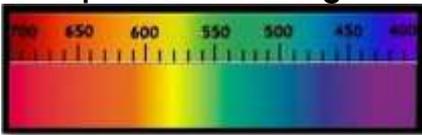


**Warning: this version has been completed with Google Translate , it certainly contains errors or inaccuracies.**

## Technical sheet - general: **O p a l e**

<b>Gemma - names</b>	( Italian - Opal) ( English - opal ) ( French -opal) ( Spanish - Ópalo ) ( Portuguese - opala ) ( Thai - โอปอล ฝ่ xo pxl ' )	( German - Opal ) ( Arabic - أوبال awbal ) ( Russian - Опал Opal ) ( Mandarin - 蛋白石 gives nb á ish í ) ( Swahili - Opal ) ( Hindi - दूधिया पत्थर doodhiya patthar )	<p style="text-align: center;"><b>photo</b></p> 	
<b>Colors (GIA)</b>	<p>The <i>Opal Body Tone Guide</i> was designed and created by the <i>Op.al Association of Australia</i> and serves as a guide for classifying the tone of the base stone (the body) The opal industry later has this guide for many types as well of opal, including Ethiopian opals.</p> <p>"Body" Tone N1 - N4 - for body types with black tones, typically mined at Lightning Ridge.</p> <p>"Body" tone N5 - N7 - for light colored opals, but have been used on Coober opals Pedy (clear / white) and Ethiopian opals.</p> <p>There is also an opal <b>brightness guide</b> which helps to assign a value to the brightness of an opal with the naked eye.</p> <p>Opal brightness can be described as:  Vivid, very bright, luminous, moderate, subdued.</p> <p>The Color Game includes yellow, red, orange, green, purple, brown, black, blue. Red is normally less common and when it is present the stone generally acquires greater value ...</p>			
<b>Cause of Color</b>	<p>Precious opal exhibits a variable play of internal colors and, although it is a mineraloid , it has an internal structure. At microscopic scales, precious opal is composed of silica spheres approximately 150-300 nanometers (<math>5.9 \times 10^{-6}</math>-<math>1.18 \times 10^{-5}</math> inches) in diameter in a hexagonal or cubic lattice.</p> <p>Opals are multicolored and consist of small spheres of silica arranged in a regular way, with water between the spheres. The spheres diffract white light, breaking it down into the colors of the spectrum. This process is called "opalescence". The larger spheres provide all colors, the smaller ones only blue and green. Opals that have a predominantly red color are very rare as they only occur where larger silica spheres have been deposited.</p>			
<b>Classification</b>	<b>Mineral class</b> Oxides and hydroxides- mineraloids	<b>Species - Group (mineral)</b> Opal	<b>Variety</b> Many (see list below)	
<b>Optical properties</b>	<b>Specific Gravity:</b> <b>1.25 - 2.23</b> common 2.09	<b>RI:</b> Between 1,370 (Mexico) and 1,470 <b>Polariscope :</b> SR <b>Double refraction:</b> No	<b>Character optical</b> Isotropic	<b>Pleochroism</b> NO
	<b>Luster (luster) - luster of the fracture</b> Vitreous, waxy, greasy, opaque - vitreous or oily on fresh fractures. Dull or waxy if corroded, porous or very impure.		<b>Dispersion (fire)</b> None	
<b>Light</b>	<b>Fluorescence</b> <b>SWUV :</b> Frequent - white, green or yellow <b>LWUV :</b> white, blue, yellowish green		<b>Phosphorescence</b> Rare - yellowish green Fire opal:	
<b>Form</b>	<b>Crystalline dress</b> Amorphous with irregular veins, in the masses, in the nodules	<b>Phenomenal optical effects</b> Play of colors (opalescence, a form of adularescence and iridescence)	<b>Crystalline system</b> Solid amorphous <b>Crystal class</b>	

