LMHC Information Sheet # 5

Emerald

- **No fissures or No fissure filling / No indications of clarity modification**
- **Indications of fissure filling / Indications of clarity modification**
- **Indications of cavity filling**
- **Indications of coloured fissure filling / Indications of clarity and colour modification**
- **Emerald with/and resin (manufactured product)**

Members of the Laboratory Manual Harmonisation Committee (LMHC) have standardised the nomenclature that they use to describe an emerald.

Emerald definition:

Emerald is a beryl mainly coloured by chromium and or vanadium showing a medium to strong green saturation. If the greenish colour in an iron-rich beryl is only related to low traces of chromium, then the stone is considered a green beryl and not an emerald.

Emerald: No fissures or No fissure filling / No indications of clarity modification

Any emerald that has no fissures or does not show indications of having undergone modification through the filling of fissures with oils, resins, wax or any other filler shall be described as,

Identification:	
Species:	**(natural)[1] beryl**
Variety:	**(natural)[1] emerald**
Further information:	**None[2]** or **No fissure filling[3]** or **No indications of clarity enhancement / modification[3]** or **At the time of examination, this gemstone does not show any clarity enhancement. However, there are fissures present that can be filled at any time[3].**

Emerald: Indications of fissure filling / Indications of clarity modification

Any emerald that shows indications of having undergone modification through the filling of fissures with colourless to near-colourless oils, resins, wax or any other filler[4] shall be described as,

Identification:	
Species:	**(natural)[1] beryl**
Variety:	**emerald**
Further information:	**Fissure filling** or **Indications of clarity enhancement / modification (Clarity enhancement / modification is usually reversible and repeatable at any time. This report states the condition only at the time of examination)[1]** **(plus the appropriate quantification terminology)[1], (plus the identification of the filler)[1]**. See table 1 for instructions concerning the use of the designated alpha numeric or text descriptions.

[1] Text in parenthesis is optional
[2] Only use if no fissures are observable
[3] Only use if fissures are observable
[4] When viewed in bulk, e.g., in a bottle, oils and resins may appear to have colour. However, when viewed in thin films, as in fissures, the appearance may be colourless to near-colourless.

Table 1: Emerald, quantification and identification of filler in fissures

Status:	No fissures present in stone	No or insignificant filler in fissures[3]	Quantification and identification of filler in fissures		
Report Alpha numeric:			F1	F2	F3
Report Text:	None[2]	**No** / **Insignificant** fissure filling	**Minor** amount of oil / resin in fissures	**Moderate** amount of oil / resin in fissures	**Significant** amount of oil / resin in fissures
		or	or	or	or
		No / **Insignificant** indications of clarity enhancement / modification	Indications of **minor** clarity enhancement / modification	Indications of **moderate** clarity enhancement / modification	Indications of **significant** clarity enhancement / modification

Notes

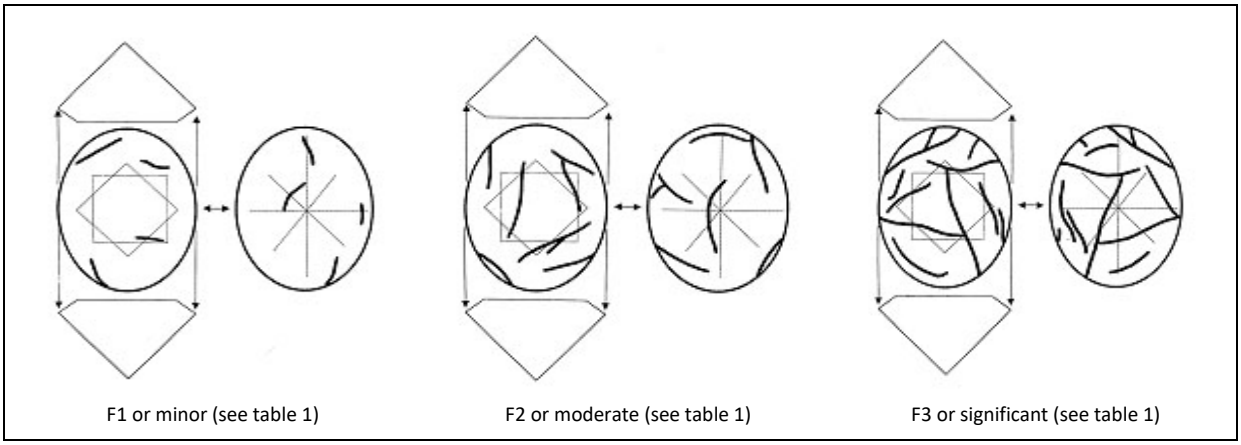
A: Opaque residues of resins or oils that remain behind within fissures following 'cleaning' or through deterioration shall not be reported upon within the context of this IS. However, an informative note may be placed on reports if opaque residues of resins or oils remain behind within fissures of emeralds through deterioration, e.g., drying or incomplete cleaning. An example of such a note would be: '(oil/resin) residues present'

B: The presence of materials within fissures that occur naturally is not within the context of this IS and need not be declared.

C: Whether using the alpha numeric or text description, the report shall also illustrate the equivalent by appending the above table or this Information Sheet shall be referenced.

