
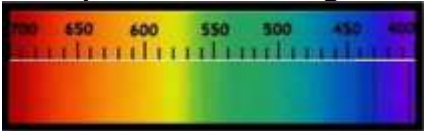



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Technical details - general: Grossular garnet - Hessonite

Gemma - names	(Italian - Essonite) (English - hessonite) (French - hessonite) (Spanish - Hessonita) (Portuguese - Hessonita) (Thai - เฮสโซไนท์ h es - so n i th ')	(German - Hessonit) (Arabic - هيسونيت hysunit) (Russian - Гессонит Gessonit) (Mandarin - 铁氧体 tiěyǎngtǐ) (Swahili - Hessonite) (Hindi - हेसोनाइट hesonait)	photo 	
Colors (GIA)	Coarse garnet can come in pink and green, but it is best known for its <i>cinnamon-like colors</i> , in this case it is often referred to as exonite. Its colors include yellow, brownish yellow, brown, orange, reddish orange.			
Cause of Color	Hessonite owes its orange color to manganese (Mn ²⁺) in distorted cubic coordination, and partly to iron (Fe ³⁺). Grossularite can range from colorless (rarely) to yellow, reddish orange, pink and orange-red, green, to black. its variety of colors varies according to the impurities contained in the mineral. The best green grossular garnet variety is called tsavorite (Kenya and Tanzania). The massive variety, on the other hand, takes the name of hydrogrossularia , which, if green, is often sold fraudulently as " Transvaal jade " (from the name of the best known deposit, in South Africa, but also found in Canada, Sri Lanka, Pakistan , Russia, Tanzania and the United States). The pink variety , found in dry and South Africa , owes its color to iron and is known in the market as rosolite . The hibschite (from Josef Emanuel Hibsche, Tetschen, Bohemia, who found the original specimen) is a white to light yellow variety of grossularite, but may have shades of gray, green, bluish green, smoky gray to black. The color is caused by the substitution of hydroxyl atoms for silica atoms. It was previously considered a separate mineral species itself. It occurs in microscopic crystals, which can be very densely packed together. Idiochromatic Gem			
Classification	Mineral class Nesosilicates	Species - Group (mineral) Grossularite - Garnets	Variety Essonite	
Optical properties	Specific Gravity: 3.55 - 3.73 Common: 3.59	RI: 1,760 (1,731 to 1,755) Polariscope :SR with ADR Double refraction: -	Character optical Isotropic	Pleochroism /
	Luster (luster) - luster of the fracture Vitreous - vitreous		Dispersion (fire) 0.027	
Light	Fluorescence SWUV : inert LWUV : Yellow stones: faint salmon pink, orange red or purplish red		Phosphorescence NO	
Form	Crystalline dress Euhedral, typically shows a rhombic dodecahedral shape, but trapezohedra are not uncommon and hexoctahedra are seen in some rare specimens. Massive, compact and granular forms also occur. Melting point: NA	Phenomenal optical effects Color change (rare)	Crystalline system Cubic-isometric hexoctahedral Crystal class	
Chemical formula	Calcium and aluminum silicate (and iron) Ca₃Al₂(SiO₄)₃ + Fe		Spectrometer image  Possible bands at 407 and 430nm	
Fracture	Flaking Indistinct	Breaking- Parting Indistinct	Fracture Irregular, sub-conchoidal	
Durability	Hardness (Mohs) - Absolute 6.5-7.5; 86-150	Toughness Fragile	Stability (heat, light, chemicals) Good	