<b>Chemical formula</b>	Silicon dioxide (+ water) - Hydrated silica  $\text{SiO}_2 (+ n\text{H}_2\text{O})$		<b>Spectrometer image</b>  Not detectable
<b>Fracture</b>	<b>Flaking</b> No	<b>Breaking- Parting</b> No	<b>Fracture</b> Irregular, chipped, conchoidal
<b>Durability</b>	<b>Hardness (Mohs) - Absolute</b> 5½ - 6 (rare 6½) - 60-72 (rare 86)	<b>Toughness</b> Fragile	<b>Stability</b> (heat, light, chemicals) From stable to fragile (fears dry environments, high temperatures and sudden changes in temperature)
<b>Clarity - characteristics</b>	<p><b>Typical inclusions:</b>          Inclusions are not a determining factor other than those that determine the effect of the play of colors. They are one of the main characteristics in the distinction between natural stones and synthetic stones. The most common natural inclusions are:</p> <p><b>Sand</b> : Often the remaining portions or holes of the host sandstone are not cut by the POC or the color bar.</p> <p><b>Crystals of another mineral</b> , such as gypsum or limonite.</p> <p><b>Matrix</b> - a slightly different type of opal silica.</p> <p><b>Weaving</b> : A web-like inclusion, sometimes of patch or similar material, scattered throughout the POC.</p> <p><b>Ironstone</b> - opposite the Boulder Opal</p> <p><b>Fluid inclusions</b> : water, sometimes boils or two phases.</p>		
<b>Deposits - types of rocks</b>	<p>Alteration of volcanic tuffs, basalts. Deep water marine silica sediments. The formation of opal-C, opal-CT and opal-AG is limited to low pressure and low temperature environments.</p> <p><b>Age</b> : 145-10 million years. The solution is believed to have a deposition rate of <b>about one centimeter thick over 5 million years</b> at a depth of <b>40 meters</b> . If the process allows the spheres to reach a uniform size, the precious opal begins to form.</p>		
<b>Characteristic s of rough stones</b>	<p>Opal is classified into <b>4 types</b>:</p> <ul style="list-style-type: none"> <li>- Opal-CT: contains cristobalite-tridymite</li> <li>- Opal-C: contains cristobalite</li> <li>- Opal-AG: amorphous ( Amorphous -Gel) (spheres of amorphous silica close together form a diffraction grating to create a precious opal).</li> <li>Opal-AN: amorphous (Amorphous-Network ( found as hyalite ).</li> </ul> <p><b>Some of the most popular varieties:</b></p> <p><b>Potch</b> : worthless opal</p> <p><b>Opal -AG</b> A type of opal consisting of aggregate spheres of amorphous silica, with water filling the spaces in between. Precious Opal and Potch Opals consist of this type of structure - the difference lies in the regularity of the size of the balls and packaging.</p> <p><b>Opal -AN</b> Opal -AN is a term for amorphous opal with a glass-like structure ( Graetsch , 1994). The "A" in the name stands for amorphous; the subscript "N" means that its structure is reticular similar to silica glass; however, it still contains about 3-8% water.</p> <p><b>Opal-C</b> A type of opal consisting of disordered α- Cristobalite .</p> <p><b>Opal -CT</b> It consists of packed microscopic spheres (150-300 nm) made up of tiny microcrystalline crystals of Cristobalite and / or Tridymite , with water content up to 10% by weight.</p> <p><b>Water opal, or. of Ceylon</b> , synonyms of moonstone, variety of orthoclase</p> <p><b>Alumocalcite</b> A variety of opal with alumina and lime impurities.</p>		

**Amatite** Opal formed by thick mounds deposited by hot springs rich in silica.

**Amber Opal** A brownish-yellow variety of opal, similar to amber.

**Andean opal** A greenish-blue opal from Peru.

**Andenopal** German name for the pink opal variety from Peru (Catamarca?).

**Bandfire Opal** A precious opal with bands that show a play of colors.

**Black Opal** The most valuable type of opal, this precious opal variety has a dark background color.

**Blue Opal** Translucent blue opal with no play of color. The cause of the color can be the light scattering effect or occasionally the microscopic admixture of chrysocolloids or other minerals. (See also "Andean Opal")

**Bone opal** Opal that replaces fossil bone.

**Shell Opal** Opal replacing fossil shells.

**Wood Opal** Opal that has replaced fossil wood.

**Boulder Opal** A variety of precious opal found in Queensland, Australia **in the form of cracks or coatings in and around sandstone / iron boulders.**

**Cat's Eye Opal** A rare form of chatoyant opal that shows a thin line of fire.

**Cherry Opal** A variety of common or precious opal that is distinguished by its red-brown color.

**Chrysopal** Nickel-rich green variety of transitive opal / mixed with chrysoprase

**Chrysopal (by Schumann)** Translucent variety of common apple green opal due to the presence of nickel.

**Opal Prase** A green opal .

**Claro Opal** Precious transparent Mexican opal with an intense play of colors (red, green, blue and yellow).

**Common Opal** A type of opal that does not exhibit any fire.

**Contra Luz Opal** A precious opal where the play of colors is visible only when held against the light.

**Crystal Opal** A clear to translucent variety of Precious Opal in which the play of colors is visible both on the surface and inside.

