GIA Gem Database | Edward J. Gübelin Collection

GIA Collection Number: 35605

© GIA. Photo by Robert Weldon.

Species - Variety:

Zircon

Locality (as stated in Dr. Gübelin's records):

Madagascar, Fianarantsoa Province, Ilakaka

Description

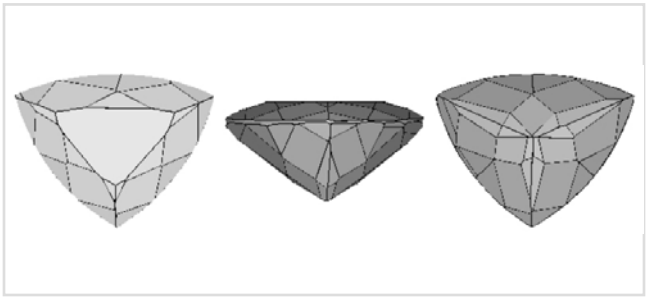
Shape: Triangle

Weight: 2.01 ct

Dimensions: 7.35 x 9.52 x 4.72 mm

Diaphaneity: Transparent

Color: Dark, moderately strong, slightly yellowish Green



Facet Diagram: top | side | bottom

Gemological Properties

Optical Character: Uniaxial positive

Refractive Index: Over the limit

Birefringence: Not calculated

Specific Gravity: 4.00

Pleochroism: None

Luster: Vitreous

Phenomenon: None

Fluorescence:

LWUV: None

SWUV: None

Phosphorescence:

LWUV: None

SWUV: None

Absorption Spectrum:

Broad absorption below 430 and above 650 nm

Photomicrograph

This zircon is free of internal features except for several parallel trails of tiny particles.

These trails of tiny particles are aligned along parallel growth zoning. The field of view is 1.45 mm across.

Magnification: 60x

© GIA. Photomicrograph by John Koivula.

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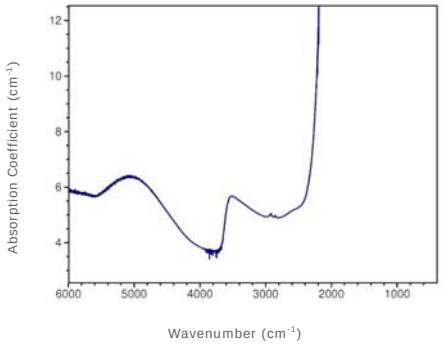
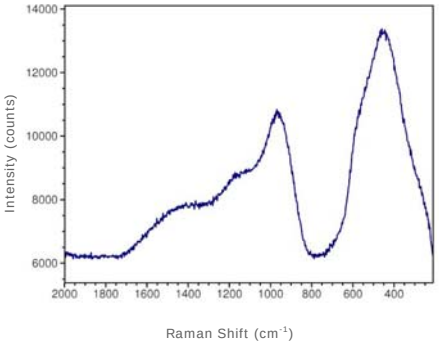
Spectrum

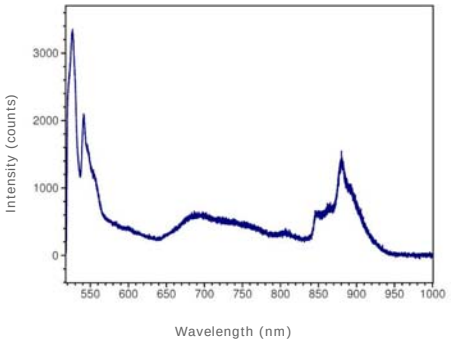
Infrared Absorption



Raman | baseline corrected | 514.5 nm laser



Photoluminescence | 514.5 nm laser

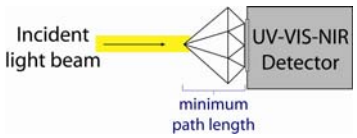


Transmission infrared absorption spectra were collected in the mid-IR range (400–6000 cm^{-1}) using a Thermo-Nicolet 6700 FTIR spectrometer (KBr beamsplitter, MCT-B detector, 1 to 4 cm^{-1} resolution, and 128 scans). A 6x beam condenser was used to focus light through the girdle region of the gemstone to obtain a maximum signal.

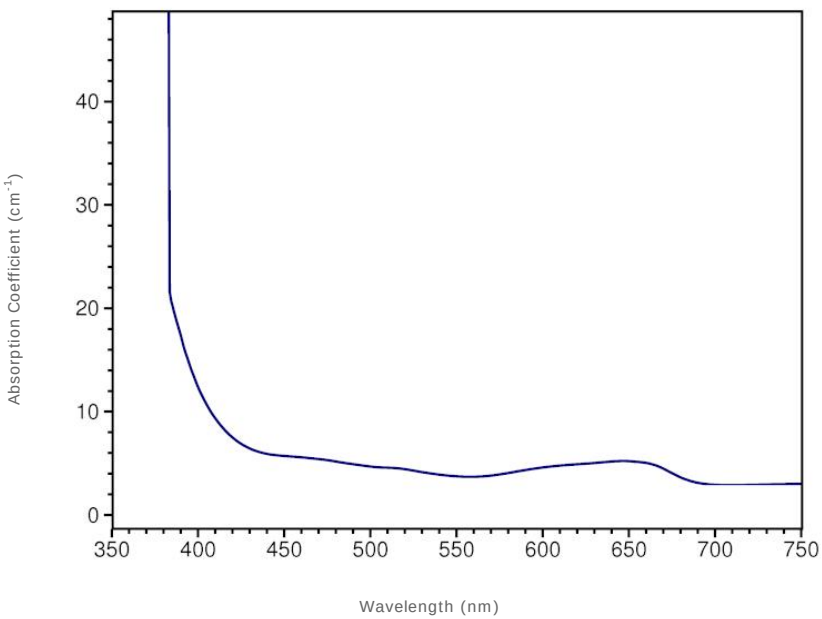
Raman spectra were collected over the range 100–2000 cm^{-1} Raman shift using a Renishaw InVia Raman microscope (3 additive scans, and excitation produced by 514.5 nm Ar-ion or 633 nm He-Ne lasers). Analysis was done using a focused beam on the table facet of the gemstone unless otherwise noted.