Clarity - characteristics	<p>Typical inclusions: Internal feature called heat wave or whiskey in water , a visual effect reminiscent of water that is stirred or moved within the stone. Often with excellent transparency or tiny inclusions. Other inclusions may include: fluid inclusions, graphite crystals, coite, enstatite, scapolite and sapphire, or low relief rounded crystals (such as quartz, apatite, ilmanite and zircon), acicular crystals, rutile needles. Lamellar growth structures in Mexican exonite produce iridescent colors similar to those reported for andradite from the same areas.</p>		
	<p>Type II Normally included</p>	<p>Transparency (commercial) - transparency Transparent to translucent</p>	
Deposits - types of rocks	<p>In the veins of rodingites and in metamorphic rocks of regional contact, that is, in those limestone rocks that have undergone a process of metamorphism (of calcium). It is also sometimes found in schists and serpentinites. Grossularia is found in contact with limestone metamorphosed with vesuvianite, diopside, wollastonite and wernerite. Geological age : 30-40 million years or more .</p>		
Characteristics of rough stones	<p>It occurs in dodecahedral or trapezoidal crystals, with striped faces, even 15 cm long / wide, from cinnamon brown to orange.</p>		
Main deposits	<p>The best deposits are found in Sri Lanka in metamorphic rocks or in gravels and sands. Brazil , Canada (Alberta, Québec), Italy (Val d'Ala, Val d'Aosta and Valle del Sangone, in Val della Gava, Liguria), Madagascar (Maharitra), Mali , Mexico, Myanmar (Mandalay Region) , Namibia , Russia (Chelyabinsk Oblast) , Sri Lanka (Provinces of Sabaragamuwa and Uva) , Tanzania (Lelatema) , USA (Maine, California and New Hampshire).</p>		
Year of discovery	<p>1868 : The classification of garnets was perfected by Karl Cäsar von Leonhard (1779-1862), a German mineralogist and geologist. His son, Gustav von Leonhard, was also a mineralogist. The cataloging method was completed by Dana and Brush (1868) The mineralogy system: descriptive mineralogy.</p>		
History	<p>More than 2000 years ago, the Greek philosopher Aristotle wrote "Garnet is a red gem, but not like ruby, its red is much more like that of a flame". There are 32 officially accepted species of garnet, but the 5 most important include pyrope and almandine (the combination of which creates rhodolite), spessartine or grossularite (which includes hessonite and tsavorite) and andradite (which includes demantoid). Both the ancient Greeks and the Romans made cameos, carvings and cabochons from essonite. Known as a red stone, garnet is actually a name used for a larger group of minerals that can come in multiple colors. Hexonite garnet. From the 16th to the 18th century , Hessonite (known at the time as "Hyacinth") was in great demand as a stone for cameos or for bracelet clasps. Prior to the discovery of tsavorite in the late 1960s and 1970s, exonite was the best known variety of non-red colored garnets. However, in the 1990s, the discovery of bright orange mandarin garnets, a variety of spessartine, saw a growing interest in gems of this color. While mandarin garnets are rare and expensive, Hexonites offer a more readily available and relatively inexpensive option. Name : Essonite comes from the comparative Greek term ἡ ἴσσων (ísson) = "lower". given to the stone by the mineralogist René Just Haüy, in reference to its lower hardness and density than other types of garnets. The more general term, grossular, derives from the botanical name <i>Grossulariaceae</i> (from grossulus, diminutive of grossus grossolano, coarse, often) for the gross fruits of the "gooseberry ", in reference to the grossular green garnet originally discovered in Siberia. Hessonite is also called cinnamon stone , as it is said to closely resemble the color of this plant's oil. In Italian, the terms "gross", "grossolare" and "grossolarite" are used. garnet is also called "gomed" in Indian literature and is one of the 9 sacred stones, the <i>Navaratna</i> , of Vedic astrology. Other trade names: cinnamon stone, golden garnet, cinnamon stone, cinnamon garnet, Hessonite, false hyacinth, hyacinth Variety : see above (causes of color)</p>		
Property attributed	<p>The ancient Chinese said that the red garnet represented the soul of a tiger that had been turned into stone after death.</p>		

