




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

Technical sheet - general: Spessartine (garnet)

Gemma - names	(Italian - Spessartina-ite) (English - Spessartine-ite) (French - spessartine) (Spanish -spesartine) (Portuguese - spessartina) (Thai - แก้ว โกเมน , สีแดง เข้ม Kæ̌w kōmən, sT dæng k`həm)	(German - Spessartin) (Arabic - سبيسارتين sabisaratayn) (Russian - Спессартин Spessartin) (Mandarin - 锰铝榴石 Měnglǚliúshí) (Swahili - Spessartine) (Hindi - स्पैसरटाइन spaisaratain)	photo 
Colors (GIA)	orange spessartine pure is not common; reddish , brownish or yellowish tints are frequent . Its most desirable color is a fiery red with slight orange hues .		
Cause of Color	Natural spessartine has an orange color, but iron impurities are usually present , giving it a red-orange or brownish-orange color. Spessartine has an exceptionally high refractive index, which gives these precious stones an extraordinary brilliance. Manganese (Mn 2+ in distorted cubic coordination), present in the gem, is responsible for the base color of the stone. Idiochromatic Gem		
Classification	Mineral class Nesosilicates	Species - Group (mineral) Spessartine Garnet	Variety Malaya - others
Optical properties	Specific Gravity: 4.12 - 4.32 Municipality: 4.19	RI: 1,800 (1,789 - 1,830) Polariscope :SR with ADR Double refraction: -	Charact er optical / Pleochroism /
	Luster (luster) - luster of the fracture From adamantino a vitreous - Vietreo		Dispersion (fire) 0.027
Light	Fluorescence SWUV (254 nm) : Inert LWUV (365nm) : Inert		Phosphorescence NO
Form	Crystalline dress From massive to crystalline, Dodecahedral, trapezoidal Melting point: 1950 ° C	Phenomenal optical effects Attitude Color change (rare)	Crystalline system Isometric Crystal class
Chemical formula	Aluminum silicate and manganese Mn 2+ 3 Al 2 (SiO 4) 3 .		Spectrometer image  Bands at 410, 420, 430 nm (or joining to form a cut below 430 nm; also bands at 460, 480, 520 nm. Possible weak bands at 504 or 573 nm
Fracture	Flaking Absent	Breaking- Parting Raa	Fracture Sub-concoidal-concoidal
Durability	Hardness (Mohs) - Absolute 6.5-7.5; 86 - 150	Toughness Fragile	Stability (heat, light, chemicals) Good
Clarity - characteristics	Typical inclusions: 2-phase liquid inclusions that have a feathery appearance and inclusions of rutile needles, wavy feathers formed from tiny, chopped-looking liquid droplets, fine needles / fibers and crystals. 		
	Type II Normally included	Transparency (commercial) - transparency Transparent to translucent	
Deposits - types of rocks	It is frequently found in granite pegmatites , granites and rhyolites. It forms in some skarns and manganese-rich metasomatic rocks adjacent to igneous intrusions or in regionally		

