

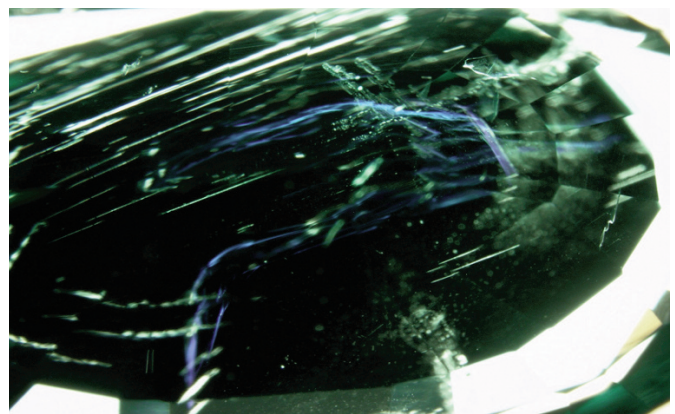
## CLARITY ENHANCEMENT:

### PROBABLY THE OLDEST GEM TREATMENT METHOD...

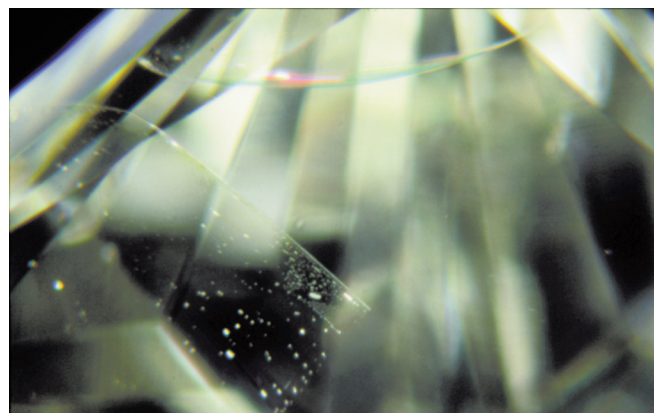
**M**odifying the appearance of a gem by filling the surface reaching fractures and fissures is arguably the oldest, most common and inexpensive treatment available in the market. Fissures and fractures almost always compromise the transparency. Although commonly known and “accepted” for emeralds, diamonds and jadeite, any gemstone with a surface reaching break has a potential for clarity enhancement.

Pliny the Elder dedicated a chapter for gem alterations in his infamous Volume 37 of Natural History, one of the rarest Ancient Roman manuscripts to survive intact for more than two millennia and translated over and over again. Ancients didn’t think of gem treatments as “enhancements,” many processes from oiling to heating were applied to lesser value gems to make them look like a rarer one, in other words, creating imitations through dramatic modifications. Pliny mentioned them almost as a warning. He despised them so much so that he wrote; *“To tell the truth, there is no fraud or deceit in the world which yields greater gain and profit than that of counterfeiting gems.”*

Considering Pliny wrote this particular chapter to reveal “common treatments” at the time, one can speculate that certain techniques were not as new even two thousand years ago. Pliny was merely passing on the information he had read on other books. As for oiling, he refers to several gems and notes the colored oil. While amber is mentioned as a good starting material for other colored gemstone



*Resin in emerald fracture displaying blue flash color.  
Courtesy of AGL New York.*



*Fracture filling in diamond displaying pink flash color.  
Photo by Gary Roskin.*

imitations when dyed with different colors, this particular sentence; “amber being boiled in the fat of a suckling pig” is used to describe what we understand today to be clarified amber.



Ruby over 3 ct treated with colored oil before and after cleaning.

Courtesy of AGL New York.

these procedures, gemologists tend to check these stones for presence of fillers during their standard testing. However, many other clarity enhanced gems pass without detection as those species or varieties

Historically, different types of oils, wax, resin, and glass have been used to mask the surface reaching breaks in order to enhance the clarity. In the last few decades, different types of polymer and synthetic oils have been used. Unlike heat and irradiation treatments, clarity enhancements change the appearance but not the structure. Almost all fillers are unstable and can be removed. Clarity enhanced stones need to be set and cleaned carefully in order to not displace the filler.

Clarity enhancement is a very common and low-cost procedure. The presence of a filler is somewhat easy to detect in most cases by iridescence and relief when viewed under magnification. Detection is vital especially when a stone is taken-in for repair, cleaning or appraisal. Clarity enhancement is easy to miss in other gem varieties because this treatment has most often been discussed in the trade in the context of the emerald and diamond trades. We are all familiar with the propriety fillers that are used and disclosed for diamonds (i.e., Yehuda) or emeralds (i.e., Eternity). Oiling of emerald has been known for a long time as it is the most common treatment for this variety. Similarly, glass filling in diamonds has been practiced since 1982. Due to common knowledge of

eties are not widely known for clarity enhancement. Any gem with a surface reaching break is a candidate for filling. There are numerous examples of ruby, sapphire, garnet, and paraíba tourmaline of high quality reported to have been clarity enhanced in the last decade or so. The following two links are a good start to understand the extent of clarity enhancement on different gems;

Oiled Gems Lab Alert: Lotus Gemology  
<https://www.lotusgemology.com/index.php/library/articles/315-oiled-gems-lab-alert-lotus-gemology>

Fissure-filling in Paraíba Tourmaline: SSEF  
<https://www.ssef.ch/fissure-filling-in-paraiba-tourmaline/>

The use of polymer with dyes is also well known. This should be disclosed as color treatment (dye) and it has a significant effect on overall value. The use of polymer to fuse the pieces of stones, mostly emerald and beryl, together in order to create bigger pieces has been reported since the mid-2000s. These stones are considered as “composite” and must be distinguished from clarity enhanced gems for disclosure purpose. ♦

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