**Forcherite** A variety of opal from yellow to orange, which owes its color to microscopic inclusions of orpiment and realgar. Originally signposted from the Holzbrücken mill, Ingering valley , Knittelfeld , Styria, Austria.

**Girasol** A bluish-white translucent opal with reddish highlights. The name dates back to at least 1837. Compare with Girasol Quartz which takes its name from this material.

**Golden Opal** A name for yellow or golden opal

**Harlequin Opal** A variety of precious opal in which the play of colors is arranged in a vivid harlequin pattern, in the shape of a diamond or rectangular.

**Honey Opal** An unnecessary name for brown-orange opal.

**Hyalite** A colorless variety of Opal . Hyalite is an opal-AN, an amorphous silica glass containing about 3-8% water.  
As it has a different structure, it does not show the opalescence (play of color) found in the precious opal. Hyalite occurs as globular and ...

**Hydrophane** A variety of opal that becomes translucent or transparent when immersed in water, typical of Ethiopian gems.

**Isopyre** An impure dark red opal

**Jasper Opal** A brecciated Jasper cemented by opal.

**Opal -Jasper** A variety of yellow jasper colored opal.

**Jelly Opal** A clear opal with a jelly-like appearance and a bluish sheen.

**Lechosos Opal** Variety with a milky white background color.

**White opal** Precious opal with a white background.

**Lemon Opal** Another unnecessary name for a variety of colors of Opal .

**Opal Levin** Precious opal with long, subtle lightning-like flashes.

**Liver Opal / Liver Opal** A traditional name for a variety of dark brown opal. Also used as a synonym for **menilitis** .

**Lluisnando opal** A pale yellow opal

**Mascareignite** A form of opal silica, of plant origin. Mainly siliceous remains of grasses and diatoms. Originally reported from the island of Réunion.

Mexican **Fire Opal** A clear red opal from Mexico. red, brown-red to brown-orange, transparent to translucent.

