



# INTERNATIONAL GEMOLOGICAL INSTITUTE

## COLORED STONE REPORT

November 18, 2021

IGI Report Number 502122037

Species NATURAL GROSSULARITE  
GARNET

Variety TSAVORITE

Shape and Cutting Style OVAL MIXED CUT

Weight 2.07 CARATS

Measurements 8.56 x 6.62 x 4.53 mm

Color and Transparency GREEN,  
TRANSPARENT

Characteristics NATURAL INCLUSION(S)  
PATTERN

### OPTICAL and PHYSICAL PROPERTIES

Refractive Index 1.74

Birefringence 0

Specific Gravity 3.61

*Optical and physical properties are approximate values*



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### Species & Variety

Gems may be classified in different species, according to their basic chemical composition and crystal structure; within a certain species, small differences in composition may result in different colors, or varieties.

The way that light interacts with the gem may create some astonishing optical phenomena, such as a star, a cat's eye effect or change of color, in different varieties

### Transparency

As light passes through a gemstone, part of it, if not all, will be absorbed, and part will be transmitted. The more light that is absorbed the less transparent the stone will be.

### Characteristics

Internal characteristics are the fingerprints of a gemstone. Not only do they provide essential information about the formation, but also the possible geological and geographical region where they originate from. Sometimes they also provide information about whether the gemstone has been treated.

### Refractive Index

When light passes through air and enters a gemstone it slows down due to a difference in the medium. The ratio between the speed of light in air and in a particular medium is known the Refractive Index.

### Optic Character

Determining how light travels through the crystal. Using a range of specialized instruments, we will be able to establish if the stone is isotropic or anisotropic, uniaxial or biaxial.

### Specific Gravity

Specific gravity is the ratio of the density of the gemstone to the density of an equal volume of water.

All IGI Laboratories employ a wide range of state-of-the-art equipment, like FTIR and Raman spectrometers, all of which give a unique spectral graph for different gemstones. They can reveal the species of the gemstone, treatments and, at times, even the geographic origin.

