

钟军,陈衍景,陈静,李晶,祁进平,戴茂昌. 2011. 福建省紫金山矿田罗卜岭斑岩型铜钼矿床流体包裹体研究. 岩石学报, 27(5): 1410-1424

福建省紫金山矿田罗卜岭斑岩型铜钼矿床流体包裹体研究

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基金项目:

摘要:

罗卜岭斑岩型铜钼矿位于紫金山矿田北东侧,产于四坊花岗闪长岩和罗卜岭花岗闪长斑岩体内。矿体平面上呈半环形展布,空间上呈马鞍状,矿石主要为浸染状和网脉状构造。根据矿物组合与脉体穿插关系,将矿区各类热液脉体分为早、中、晚三个阶段,分别为:早阶段钾长石-石英±磁铁矿±辉钼矿脉,产于钾化蚀变带;中阶段石英±辉钼矿脉±黄铜矿±黄铁矿脉和硬石膏-黄铜矿脉,产于被绢英岩化叠加的钾化蚀变带和绢英岩化蚀变带;晚阶段石英±石膏±黄铁矿脉,产于绢英岩化带和明矾石-迪开石-绢英岩化蚀变带。早、中阶段脉石矿物中以富气相水溶液和含子晶包裹体为主,其次为CO<sub>2</sub>包裹体和富液相水溶液包裹体,偶见纯CO<sub>2</sub>类包裹体;晚阶段仅发育富液相的水溶液包裹体。早阶段包裹体均一温度集中在420~540℃之间,盐度介于0.4%~62.9% NaCleqv,流体属NaCl-CO<sub>2</sub>-H<sub>2</sub>O体系。中阶段包裹体均一温度集中在340~480℃,盐度为0.5%~56.0% NaCleqv,CO<sub>2</sub>含量降低,压力、氧逸度低于早阶段。晚阶段水溶液包裹体均一温度为140~280℃,盐度为0.4%~8.4% NaCleqv。中阶段流体沸腾作用强烈,导致大量硫化物沉淀,晚阶段流体演变为NaCl-H<sub>2</sub>O体系,可能有大气降水混入。

英文摘要:

The Luoboling porphyry Cu-Mo deposit locates in the northeastern Zijinshan ore field, and is hosted by Sifang granodiorite and Luoboling granodiorite porphyry. Orebodies are saddle-like in shape and contain various hydrothermal veinlets. Ore structures are mainly dissemination, stockwork and veins. According to mineral assemblages and crosscutting relationships, the ore-forming process and veins are divided into early, middle and late stages, i.e. the early stage feldspar-quartz±magnetite±molybdenite veins in the potassic silicate alteration zone, the middle stage quartz±molybdenite±chalcopyrite±pyrite veins and anhydrite-chalcopyrite veins in the phyllic alteration zone and the potassic alteration zone overprinted by the phyllic alteration zone, and the late stage quartz±gypsum±pyrite veins in the phyllic alteration zone and the alunite-dickite-phyllic alteration zone. Fluid inclusions in minerals of the early and middle stages are mainly vapor-rich aqueous and daughter mineral-bearing inclusions, together with minor CO<sub>2</sub>-rich and liquid-rich aqueous inclusions; whereas the late stage minerals only contain liquid-rich aqueous inclusions. Homogenization temperatures and salinities of fluid inclusions in the early stage range from 420℃ to 540℃ and 0.4% to 62.9% NaCl eqv, respectively; while those of the middle stage range from 340℃ to 480℃ and 0.5% to 56.0% NaCl eqv, respectively. Volume percentage of CO<sub>2</sub> phase and oxygen fugacity of fluid inclusions in middle stage minerals are lower than those in the early stage. The late-stage liquid-rich aqueous inclusions yield homogenization temperatures of 140℃~280℃ and salinities of 0.4%~8.4% NaCl eqv. It is concluded that boiling occurred in middle stage and caused precipitation of voluminous sulfides as stockworks; and that the fluids evolved into NaCl-H<sub>2</sub>O system, with an input of meteoric water.

关键词: [流体包裹体](#) [罗卜岭斑岩铜钼矿床](#) [紫金山矿田](#) [福建省](#)

投稿时间: 2010-12-02 最后修改时间: 2011-03-17

主办单位：中国矿物岩石地球化学学会

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