**Noble / Precious Fire Opal** Fire opal showing a play of colors.

**Milk opal** A white opal .

**Musk opal** Opal with dendritic inclusions, usually green silicates.

	<p><b>Opal Mother</b> A sandstone or ferrous stone with Opal as concrete.</p> <p><b>Mountain opal</b> Name not necessary for opal of igneous origin.</p> <p><b>Onyx Opal</b> A banded opal reminiscent of Onyx</p> <p><b>Oolithic Opal Oolithic</b> opal is a variety of opal consisting of interconnected spherical grains, or oolites, of opal.</p> <p><b>Opal Matrix</b> A term for a thin layer of opal on a host rock.</p> <p><b>Opal -Agate</b> A variety of Opal showing agate-like colored bands.</p> <p><b>Opal pseudomorphs of Serpentine Opal.</b> A local term.</p> <p><b>Painter Boulder</b> Sandstone boulders with a thin opal coating.</p> <p><b>Pineapple Opal</b> Pseudomorph of Opal after Ikaite</p> <p><b>Pinfire Opal</b> With very small flashes of color the size of a pinhead.</p> <p><b>Pipe Opal</b> Opal that fills long cylindrical cavities.</p> <p><b>Pitch Opal</b> A variety of blackish opal with a pitch sheen.</p> <p><b>Precious Opal / Noble Opal</b> A precious variety of opal gems that exhibit opalescence. The most valuable opal is the opal-AG. It shows a play of colors ("opalescence") due to the diffraction of light from the regular packing of approximately equal sized submicroscopic silica spheres (Jones et al, 1964; Sanders, 196 ...</p> <p><b>Pyrophan Opal</b> where the play of colors seems to wander randomly.</p> <p><b>Quinzite Opal</b> Rose to pink opal. Originally described by Quincy-sur-Cher, Bourges, Cher, Center, France.</p> <p><b>radiolith Opal</b> Smoky brown opal colored by inclusions of radiolar exoskeletons.</p> <p><b>Red Flash Opal</b> Precious opal with flashes of red that appear and disappear when the stone is turned.</p> <p><b>Resin opal</b> A common yellow-brown opal with a resinous sheen.</p> <p><b>Slocum Stone</b> A synthetically grown opal</p> <p><b>Wash Opal</b> Alluvial pebbles of Opal .</p> <p><b>Wax Opal</b> A yellow to brown opal with a waxy sheen.</p> <p><b>Yowah Nut</b> Small rounded sandstone pebbles impregnated with precious opal . Originally reported from the Yowah Opal Field , Queensland, Australia.</p>
<p><b>Main deposits</b></p>	<p><b>Precious opal (with play of colors):</b></p> <p><b>Noble opal - Major deposits: Australia</b> (New South Wales, Queensland, Central North / Coober Pedy / North West Province Mintabie / Stuart Shelf Andamooka Ranges-South Australia, Cowarna Downs Station / Coolgardie -Western Australia), <b>Ethiopia</b> (North Shewa Zone- Amhara Region ), <b>Brazil</b> ( São Geraldo do Araguaia-Pará), <b>Mexico</b> (fire opal, crystalline), Guanajuato, Jalisco, Nayarit, Queretaro ), USA ( <b>Nevada, Idaho</b> )</p> <p><b>Minor deposits:</b> Canada, Spain, Indonesia, Hungary, Honduras, Somaliland, Slovakia, Germany, Peru (Blue, pink without opalescence), New Zealand, Russia,</p> <p><b>Common opal (without opalescence):</b> Afghanistan, Algeria, Angola, Antarctic, Arctic Ocean, Argentina, Atlantic Ocean, Tasmania, Austria, Bolivia, Bulgaria, Cambodia, Cameroon, Cape Verde, Chile, China, Colombia, Costa Rica, Czech Republic, Denmark, DR Congo, Egypt, Faroe Islands, Fiji, Finland, France, Georgia, Greece, Greenland, Guatemala, Iceland, India, Indian Ocean, Iran, Israel, <b>Italy (Sardinia)</b> , Japan, Jordan, Kazakhstan, Kenya, Kosovo, Libya, Madagascar, Malaysia , Mali, Marshall Islands, Mauritania, Mongolia, Morocco, Myanmar / Burma, Namibia, North Macedonia, Norway, Oman, Pacific Ocean, Pakistan, Papua New Guinea, Paraguay, Poland, Portugal, Romania, Rwanda, Saint Lucia , Saudi Arabia, Serbia, South Africa, South Korea, Thailand, Sri Lanka, Sweden, Switzerland, Tajikistan, Tanzania, Thailand, Turkey, United Kingdom, Ukraine, Vietnam, Zimbabwe, <b>Mars</b> ,</p>
<p><b>Year of discovery</b></p>	<p><b>4000 BC:</b> In a cave in Kenya, Louis Leakey, the famous anthropologist, discovered the earliest known opal artifacts. Dating back to around 4000 BC, they most likely came from Ethiopia.</p>

