

## RUBY INFORMATION

Most rubies are heated during the processing that takes place from the mine, to lapidaries and marketers. Today it is rare for a ruby not to have been enhanced by heat. If the words "Enhanced by heat" are used in the "Enhancement" section of this report this indicates that the ruby has been subjected to controlled heating during the processing period. Generally, the heating of rubies is done to improve their color and/or clarity.

Occasionally different kinds of residue from the heating process remain within some fissures in a heated ruby, also some fissures may have been caused to heal closed during the same process. These fissures appear closed when observed with a normal gemological microscope, and no changes in luster are observed at the point(s) they reach the surface. While these may not enhance the appearance of the ruby, at least to the same extent the heating enhances color and other clarity factors. GTC will report upon their presence. If one of the following statements is present in the "Comments" section of a report this indicates an increasing amount of residue and/or healed fissures present from minor to significant.

1. "A minor amount of residue from the heating process is present in fissures"
2. "A moderate amount of residue from the heating process present in fissures"
3. "A significant amount of residue from the heating process present in fissures"

Occasionally the materials used to protect a ruby during the heating process may, either accidentally or by design, enter cavities and/or fissures and solidify as a glass. If clearly present in what otherwise would be open fissures or cavities, this glass may give a false appearance to the "finish" of the stone and falsify the carat weight. In the "Result" section of this report you will find the statement "Treated Natural Ruby" if this glass is observed as an area of "lower surface luster". This will further be explained in the "Comments" section in the following manner:

"Glass is filling what would otherwise be open fissures (and/or cavities) within this stone".

Occasionally a colorless oil may be used to disguise fissures in a ruby and produce an enhanced surface luster. If colorless oil is found to be present this will be recorded in the "Enhancement" section of this report as "Enhanced with oil". This will be further explained in the "Comments" section.

Occasionally a red colored oil, or other kinds of red dyes may be used to change the color of a corundum (of which ruby is a family member). If this red dye or red oil is observed, the statement "Dyed Natural Corundum" will be found in the "Result" section of this report.

Occasionally corundum with an undesirable color is treated by a surface diffusion process. The required elements are only diffused into the surface area of a preformed or cut stone. This results in color occurring at and just below the surface. The statement "Surface Diffusion Treated Corundum" will be found in the "Result" section of this report if the red color of the stone is due to the surface diffusion process. This will be further explained in the "Comments" section.

Occasionally corundum is treated by a surface diffusion process to produce an artificial star effect. The required elements are only diffused into the surface area of a stone cut into the shape of a cabochon. This results in a star effect occurring at and just below the surface. The statement "Surface Diffusion Treated Corundum" will be found in the "Result" section of this report if the star effect is due to the surface diffusion process. This will be further explained in the "Comments" section.

Recently some corundum treated in the Far East has been found to be radioactive. The statement "Radioactive Corundum" will be found in the results section of this report if this is discovered. A statement in the "Comments" section advises the owner to consult the relevant authorities for safety requirements.

The person making the submission may sometimes request an opinion on the origin of a stone. If requested, and when possible, this information is given in a section on the front of the report entitled "Origin". This section will not be present if an opinion on origin is not requested. Tests to determine origin involve the observation of inclusions and on occasion the positive identification of these with Raman spectroscopy. Other tests include the analysis of trace element composition and their ratios and UV/visible as well as IR spectroscopy. Given that from any locality a wide range of qualities may be mined, any opinion given on this report regarding the origin of a stone should not be regarded as a guarantee of quality. Not all stones submitted provide the necessary data for an origin to be determined.

Caution: It is possible to enhance or treat a ruby at any time during its life, therefore comments regarding treatments and/or enhancements on the front of this report are specific only to the time period that the ruby was actually within the AGTA Gemological Testing Center. Rechecks may be necessary if a period of time has passed or the ruby has changed owners.

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