Gemometrics

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First step

Start by following the steps in the User Guide included with your GemPen®

- Getting Started
- Performing a test
- Interpreting results

Interpret fluorescing effect

How to interpret the fluorescing effects according to the Fluorescence colour map
The Fluorescence colour map (figure 1) should be interpreted as displaying various intensities of emitted fluorescence (1 to 5) in different colours (A to L) as follows:

- 5 = chalky light (i.e. chalky white or blue)
- 4 = very strong fluorescence
- 3 = strong fluorescence
- 2 = low fluorescence
- 1 = (very) faint fluorescence
- Inert = No fluorescence can be detected

GemPen® can help the professional user to distinguish between natural, synthetic and treated gemstones. However, **hydrothermally grown synthetic emeralds** are yet to be identified.

If the intensity of the fluorescence is between 5-3 it is an indication that the gemstone is synthetic (e.g. CVD, HPHT) or treated. If there is no fluorescence, so called inert, or a faint fluorescence (1) it is an indication that the gemstone is natural. If the fluorescence is interpreted as low (2), it is an indication that the gemstone is treated. Please note that it is up to the professional user to interpret the results.

Synthetic and treated gemstones may fluoresce in different manners (colours A to L) depending on how they are manufactured or treated. A synthetic gemstone may emit a strong, quite stable and unbroken fluorescence effect throughout the whole gemstone. It may look like a piece of glowing/burning charcoal. While if a gemstone is treated (e.g. beryllium or heat-treated), it may emit a fluorescence effect towards the surface of the gemstone. The same applies for other treatments such as glass fillings, oiling or fracture fillings; where the treated area of the gemstone may emit the fluorescence effect.

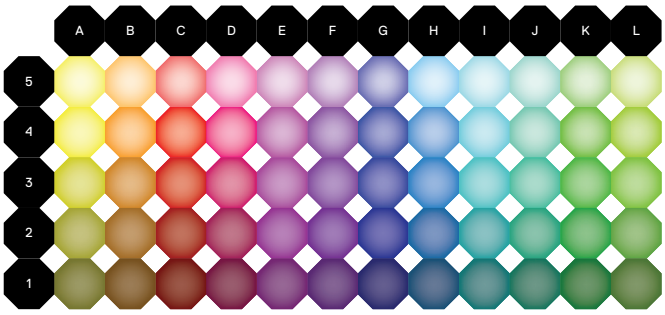

Figure 1

Recommended filters*
Filter 1 - Diamonds / Heat-treated Sapphires
Filter 2 - Treated Diamonds, Sapphires
Filter 3 - Sapphires
Filter 4 - Rubies / Beryllium-treated Sapphires

For more information, please review the GemPen® Test Trees and the GemPen® Gemstone Map in the GemPen® Academy.

*The professional user may alternate between different filters to observe variances in fluorescence, in particular to identify treatments.

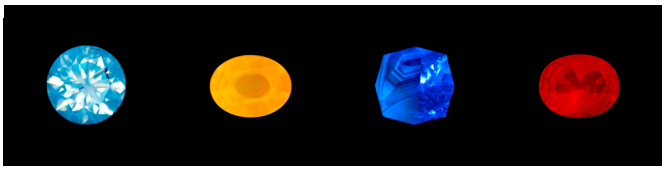

Figure 2