	<p>metasomatic areas. and in types of rocks associated with them, but also in some low-grade metamorphic phyllites. Beautiful red-violet crystals can be recovered from rhyolites from Colorado and Maine in the United States. In northern Madagascar, orange specimens derive from sodium-rich pegmatites in the bedrock of the Sahatany valley plateaus. Deposits also exist in southern Madagascar, in the Maevatanana region. Spessartine, like other garnets, always appears mixed with other species. It forms a series of solid solutions with another species of garnet, the almandine. Gems with a high content of spessartine tend towards a light orange hue, while the prevalence of almandine induces red or brownish hues. Well-formed crystals of this series, varying in color from very dark red to bright yellow-orange, are typical of Latinka , in the Rhodope Mountains, in the province of Kardzhali, in Bulgaria .</p> <p>Geological age : 30-80 million years</p>
Characteristics of rough stones	<p>Spessartine often occurs in trapezoidal single crystals, usually well developed. Less frequently it appears in dodecahedral crystals or in trapezoidal-dodecahedral combinations or in dense clusters of crystals, in granular, druze, massive aggregates and in the veins of the host rock. Crystals are occasionally streaked and sometimes in heavily etched complex shapes.</p>
Main deposits	<p>Although the stone, as mentioned, was originally found in Germany, in the hilly region of Spessart (but shortly after also in the mines of Rutherford, Virginia, USA), deposits of spessartine are now found in many parts of the world. The most important mines are located in Nigeria (Oyo) and Namibia (Kunene Region), but there are also deposits in Afghanistan (Kunar), Australia, Burma / Myanmar (Region of Mandalay), Brazil (Minas Gerais) , China (Fujian Province) , India, Kenya, Madagascar (Vakinankaratra) , Malawi, Mozambique, Pakistan (Gilgit-Baltistan) , Sri Lanka (Sabaragamuwa region) , United States of America (Ramona-California, Amelia County-Virginia, Colorado) , Tajikistan, Thailand, Tanzania (Arusha) and Zambia . Small crystals are also occasionally extracted in Germany and Italy.</p>
Year of discovery	<p>1832: the gem had been known for centuries, but in 1832 it took the name that still distinguishes it.</p>
History	<p>Garnets were already known in ancient times, Romans, Greece and many other peoples appreciated their color and beauty. However, there was no way to distinguish the different varieties. A systematic classification has only begun in the last few centuries . The first deposit of pegmatite origin was discovered in the district of Ramona, in the Little Three locality, in May 1903 by HW Robb of Escondido, California. Between 1903 and 1905, this mine produced about 10 kg of gem quality spessartine. Until a few decades ago, clear and gem-grade specimens of spessartine were quite rare, but in the last 50-60 years, many new deposits of large, faceted crystals with excellent color have been discovered. A very important deposit of this gem was identified in the 1960s , in the Umba River valley in Tanzania and Kenya . The trade name of Malaya (or Malaia) was coined to describe these new African garnets.</p> <p>In 1991 the most precious variety of this stone was discovered, the <i>mandarin garnet</i> , so called for its beautiful and lively orange shades, also called <i>spessartina Kunene</i> , from the name of the river that marks the border between <u>Namibia</u> and <u>Angola</u> . In 1999 a much larger find was made in Nigeria. That deposit has produced a small number of highly prized gemstones, but it appears this new field is already nearly depleted. There are also spessartite deposits in Mozambique and Madagascar, but very little new first-rate material has been found.</p> <p>Spessartine crystals from Tanzania were first placed on the market in 2008 . The field is located in Nani, Loliondo, in the Arusha region, near the Serengeti National Park.</p> <p>Name : Originally, this mineral, coming from the Spessart Mountains, was called "granatförmiges Braunsteinerz" (garnet-shaped manganese ore ") in 1797 by Martin Klaproth. Renamed in 1832 , by François Sulpice Beudant, spessartine takes its name from Spessart , a hilly region of Germany, between northwestern Bavaria and southern Hesse , where the stone was found for the first time in the mid-19th century. The word / name Spessart comes from "Spechtshardt". Specht is the German word for woodpecker and Hardt is an obsolete word meaning "hilly forest".</p> <p>Previously it was known as "manganesian" garnet, the name given to it by Henry Seybert in 1823 , using material from Haddam, Connecticut, USA.</p> <p>This mineral is sometimes incorrectly referred to as spessarite . a type of igneous rock, a variety of <i>lamprofiro</i> (small volume, uncommon ultrapotactic igneous rock found mainly in lopoliths, laccoliths, stumps and small intrusions). Despite this, in the world of precious</p>