D: Filler identification may be applied as an option.

Figure 1: Illustrations for quantification of filler in fissures



F1 or minor (see table 1) F2 or moderate (see table 1) F3 or significant (see table 1)

Emerald: Indications of cavity filling

Any emerald that shows indications of having undergone modification through the filling of wide fractures and/or cavities with colourless to near-colourless resins or wax shall be described as,

Identification:
Species: **(natural)[1] beryl**
Variety: **emerald**

Further information: **Cavity filling**
(plus the appropriate quantification terminology)[1], (plus the identification of the filler)[1]. See table 2 for instructions concerning the use of the designated alpha numeric or text descriptions.

Table 2: Emerald, quantification and identification of filled wide fractures/cavities

Condition →	**Quantification and identification of filler in fracture(s) / cavity(ies)**		
Report Alpha numeric→	**C1**	**C2**	**C3**
Report Text→	**Minor** amount of resin / wax in cavities	**Moderate** amount of resin / wax in cavities	**Significant** amount of resin / wax in cavities

Notes:
E: Whether using the alpha numeric or text description, the report shall also illustrate the equivalent by appending the above table or this Information Sheet shall be referenced.

F: The presence of material within fractures that has occurred naturally is not within the context of this IS and need not be declared.

G: Durability/Stability: oil/resin fillers may be unstable at elevated temperatures and to chemical agents. Special care shall be taken when repairing jewellery items set with oil / resin filled emerald. The unmounting of such stones prior to jewellery repair is recommended.

Emerald: Indications of coloured fissure filling/ indications of clarity and colour modification

Any emerald that shows evidence of having fissures/fractures filled with coloured agents[2] that have an effect on the colour[3] shall be described as,

Identification:
Species: **(natural)[1] beryl**
Variety: **emerald**

Further information: **Coloured filler in fissures/fractures** or **Indications of clarity and colour enhancement/ modification by a coloured substance**
(plus the appropriate quantification terminology)[1], (plus the identification of the filler)[1]. See table 1 for instructions concerning the use of the designated alpha numeric or text descriptions.

[1] Wording and text in parenthesis is optional
[2] This clause does not include the presence of polishing compounds in fissures.
[3] Filling material has sufficient colour to be seen in a thin film, i.e., within fissures.

Emerald with/and resin

It is possible to take a heavily fractured, friable, single piece of rough emerald/beryl, infuse the fractures with resin and then facet a stone from the treated material. Following the faceting process wide fractures filled with resin may be found to encircle the stone. If the resin were removed the stone would fall into at least two parts.

Identification:	
Species:	**manufactured product** or **(natural)[1] beryl with/and resin**
Variety:	**emerald with/and resin** or **manufactured product**
Further information	**This stone is a combination of resin and emerald** (If the resin is removed the stone may fall into pieces)[1] (Fracture filling materials such as resin may be unstable to elevated temperature and to chemical agents)[1]. (Special care should be taken when cleaning or repairing jewellery items set with fracture filled stones)[1]

[1] Wording and text in parenthesis is optional

Figure 2: Emerald with resin:

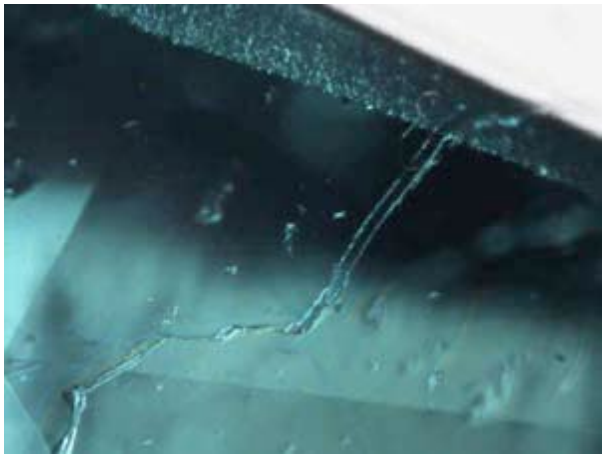


Figure 2a: A faceted emerald held together as one piece by a wide tract of hardened resin as an example of '**emerald with resin'**.

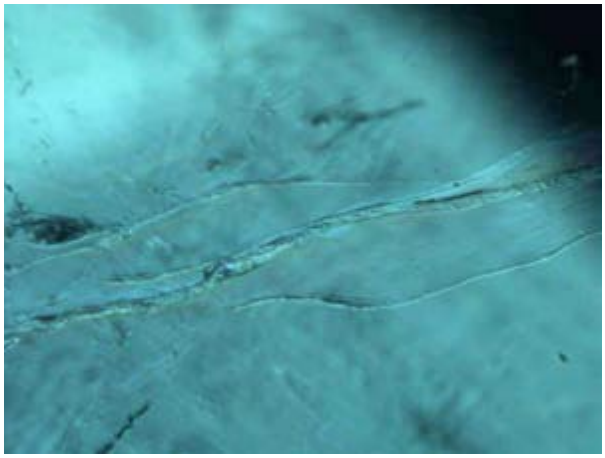


Figure 2b: A faceted emerald held together as one piece by a wide tract of hardened resin as an example of '**emerald with resin**'.