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藏东玉龙斑岩铜矿床多期流体演化与成矿的流体包裹体证据

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摘要:

通过对玉龙斑岩铜矿石英斑晶、辉钼矿石英脉中流体包裹体岩相学、包裹体显微测温分析、包裹体成分的激光拉曼探针分析及包裹体中子矿物的扫描电镜/能谱分析,发现矿化斑岩石英斑晶中发育多期流体包裹体、斑晶中除流体包裹体外尚可见少量熔体包裹体与斑岩期矿化有关的成矿流体以中高温(200~537℃)、高盐度(29.6~44.7wt%NaCl_{eq})为特征,与粘土化蚀变有关的流体包裹体以低温、富Ca为特征,不同气相充填度的气液两相包裹体与高盐度含子矿物多相包裹体共存,且具有相似的均一温度,显示不混溶流体包裹体特征温度、压力降低引起的流体不混溶是造成斑岩型矿化矿质沉淀的主要因素,斑岩期流体与浅成低温热液期流体形成于统一的流体系统,为同源演化结果。

英文摘要:

Petrographic observation, microthermometry, Laser Raman Microprobe Analysis (LRM) and Scanning Electron Microscope/Energy Dispersion Spectrum (SEM/EDS) was performed to fluid inclusion in phenocryst quartz and molybdenite-quartz vein. Different kinds of inclusions was observed including melt inclusions, two phase aqueous fluid inclusions and multi-phase fluid inclusions with daughter minerals. Most of fluid inclusions in phenocryst quartz formed in K-silicate and quartz-sericite stage. Little melt inclusion survived later alteration. The ore-forming fluid related to K-silicate and quartz-sericite alteration is characterized by K-rich, high temperature and high salinity with meaning of magmatic origin. Argillic alteration is attributed to a Ca-rich, low-temperature fluid. From porphyry mineralization to hypogene mineralization, Ore-forming fluid evolved from NaCl-KCl-H₂O-CO₂(CH₄) to CaCl₂-H₂O-CO₂ system. The authors think that there are some origin affinity between early high temperature, K-rich fluid and later low temperature Ca-rich fluid. K-silicate, quartz sericite and argillic alteration occurred in different evolution stage. Unmixing of fluid caused by falling of pressure and temperature is the dominated factor for mineralization.

关键词: [玉龙斑岩铜矿床](#) [流体包裹体](#) [流体演化](#)

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