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黑龙江金厂金矿床流体包裹体特征及成矿作用研究

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摘要:

金厂金矿床是一个发育有隐爆角砾岩筒、似层状微细脉浸染及裂控石英脉-蚀变岩三种矿化类型的特大规模矿床。本文对区内三类矿化石英中的流体包裹体进行了岩相学、显微测温、成分、氢-氧同位素及子矿物的扫描电镜等多方面对比研究,结果表明三类矿化成矿流体具有不同的地球化学性质:隐爆角砾岩筒成矿流体为岩浆-溶液过渡态流体;似层状微细脉浸染型成矿流体为一种成分复杂的高盐度热液;而裂控型成矿流体为高盐度的NaCl-H₂O溶液。氢-氧同位素组成特征揭示出它们均来自于岩浆活动。结合矿体产状及已有的年代学资料,认为三类矿化形成顺序为隐爆角砾岩筒型→似层状微细脉浸染型→裂控型,因此金厂金矿床是不同期次岩浆来源流体叠加成矿的产物。

英文摘要:

Jinchang gold deposit is a superlarge one with three different kinds of mineralization, which are cryptoexplosive breccia pipe type, bedded micro-fine vein disseminated type as well as fault-controlled quartz-vein and altered rock type respectively. This paper carried out a comparative study on fluid inclusions occurred in quartz of the three -type ores from petrography, microthermometry, compositional and hydrogen-oxygen isotope analyses as well as SEM/EDS analysis of daughter minerals etc. aspects, the results show that the ore-forming fluids of the three-type mineralization posed different geochemical features. The ore-forming fluids of the cryptoexplosive pipe type mineralization belong to magmatic-hydrothermal transitional fluids; that of the micro-fine vein disseminated type mineralization belong to highly saline solutions with a complex composition; whereas the ore-forming fluids of the fault-controlled quartz-vein and altered rock type mineralization belong to highly saline NaCl-H₂O solutions. The composition of hydrogen-oxygen isotopes of fluid inclusions reveal that they all came from magmatic activities. Combined with the occurrences of ore bodies and geochronological data existed, the conclusion was made that the metallogenic evolution sequence in the mining district is cryptoexplosive breccia pipe type→ bedded micro-fine vein disseminated type→ fault-controlled quartz-vein and altered rock type and Jinchang gold deposit is the result of superimposition of mineralization of magmatic fluids at different phases.

关键词: [流体包裹体](#) [成矿作用演化](#) [金厂金矿床](#) [黑龙江省](#)

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