सिक्स बेरिल maiksiks beril)</td><td>photo
  </td></tr>
<tr><td>Colors (GIA)</td><td colspan="3">Beryl maxixe is a photosensitive (light reacting) pleochroic variety containing 2.8% Cs_2O and 1% Li_2O, however the color is caused by centers of the chromophore $[CO_3]^-$. The typical chromatic range goes from indigo , cornflower blue to darker shades with even vivid saturation . There are also rare purple specimens (this color is due to irradiation).</td></tr>
<tr><td>Cause of Color</td><td colspan="3">beryl and maxixe type beryl are the same stone. The distinction in nomenclature originates in the origin of the gem (maxixe only if it derives from the homologous locality in Brazil). In both cases, the term blue beryl is preferred by many gemological laboratories . The blue color of Maxixe-type beryl is carried by an ordinary ray of radiation , while that of aquamarine is carried by an extraordinary ray. Both Maxixe-type and Maxixe-type beryls exhibit pleochroic behavior with the dominant blue color parallel to the c-axis (i.e. along the o-ray), which is the opposite of natural aquamarine and hydrothermally grown synthetics In 1976, when the first specimens were examined, these new beryls were cataloged as the Maxixe type because their optical absorption spectra contained similar, but slightly different, absorption bands to those of the rare Brazilian material. The center of the blue color in Maxixe-type beryl is created by irradiation, while the center of the Maxixe color is of natural origin . They normally have a dichroism opposite to that of aquamarine. There are different possibilities of creating the CO_3 and NO_3 radicals in beryl, which lead the gem to have a greater and different vividness of blue compared to that of aquamarine. One possibility is that CO_3^{2-} and NO_3^- ions exist in the original fusion and are trapped in the channels of the beryl crystal during its formation. An electron can be removed from each of these ions by irradiation to create CO_3^- and NO_3. The released electron can be captured by the proton of an impurity to form a hydrogen atom.
The color of both Maxixe beryl and Maxixe-type beryl disappears when the crystals are exposed to daylight for 24-32 hours or heated to 200 ° C for one hour .</td></tr>
<tr><td>Classification</td><td>Mineral class
Cyclosilicates</td><td>Species - Group (mineral)
Beryls - /</td><td>Variety
Blue (Maxixe)</td></tr>
<tr><td>Optical properties</td><td>Specific Gravity:
2.65-2.90
Municipality: 2.80</td><td>RI: 1,578 to 1,595
Polariscope : DR
Double refraction: - 0.003-0.013 (0.006-0.009 common)</td><td>Character optical
Negative uniaxial</td><td>Pleochroism
Strong dichroism: blue to colorless.</td></tr>
<tr><td></td><td colspan="2">Luster (luster) - luster of the fracture
Vitreo - Vietreo</td><td colspan="2">Dispersion (fire)
0.014</td></tr>
<tr><td>Light</td><td colspan="2">Fluorescence
SWUV (254 nm) : Inert (maxixe), mod. yellowish green (type M)
LWUV (365nm) : inert (maxixe) ,, strong: green (type M)</td><td colspan="2">Phosphorescence
NO</td></tr>
<tr><td>Form</td><td>Crystalline dress
Prismatic
Melting point: 2500 ° C</td><td>Phenomenal optical effects
NO</td><td colspan="2">Crystalline system
Hexagonal, dimetric
Crystal class</td></tr>
<tr><td>Chemical formula</td><td colspan="2">Aluminum silicate and beryllium</td><td colspan="2">Spectrometer image</td></tr>
</table>

	$Be_3Al_2(SiO_3)_6$;	 Non-indicative spectrum	
Fracture	**Flaking** Baseline (weak) 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:** Typically a transparent gem; most of the specimens that appear clean on visual examination, with no visible inclusions. There are cloudy or even opaque crystals, but these varieties are not used in jewelry. Typical inclusions of beryls such as fuchsite, rutile and other minerals are sometimes visible only in the raw crystals. Maxixe-type beryl exhibits a wide variety of internal characteristics indicative of their natural origin: single-phase and multiphase fluid inclusions, various types of healed fractures, crystalline inclusions and growth tubes, as well as straight and angular internal growth structures. Non-healed fractures were also observed. 		
	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	Forms prismatic or vertically striated crystals, Beryl maxixe forms elongated prismatic crystals, sometimes ending in small pyramidal facets with shapes that tend to be hexagonal, with a flat or pointed top like a prism and crystallizes in a hexagonal singonia. Its accompanying minerals are quartz, microcline, spodumene, albite, muscovite, topaz, sherl, magnetite, hematite.		