<p><b>History</b></p>	<p>Opal artifacts that are several thousand years old have been discovered in East Africa. As early as <b>250 BC</b>, the Romans valued opals . Rome probably obtained the gems from the mines located near <b>Cervenica or Cernowitz (today Chernivtsi in Ukraine )</b> . It is said that Marco Antonio loved this stone. In fact, it is said that he so desired an almond-sized opal owned by the Roman senator Nonio that he banished it after he refused to sell him the stone for 2,000,000 sesterces. It is said that the Roman general desired the gem to give it as a gift to his mistress, Cleopatra VII. Another legend states that a Roman emperor offered to trade a third of his vast kingdom for a single opal. Around the middle of the <b>1st century AD</b> , the famous author, Roman scholar Pliny wrote of the opal: "<i>Having a bright fire of the carbuncle (ruby or garnet), the glorious purple of the amethyst, the sea green of the emerald and all those colors sparkling together mixed in an incredible way.</i> "</p> <p>The first discovery of common opals in <b>Australia</b> was made near Angaston (SA) by the German geologist Johannes Menge , in 1849. The deposit of Yowah , Queensland, began attracting miners in 1880 and at White Cliffs (NSW) in 1890, at Opalton ( Qld ) in 1896 and at Lightning Ridge (NSW) in 1905.</p> <p>In <b>1829</b> , the novel "Anne of Geierstein " gave the opal a reputation for being unlucky or carrying the evil eye. Some believe that this bad publicity ploy was intentional, designed to protect the diamond market from competition that could come from opals .</p> <p>Between the 19th and 20th centuries, many royal houses used them for their jewels, famous were those of France and <b>Napoleon</b> . The great transalpine leader presented his empress Josephine with a magnificent opal , called "The Burning of Troy", which emitted splendid red glows. Australia became at that historic juncture, the leading opal producer in the world, a position it holds even at the present time.</p> <p>Before 1900, raw opal was shipped from White Cliffs , NSW's main harvesting camp, then shipped to Germany to be cut and polished. Gradually, professional cutters began to appear in the fields. They equipped themselves with old pedal sewing machines or bicycles and with these they designed innovative tools for working with gems. In 1907 in Old Town, in the Wallangulla Opal Fields (later known as Lightning Ridge Opal Fields), the first local lapidary appeared, his name was Charles Deane . In 1908, there was an opal rush and the cutters settled in a 3-mile long area called the Nettleton on 3-Mile. Many early miners cut their own stones, but they often did it very roughly. Their commercial value increased mainly between <b>1900 and 1932</b>.</p> <p><b>In 1915</b> a group of gold miners was exploring the Great Victoria Desert northwest of Adelaide. It is said that one night, a 14-year-old boy accidentally found a noble opal. This find started an "opal race". In a short time, the settlement of the <i>Stuart Range Opal Field was established</i> , which today is known as Coober Pedy . Until the early 2000s, Coober Pedy supplied about 95% of the world's white opals .</p> <p>The first published report on the gem opal of <b>Ethiopia</b> appeared in <b>1994</b> , with the discovery of the precious opal in the Menz district Gishe , in North Shewa province .</p> <p><b>Name : The opal or the opal?</b> The name can be both masculine and feminine. The masculine form seems to be the predominant one.</p> <p>The origin of the name is uncertain. It could derive from the Sanskrit <i>upala</i> , which means "stone" or "precious stone" then passed to the Greek <i>ὀπάλιος-opallios</i> then to the Latin <i>opālus</i> (meaning "precious stone"), finally to the French <i>opal</i> and the archaic Italian <i>opal / opala</i> , hence the modern <i>opal form</i> . Pliny may also have referred to the gem as <b>paederos</b> .</p>
<p><b>Property attributed</b></p>	<p>Since the opal has the colors of other gems, the Romans thought it was the most precious and powerful of all. The Bedouins believed that opals contained lightning strikes and fell from the sky during thunderstorms.</p> <p>In physical healing, it is believed that it can help <b>treat infections and lower fever as well as strengthen the immune system</b> . If the chest or respiratory system is constricted, it can also help relieve this pressure and bring lightness to the breath. Those struggling with a long-term illness or chronic condition can find in this stone a solid travel companion, which can aid in a return to full health.</p> <p>Opal can also help the <b>liver function well</b> and can reduce pain associated with PMS and childbirth. It is also good support for renewing skin cells , <b>giving</b> them youthfulness and for strengthening the condition of nails and hair. For those struggling with water retention, this gem can help them.</p> <p>It can also bring inner balance and harmony. Opal takes a thought or feeling, amplifies it and sheds light on it so that it can be seen clearly.</p>