	<p>stones the name <i>spessartite</i> is used more frequently (generally combined with the word garnet: spessartite garnet), while in the world of minerals the term <i>spessartine</i> is more frequent .</p> <p>Other trade names:</p> <p>Varieties : The varieties of garnets, spessartine together with almandine and pyrope are also known by the acronym "piralspite" and are part of the so-called "aluminous garnets". These are the varieties containing manganese ; the almandine is the extreme that contains more iron, while the pyrope is the one that contains magnesium. The pyrope-spessartine mixture forms the variety called malaya , characterized by the amber orange color that is extracted only between Kenya and Tanzania, where it was originally discovered. Malaya garnets are not pure Spessartite, but are intermediaries between spessartine and pyrope, although closer in chemical composition to spessartine . Mandarin garnets have the highest concentration of spessartine (85% -95%) and have bright orange colors. Malayas can have compositions with variable but high percentages of spessartine (2-94%), pyrope (0-83%) and almandine (2-78%).</p> <p>Mandarin garnet (light orange to orange yellow) , usually native to the African countries of Namibia and Mozambique, is another variety available on the market. It is distinguished from real spessartine for the inclusions and veins that give it a more "caramel" aspect.</p> <p>Another variety, already known and appreciated by the Romans, the Greeks and the ancient Indians, is the <i>exonite</i> garnet , very precious and with a beautiful orange-cinnamon color.</p> <p>Mandarin Spessartine - Synonymous with mandarin garnet.</p> <p>Namibian Spessartine - bright orange red from Namibia.</p> <p>Kashmirina - Spessartina of Kashmir.</p>		
Properties attributed	<p>It is said to be the traveler's stone. Noah's Ark is also said to have had a spessartine garnet lantern that aided navigation at night. This gem is said to benefit health and sexual activity as well as a sense of security. This stone propitiates new creative projects and cleans up one's auric field, opening an open channel to innovation. It increases fertility and amplifies personal power and will. It stimulates all aspects of creativity in terms of both energy and ability and encourages taking action towards one's dreams, visions and goals. It induces optimism, confidence, boldness and action.</p> <p>Planet: Saturn</p> <p>Month: October Zodiac sign: Virgo - Aquarius</p> <p>Chakra: Root</p>		
Treatments	Spessartine does not require any type of treatment (heating, irradiation, etc.) to improve its brightness or color.		
Synthetic counterpart	There are forms of synthetic garnet such as GGG or YAG, but no specific synthetic counterpart (with the same chemical, physical and optical characteristics) of spessartine is known.		
It can be confused with	<p>Orange and red-orange spessartine can be similar to zircon , spinel and certain types of tourmaline (all separable by RI and birefringence). It can also be very similar to Mexican fire opal, although the latter has a much lower hardness. Spessartine may also resemble topaz and some reddish forms of heat- treated citrine . Other gems with which it can be confused: Malaya / Pyralspite garnet, grossular garnet (Separation by: spectrum, inclusions), Pyrope (color is usually more intense red. Andradite (very difficult to distinguish without complex methods). Cubic zirconium (Separation by : luster, spectrum, SG), Essonite (Separation by: RI, SG, spectrum, inclusions), Glass (Separation by: inclusions, spectrum, UV fluorescence), Fire opal (Separation by: luster, RI, SG), etc .</p>		
Indicative gemological tests	It is the most magnetic of the garnets and can be identified through a magnet. Standard gemological tests are normally sufficient to identify it successfully.		
Value (2021)	High : 2000+ \$ / ct 3 carat +	Medium: \$ 750 / ct 1-3 carats	Low: \$ 200 / ct below the carat
	Bright and orange reds are generally the most precious spessartite colors. 'Aurora red', a highly saturated reddish orange hue with a medium to medium dark tone, is also a highly sought after color. Those called <i>mandarins</i> , characterized by purer orange shades, also rare, are in great demand and can outperform other spessartine in price.		
Typical cut	The cut gems are never of considerable size and rarely exceed the weight of 5 carats. The price, as regards the best specimens available on the market, can reach 2000 dollars per carat. Due to its good hardness, it can be used in all forms of jewelry, especially in rings and pendants. It is also polished in cabochon for rings and bracelets.		

Famous stones	<p>10.25-carat spessartine set in a pendant was made from material recovered from the Ramona mine in California in 1975 . This large gem was flanked by another 4.1 carat stone, mounted on a ring and by two other 2.5 carat twin stones part of the earrings that completed the set.</p> <p>Notable specimens exist in the Smithsonian Institution Museum (Washington, DC): 109 carats (red, from Brazil); 53.8 carats (red, from Brazil); 40.1 carat (orange, from Virginia, USA).</p> <p>Other large crystals are housed at the American Museum of Natural History (New York): 96 carats (reddish, not clean, from Brazil).</p>
Record stones	<p>The largest specimen of faceted spessartine known, coming from the Californian mine of da Ramona, weighs 39.63 carats and was mined between 1987 and 1990. Large specimens over 100 carats exist (especially if they come from Brazil and Madagascar), but they are not often reported, as spessartine often remains a niche gem.</p>