



**INTERNATIONAL
GEMOLOGICAL
INSTITUTE**

COLORED STONE REPORT

February 19, 2021

IGI Report Number 462133577
Species NATURAL ZOIISITE
Variety TANZANITE
Shape and Cutting Style OVAL MIXED CUT
Weight 1.52 CARAT
Measurements 8.41 x 6.45 x 4.11 mm
Color and Transparency BLUISH VIOLET,
TRANSPARENT
Characteristics NATURAL INCLUSION(S)
PATTERN

Comments:

Tanzanites are commonly enhanced thermally; indicative evidence is typically lacking



OPTICAL and PHYSICAL PROPERTIES

Refractive Index 1.691 - 1.700
Birefringence 0.009
Optic Character BIAIXIAL
Optic Sign +
Specific Gravity 3.35

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.