Photoluminescence spectra were collected in the 517–1000 nm range using a Renishaw InVia Raman microscope (single scan, and excitation produced by 514.5 nm Ar-ion laser). Analysis was done using a focused beam on the table facet of the gemstone unless otherwise noted, and the laser intensity was adjusted to avoid detector saturation caused by sample fluorescence.

No optic axis diagram available.
This gem material is optically uniaxial positive.



Visible Absorption | min. path length: 4.7 mm



Transmission absorption spectra in the UV to near-IR range (250-1000 nm) were collected using a Hitachi U4001 spectrometer (2.0 nm slit, 1.0 nm data interval, and 120 nm/min scan speed). Unless otherwise noted, an unpolarized light beam was focused on the culet area of the optically unoriented sample.

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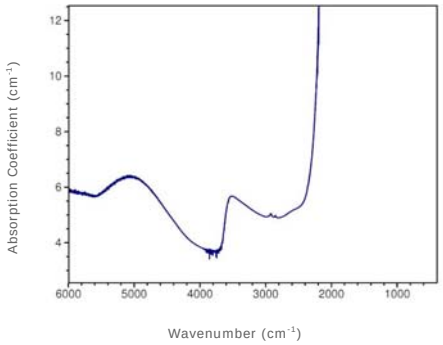
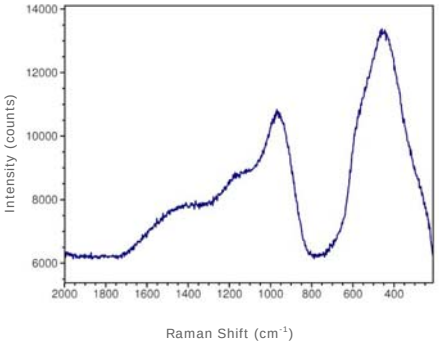
Spectrum

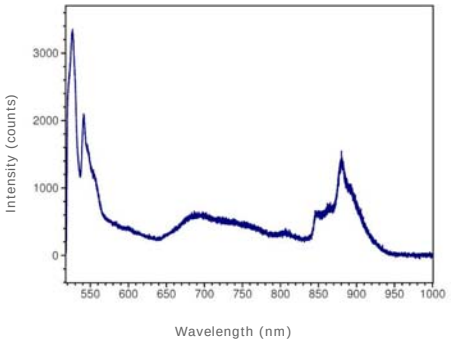
Infrared Absorption



Raman | baseline corrected | 514.5 nm laser



Photoluminescence | 514.5 nm laser



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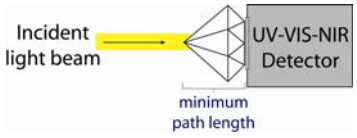
No optic axis diagram available. This gem material is optically amphorphous.



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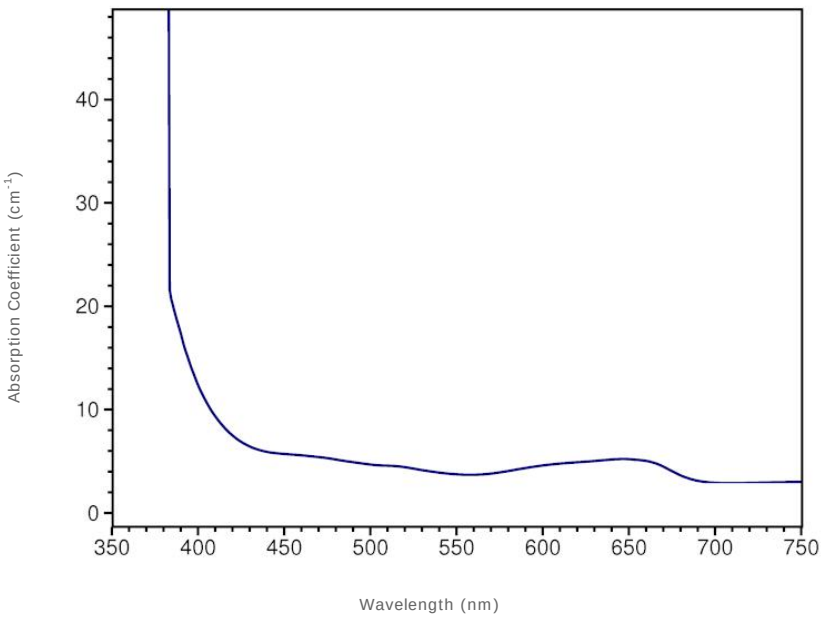

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