

新疆萨尔托海铬铁矿造矿铬尖晶石蚀变特征及指示意义

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引用本文: 张建,徐海山,王登红,张作衡,陈振宇,张让民.2009.新疆萨尔托海铬铁矿造矿铬尖晶石蚀变特征及指示意义[J].地球学报,30(5):599-606.

DOI: 10.3975/cagsb.2009.05.05

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基金项目:中央级公益性科研院所基本科研业务费资助项目(编号: K0815和K0805)、中国地质调查局项目(编号: 1212010733803)、(编号: 1212010535804)、(编号: 1212010786)和科技部“十一五”国家科技支撑计划重点项目(编号: 2006BAB07B00)联合资助

中文摘要:本文通过对萨尔托海矿区25矿群矿体边部、接近围岩造矿铬尖晶石的镜下观察发现:造矿铬尖晶石由三部分组成,自核部至边部依次是未蚀变的核部(灰色)、早期蚀变的带(灰白色)和晚期蚀变的边部(浅灰色)。探针分析上述三部分的成分,得出早期蚀变中Al大量流失,而Fe发生富集,晚期蚀变Al、Cr、Mg相对于早期蚀变发生富集,而Fe大量流失。通过对比造矿铬尖晶石与国外变质超基性岩副矿物铬尖晶石对比,认为早期蚀变对应的低角闪岩相变质,温度为550℃~600℃,晚期蚀变对应的是绿片岩相变质,温度为350℃~500℃,核部蚀变环境介于低角闪岩相和高角闪岩相之间,稳定温度高于600℃,故未发生蚀变。通过分析区域变质特征并结合造矿铬尖晶石所处的空间部位,认为晚期蚀变是达拉布特蛇绿岩带近期区域构造作用的结果,推测早期蚀变可能与蛇绿岩构造侵位有关。

中文关键词:新疆萨尔托海 铬尖晶石 蚀变特征

Alteration Characteristics of Ore-forming Cr-spinel in the Sartokay Chromite Ore District, Xinjiang

Abstract:The altered Cr-spinel in disseminated ore is composed of three parts, namely, unaltered core (gray), early altered middle zone (gray) and late altered edge (light gray). Electron microprobe analyses of these three parts show that the altered Cr-spinel experienced loss of Al and enrichment of Fe in early alteration, and enrichment of Al, Cr, Mg and loss of Fe in late alteration relative to early alteration. A comparison with chromium spinel in metamorphic ultrabasic rocks abroad has led the authors to believe that the early alteration corresponds to low-amphibolite facies metamorphism with the temperature being 550~600℃, the late alteration corresponds to greenschist facies metamorphism characterized by the temperature of 350~500℃, and the unaltered core is equal to metamorphism between the low amphibolite facies and the amphibolite facies, with the stable temperature higher than 600℃, hence resulting in no alteration. Based on an analysis of the characteristics of regional metamorphism in combination with the location of altered Cr-spinel, it is considered that the late alteration might have resulted from regional tectonic activity after the location of Dalabute ophiolite, whereas the