

Fluid Inclusion Studies on Emeralds from Malipo Area, Yunnan Province, China

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Abstract: Malipo emerald originates in Laojunshan metamorphic core complex. Petrographic observation, microthermometry and Raman spectroscopy studies on fluid inclusions in emerald from pegmatite vein were conducted. Results show that the mineralization was related to mesothermal-hypothermal fluid of NaCl-H₂O-CO₂-CH₄ ± N₂ system with low salinities. There are paragenetic relationship in two-phase H₂O-NaCl type fluid inclusions and H₂O-NaCl-CO₂ type inclusions, and the main homogenization temperature ranges of the two types inclusions approximate each other, while the salinity of H₂O-NaCl-CO₂ type inclusions is lower than that of H₂O-NaCl type inclusions. Characteristics of fluid inclusions in emerald show that the precipitation of emerald is due to fluid immiscibility. The genesis of Malipo emerald deposit is believed to be related to the intrusive rock.

Keywords: emerald; Malipo; Yunnan Province; fluid immiscibility; microthermometry; laser Raman