EMERALD AND DIAMOND RING, ca. 1930.

Platinum, 10% iridium.

Set with 1 oval Colombian emerald of ca. 10.20 ct, minimally enhanced, flanked by 4 diamond-baguettes and surrounded by diamonds totalling ca. 0.50 ct. Size ca. 47.

With Gübelin-Report no. 18110124, November 2018.

CHF 40 000 / 60 000
€ 41 240 / 61 860

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GEMMOLOGICAL REPORT

Report Number
18110124

Date
29 November 2018

Item
One faceted gemstone set in a ring

Weight
approx. 10.2 ct

Shape
oval

Cut
modified brilliant cut

Measurements
approx. 15.75 x 13.40 x 8.75 mm

Transparency
transparent

Colour
green

Species
Natural beryl

Variety
Emerald

Origin
Colombia

Condition
Indications of minor clarity enhancement with a modern filling material (resin-type).
Natural emeralds are commonly clarity enhanced.

Comments
See Information Sheet(s).

Important notes and limitations on the reverse.

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INFORMATION SHEET

to Report No. 18110124

Emerald, determination of the type of filler material

The practice of enhancing the visual appearance of emeralds by filling surface reaching fissures with oil or resin is a standard procedure. Such fissure filling can improve the visual appearance of an emerald dramatically. This treatment is generally accepted as a necessity due to the fractured nature of emeralds.

Gem labs are determining the presence or absence of any clarity enhancing substance in emeralds, and grade its extent. A broad variety of substances are applied for this treatment, characterised by different optical and mechanical properties, stability and durability. Following the growing request from end consumers for full disclosure, the Gübelin Gem Lab has decided to also offer the determination of the type of filler material, distinguishing different types.

Oil is a traditional type of filler in emeralds, used since more than two thousand years. Mostly of low viscosity it penetrates deep into the surface-reaching fissures. Oil can leak or dry out over time, losing its clarity enhancing effect. With the help of cleaning agents such as acetone, the oil can be removed. Hence, oiling is a reversible and repeatable process.

In the definition of the Gübelin Gem Lab, the oil-type group comprises different types of vegetable oils, paraffin oils (such as Johnson's baby oil), or natural and synthetic Canada balsam and cedar wood oil (tree oils). Most oil-type fillers are liquid to viscous at room temperature.

Resins are a more modern type of filling material, used since the middle of the last century. Mostly of synthetic origin, resins comprise several solid or highly viscous substances characterized by optical properties close to those of emerald, and, once applied in fissures, a high viscosity. This property makes resin more durable and stable, and hence suitable not only for clarity enhancement, but also for stabilising lower quality material which would not normally be sufficiently durable for use in jewellery without such treatment. Consequently, lower grades of emerald are mostly treated with resin. Due to their more stable nature, resins are harder to remove from fissures. Some resins are applied in combination with a polymerising hardening substance. The most common resin types and brands include: Opticon, Palm Resin (aka Palma), PermaSafe, ExCel, Emerald Beauty, Gematrat.

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Wax, typically paraffin wax, is another category of filling material used in emeralds. Wax is defined as solid at room temperature, malleable and not soluble in water.
On its gemmological reports, the Gübelin Gem Lab uses the following wording for the different types of filling materials:

a. Traditional (oil-type)
b. Modern (resin-type)
c. Mixed (oil-type and resin-type)
d. Wax

The type of filling material is mainly determined by spectroscopic methods, namely FTIR and Raman. The hardener contained in some type of resins shows spectroscopic properties of oil. Hence, such resins often cannot be distinguished from an oil-resin mix.