	<p>Throughout the history of India, it is said that this gem, also called <i>Gomeda Gomedha</i> , or even <i>Gomed Ratan</i> , <i>Gomethakam</i> , <i>Gomedhaka</i> have been worn to prevent people from becoming lazy . The ancient Hindus also believed that these gems were created from the nails of the demon they called Vala / Bala.</p> <p>In Indian astrology, exonite is linked to the "shadow planet" Rahu . Rahu is believed to be the head of the demon / dragon who drank the nectar when it was extracted / given birth by the devas (the Hindu gods) and is considered the most evil planet of all. According to Vedic astrology, it causes many problems for those born under its light, particularly if it is placed in an evil house in the horoscope (for example in the tenth house in the birth chart) . It makes you live in misery, anguish, misery, anger and anxiety. Rahu can lead, when opposed, to obsession with worldly desires and immediate gratification.</p> <p>Hessonite is used to ward off the influence of Rahu. It also helps the wearer advance professionally, improve finances, health and happiness, and dissuades enemies from plotting against the wearer. It is highly recommended for those involved in active politics or legal professions such as attorneys, lawyers, judges . If, on the other hand, it is in a favorable position, it can bring strong spiritual value to people considered wise.</p> <p>In general, exonite, in addition to encouraging a sweet atmosphere, inhibits malicious rumors and gossip. According to Vedic astrologers, wearing an exonite of two carats or higher brings wealth, success and promotes longevity . Interestingly, garnet in general is known to be a gemstone associated with success, especially in business.</p> <p>At the level of physical benefit, it is said that the energy hidden in this gem, is good for those suffering from allergies, skin disorders, hemorrhoids, epilepsy, eye infections, colds, sinusitis, fatigue, tiredness, insomnia, blood pressure, hearth disorders, upper body infections . For optimum effect, it should be mounted on silver (well polished). If on a ring, it should be worn on the middle finger and as a pendant it should touch the body. It is a recommended stone for people of birth number 4.</p> <p>Planet: Mars Month: January (garnet in general) Zodiac sign: Aries, Aquarius (Europe), Libra and Taurus (India). Chakra: Crown</p>		
Treatments	<p>Like most garnets, exonite is not artificially altered routinely. On rare occasions, its appearance is altered by filling fractures and cavities. including polymeric fillings intended to stabilize highly fractured low quality material for cutting. A 1997 experiment showed that heating rhodolite (a purplish garnet) can produce an "exonite-like brownish color" at about 600 ° C. However, rhodoliths have a higher hardness (7-7.5) and require higher prices. Therefore, it is probably not a cost-effective process.</p>		
Synthetic counterpart	<p>There are many varieties of garnet on the market, buy them the gorsularites (and therefore also the exonites). Their use in jewelry is rare, given their relatively low cost in their natural state. However, there are various imitations in colored glass, plastic or synthetic quartz, especially in online shopping sites.</p>		
It can be confused with	<p>Distinction from other yellow / orange gems: Citrine (separation by: refractive index - RI, specific gravity - SG,), Spessartine (separation by: RI, SG, spectrum, inclusions), Malaya Garnet (separation by: RI, SG, spectrum), heliodor (separation by: optical character, RI, SG), natural Zircon (separation by: optical character, SG, dispersion, doubling), Sapphire (separation by: optical character, RI, SG, inclusions), Topaz (character optical, RI, SG), Tourmaline (optical character, pleochroism, RI, SG), Apatite (optical character, SG, RI, inclusions), Chrysoberyl (optical character, RI, SG), Glass (UV fluorescence, inclusions), etc. ..</p>		
Indicative gemological tests	<p>When viewed under magnification, exonite has an irregular transparency , less in some areas. This makes it more distinguishable from gemstones of the same color, such as topaz and citrine. It is also relatively simple to identify due to its manganese content and lower specific gravity than other garnet varieties.</p>		
Value (2021)	High : 80+ \$ / ct 3 carat +	Medium: \$ 20 / ct 1-3 carats	Low: \$ 2 / ct below the carat
Typical cut	<p>Transparent material is often faceted, while translucent stones can be cut into cabochons. The color of this gem makes it perfect for fall jewelry. Hessonite garnet can also help create a vintage effect with its sepia tones.</p>		
Famous stones	<p>There are no particularly famous stones for this species, however there are some prominent ancient jewels such as, for example, a pendant with an Hexonite cameo mounted in late Renaissance gold . The oval cameo bears the effigy of a putto riding a</p>		

	<p>dolphin, within a pierced gold and polychrome enamel frame with two successive drops of cultured pearls, suspended from a matching enamelled panel with triple chain links, circa 1600 . The jewel is probably of Spanish origin.</p> <p>A 61.5-carat faceted Hexonite placed as the head of Christ is part of the collection of the American Museum of Natural History in New York.</p> <p>Also in the Smithsonian Institution museum (in Washington, DC, USA) there is an interesting specimen, a 64.2 carat gem (brown-orange, from Sri Lanka) and in the National one of Canada (Ottawa, Ontario), you can see locally sourced exonites, from 23.94, 13.40, 8.50 carats.</p>
Record stones	<p>The mines of Sri Lanka can produce exonites up to several hundred carats, while those of Quebec are generally smaller in size, but can yield good quality stones, up to about 25 carats.</p>