	<p>Opal invites us to let go of old wounds, old patterns and old connections and to remember the lessons of life, without giving way to pain. It is also known as the <b>stone of hope</b> and positive change, which invites you to <b>take responsibility</b> and control your actions.</p> <p>Due to its different shades, the opal is associated with every single chakra. It is also connected with <b>higher communication and the realm of spirits</b> and angels.</p> <p>Its vibrations connect beautifully <b>with water</b> .</p> <p>It is the gem of the <b>14th wedding anniversary</b></p> <p><b>Planet:</b> Venus</p> <p><b>Month:</b> October (official stone )    <b>Zodiac sign:</b> Libra</p> <p><b>Chakra:</b> depends on variety or color:</p> <p>Black / boulder opals - <b>Root Chakra</b> - Enhance feelings of security and confidence</p> <p>Fire Opals - <b>Sacral Chakra</b> - Increases sexuality and fertility</p> <p>Yellow Opals - <b>Solar Plexus Chakra</b> - Treats liver, stomach and gallbladder problems</p> <p>Green or Pink Opals - <b>Heart Chakra</b> - Relieves jealousy and grudges</p> <p>Blue Opals - <b>Throat Chakra</b> - Improves communication and throat / thyroid problems</p> <p>Purple Opals - <b>Third Eye Chakra</b> - Increase Resolve and Faith</p> <p>White Opals - <b>Crown Chakra - Cures</b> headaches and migraines</p>
<p><b>Treatments</b></p>	<p><b>Filling and oiling of fractures</b></p> <p>Cracked opal is treated by attempting to fill the cracked cracks with an " opticon " or similar resin material. Also known as a treatment (for durability) is the grinding of sand spots into the black patch of the gemstone and filling the hole left with resin, although this procedure may never reach the color bar and be seen face down. up in the opal.</p> <p><b>The resins</b></p> <p>Queensland boulder opal make-up treatment has recently been used. Some Queensland boulder opals are treated this way. The problem is that the opal that is normally naturally attached to its iron stone host sometimes does not fully adhere to the iron stone, possibly due to a layer of sand or silt. The treatment fills the union between the opal layer and the iron stone support and the treatment is very difficult to observe without sophisticated analytical equipment, however the treatment is very limited in its application.</p> <p><b>Surface coating</b></p> <p>It has recently been determined that some Queensland boulder opal specimens have been treated by depositing a layer of aluminum oxide (Al<sub>2</sub>O<sub>3</sub>) to overcome the softness of some opals . Opal has a Mohs scale hardness of 5-6 while aluminum oxide has a hardness of 9. This treatment is currently very limited, however if it becomes prevalent it will be difficult to detect without proper analytical equipment.</p> <p><b>The charring</b></p> <p>Carbonization of matrix opal involves any process or method of placing graphitic carbon particles into pores or spaces, particularly of "matrix" type opals , in order to enhance the material in a "black" body color and then imitate the "black opal". microscopic observation as areas of black "spots" or spots in the opal material.</p> <p><b>Acid and sugar</b></p> <p>This is the most common form of opal treatment and is usually applied to <b>Andamooka matrix opal</b> . The process is quite simple. The matrix opal is cut and polished to shape and then "baked" in a saturated sugar solution. After a period of time the opal is removed and immersed in a concentrated solution of sulfuric acid. The reaction of the acid and sugar places the carbon as black spots in the porous surface layer of the matrix opal, making it black and thus mimicking the black opal.</p> <p><b>Coal and the treatment of smoking</b></p> <p>This form of opal treatment has been recorded throughout history. It is said that the opal matrix can be wrapped in newspaper or bark or the like and placed in the fire, carbonizing the material and depositing the carbon in the opal matrix. More recently this form of treatment has been applied to the more porous varieties of Ethiopian "hydrophane" opal.</p>
<p><b>Synthetic counterpart</b></p>	<p>One of the most prominent opal imitations was introduced in the early 1970s by John Slocum of Rochester, Michigan. In this imitation, thin sheets of metallic foil were incorporated into the glass to produce thin-film interference colors reminiscent of the "play of colors" in natural opal. In 1972, Pierre Gilson began producing a true synthetic opal that did not require polymer impregnation. The first imitations could be divided into 2 main types: a plastic variety with "latex" spheres (actually polystyrene) and a silica based variety . Synthetic opals and imitations have been produced over the years by</p>

