

# Field Gemology and GIA's Colored Stone Research Collection

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◆ GIA's Field Gemology team is responsible for building and maintaining an extensive collection of gems with known origin and treatment status.

◆ This collection supports research on colored gemstones, prioritizing geographic origin determination and treatment detection.

◆ Since 2009, GIA has organized over 100 field expeditions and collected over 30000 samples on every continent.

◆ The main focus is on gem corundum, emerald and spinel.

◆ Samples are collected at the mine and in the trade, the reliability of the samples is documented on a scale from A to F.

GIA's Colored Stone Research Collection is divided in four sub-sections with their own focus

<p><b>Gem:</b> Focus on Gems (16876 samples)</p> <ul style="list-style-type: none"> <li>Sufficiently large and free of fractures</li> <li>Polished windows for inclusion studies</li> <li>Mostly corundum, spinel and beryl varieties; recent additions focussed on opal, green garnet, tourmaline and alexandrite</li> </ul>	<p><b>Treatment:</b> Focus on Gem Treatment (1430 samples)</p> <ul style="list-style-type: none"> <li>Only includes stones that have been treated</li> <li>GIA researchers routinely heat and irradiate gems to study the impact of treatments on inclusions, spectroscopic features and chemical composition</li> <li>Some samples are purchased in the trade as treated. These are often more complex treatments like glass-filled corundum or Be-diffused sapphires</li> </ul>
<p><b>Matrix:</b> Focus on Geological Studies (1279 samples)</p> <ul style="list-style-type: none"> <li>Gems in matrix</li> <li>Barren host rock</li> <li>Minerals associated with formation of gems</li> </ul>	<p><b>General:</b> Non-gem material (10536 samples)</p> <ul style="list-style-type: none"> <li>Lower clarity and small size</li> <li>Not useable for standard gemological research</li> <li>Can be used for destructive testing or experimental analytical procedures</li> <li>Unusual mineral varieties</li> </ul>

Sample type distribution in GIA's collection