Main deposits	**Only known source:** **Brazil** (Minas Gerais, Itinga, Taquaral, Piauí valley).		
Year of discovery	**1917:** Since its discovery in 1917, it has come only from the Maxixe Mine in Minas Gerais. The chemically defined version continues to be exclusive to Brazil, however, more recently beryl from multiple sources has been sold as "Maxixe", which has led gemological laboratories to prefer the use of the terms "Blue Beryl / Blue Beryl. "or" Maxixe-type beryl / Beryl type Maxixe ". Since the 1970s it has been more widely available and **improved through irradiation** , but the color fades after prolonged exposure to light or heat, although this process is much slower when the stone is exposed to internal lighting.		
History	Maxixe is a variety of beryl (aquamarine) that has a **bright dark blue color that gradually fades to a yellow-brown color** in daylight . This change dramatically decreases its value. The first crystals, discovered in the early twentieth century, came only from Minas Gerais, in Brazil. A few decades after the first findings, a beryl with similar characteristics, from multiple sources, sold as "Maxixe", which has led many in gemological circles to prefer the use of the terms " **blue beryl" or "maxixe-type beryl"** (a bit like what happens with the paraiba tourmaline, since it no longer comes only from the place where it was initially discovered). Maxixe beryl was first described in the scientific literature by Wild (**1933**), who claimed that the crystal had been found 15 years earlier in the Maxixe mine. This beryl had a deep blue color, which faded when the crystal was kept for many days in daylight. Detailed investigations on this gem **were published, in 1935, by Schlossmacher / Klang and by Roebling / Tromnau** . **Since the 1970s** it has become more widely available as it has improved through irradiation; unfortunately the color fades after prolonged exposure to light or heat although it is slower with internal lighting even in the treated stones. The first **beryls of the Maxixe type,** of an intense blue color, appeared in the precious market around **1973** , but the initial enthusiasm for these beautiful stones turned into disappointment when it was discovered that their color faded even after prolonged		

	exposure in daylight in shop windows. In 1976, some scholars discovered that the dichroism of the maxixe is opposite to that of the aquamarine. They named these new beryls Maxixe-type beryls because their optical absorption spectra contained similar, but slightly different, absorption bands to those of the rare Brazilian beryl Maxixe. **Name :** The name comes from the location in the Brazilian state where this gem was first found. The mome itself, however, **refers to a type** of Brazilian dance for couples, now out of fashion, reminiscent of polka and tango. **Other trade names:** Maxaxite, maxixe-aquamarine, beryl maxixe, beryl type maxixe, blue beryl. **Variety** : /		
Properties attributed	The properties attributed to Maxixe are mostly related to the color of the gem, given its scarce presence in the world of precious stones (and consequently also in crystal therapy), It is said that it is useful to give the wearer greater self-confidence /to. Since time immemorial, blue beryl crystals (aquamarine and also, more recently, maxixe) are believed to heal afflictions in humans and contribute to the healing of chronic ailments. **Planet:** NA **Month:** NA **Zodiac signs:** NA **Chakra:** NA		
Treatments	Irradiation (see above)		
Synthetic counterpart	Like aquamarine and other beryls, Maxixe-type (irradiated) beryl also exists in a synthetic-hydrothermally grown version and is currently available on the market. In the case of the maxixe, being a little known gem, its presence on the market and its quality of discoloration when exposed to intense light is relatively rare. The synthetic component sometimes has a greyish color instead of a purple secondary tint. Synthetic stones often exhibit an inert reaction to UV rays (fluorescence).		
It can be confused with	The color of beryl maxixe (or type maxixe) is sometimes so vivid that it is compared to a sapphire (even of top characteristics). In some cases it can be mistaken for aquamarine. The color of Maxixe-type beryl is significantly more intense than that typically associated with aquamarine and often has a slightly purple modifier.		
Indicative gemological tests	Its use in jewelry is so limited that it is difficult that it does not generally pose identification problems. Its characteristics are however aligned with those of the other beryls. RI, birefringence, SG and aspect are typically sufficient to separate it from possible imitations.		
Value (2021)	**High :** 1000 + $ / ct **3 carat +**	**Medium: $** 100 / ct **1-3 carats**	**Low:** $ 5 / ct **below the carat**
Typical cut	Generally multifaceted.		
Famous stones	There is no news of famous jewels adorned with this stone.		
Record stones	There is no news about particularly large crystals (but there are examples that well exceed 100 carats) or expensive.		