	<p>other manufacturers including Kyocera , Almaztechnocrystal and Openallday Pty, but the most recent development is an opal-like plastic made by Kyocera and others in Japan. This new material is 80% plastic and 20% silica. Another recent product is that of Sanwa - Hong Kong, called <i>Bello Opal</i> , a synthetic Opal impregnated with polymer and available in 92 colors, such as green opal, blue opal, white opal, pink opal, yellow opal, purple opal, black opal. .. etc.</p>		
<b>It can be confused with</b>	<p>Synthetic opals, doublets, triplets. Opal Doublets / Opal Doublets consist of 2 layers which are held together with glue. These two layers are; They can be glued to a black backing which is basically made of black potch , black industrial glass, hard plastic or brown iron stone and vitrolite . They can also be glued onto a thin slice of opal which is often white or crystal opal. Although the thickness of a doublet opal can vary based on certain factors that cannot be controlled, it still turns out to be much thicker than that found in a triplet opal.</p>		
<b>Indicative gemological tests</b>	<p>The most important test is the one that concerns the examination under the microscope. Noble opal can only be confused with itself , but in its synthetic or assembled versions. When it comes to doublets or triplets, the separation planes are often obvious, especially when viewed through the side with different types of lighting. To spot an artificial opal , you need to look at the gem from every angle. Artificial stones have colors arranged very regularly (usually) in columns within the stones, although they are often cut to hide this feature. A second feature that immediately catches the eye in opal imitations is the repetition of similar colors and designs in each piece. A closer look highlights some typical aspects such as the "lizard skin" or "snakeskin" effect and the stacked tubular texture. Natural gems often do not have a perfect shape, as irregular shapes are sometimes chosen to show the best of the gem.</p>		
<b>Value (2021)</b>	<b>High :</b> \$ 10,000-100,000 / ct <b>3 carat +</b>	<b>Medium:</b> 200-500 \$ / ct <b>1-3 carats</b>	<b>Low: \$</b> 5-10 / ct <b>below the carat</b>
<b>Typical cut</b>	<p>In cabochons, the layers of opals are usually quite thin and irregular, the play of colors often confined</p>		
<b>Famous stones</b>	<p><b>"The Black Prince"</b> "The Black Prince", originally known as " Harlequin Prince", was found in 1915 in Phone Line, Australia, weighed 181 carats and featured a flag pattern on one side and the other was red. After its discovery, this magnificent opal was bought by a wealthy North American buyer in England, who later donated it to the New York Museum of Natural History. Subsequently, the stone was moved to the Forest Lawn Memorial Cemetery in Los Angeles. <b>"The Pride of Australia / Red Emperor"</b> This 225-carat gem was double-sided. The one on the back was light with a harlequin color arrangement, totally different from the main face, showing dark, rich flashes of color. In 1920, it was purchased ( along with three others) for £ 2000, then, after 1950, it was stolen along with the Black Prince and its location remains a mystery to this day. <b>The Queen / Fire Queen</b> This stone was found in November 1906 and weighed nearly 900 carats. It was sold for £ 100 to an unknown buyer and later changed hands several times. It was valued at £ 40,000 at the Chicago Museum, then renamed and sold for £ 75,000 to <b>John D. Rockefeller</b> in the 1940s.</p>		
<b>Record stones</b>	<p><b>"The Flame Queen"</b> It was extracted in 1918 12 meters below the surface, through a 70-80 cm wide tunnel. The original bid for the rough stone was just £ 7, but it later sold for £ 93. It weighed 253 carats, and featured a dominant mix of red and blue-green with various color combinations. It was resold for <b>\$ 1 million</b> in 1980. <b>Aurora Australis</b> It was found in 1938 at Lightning Ridge and is considered to be among the most precious black opals in the world. The oval, cut and polished stone features harlequin motifs with dominant colors of red, green and blue on a black background. It weighs 180 carats. The rarity of the opal comes from its size and the strong and vibrant play of colors. It was valued <b>AUD \$ 1,000,000</b> in 2005. <b>Halley's Comet</b></p>		

It weighs **1982.5 carats** . It was put up for sale in 2006 for A \$ 1.2 million. The gem has a thick layer between green and orange and is considered the largest gem of its type ever found at Lightning Ridge.

**The Rainbow of the Virgin / Virgin Rainbow**

The incredible 72.65-carat gem was discovered by a lone miner working in an old mining pit with a digger in 2003. It was formed inside a fossilized cuttlefish of a species known as *Belemnita* . In 2016, its value was estimated at over \$ 1 million and was acquired by the South Australian Museum in Adelaide.

**\$ 10 million opal collection**

In 2018, a private collection of opals began to travel around the world; however, it was privately shown to collectors. Composed of 12 uncut and untreated black opals of various shapes and sizes acquired over a period of 100 years. The collection was put together by a group of Lightning Ridge miners. The weight of the pieces in the collection ranges from 21 to 6,085 carats and its price was estimated at 10.8 million dollars.