

THE CHARACTERISTICS OF APATITIC CARBONATITE OF PROTEROZOIC KUNYANG RIFT, YUNNAN , CHINA

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The apatitic carbonatite found in Shizhikou ore block of Yinachang iron-copper ore mining area in Wuding county, Yunnan province, China is located on the western edge of Wuding basin in the middle section of Proterozoic Kunyang rift. The rock exists in the upper member of Yinmin formation of Kunyang group. Its characteristics is the stripped structure that is combination of carbonatite and 10-20 percent apatitic spheres and strips.

The characteristics of the part of carbonatite are as follows: bright yellow, that can be changed into coffee color after weathering; fine grained texture and stripped structure; main minerals are dolomite, albite, oligoclase, phlogopite etc, as well as the accessory minerals of apatite, leucocence and rutile exist in there; rich in SiO₂, TiO₂, FeO, MnO, K₂O, Na₂O, P₂O₅ and REE.. The apatitic spheres have been pulled and changed into long ellipsoid which ratio of length to width is 10-5 to 1 by rhyo-deformation. The apatitic band might be formed from further extension, which length is 15-50 cm and thickness 0.5-3 cm. Under naked eye, the rock appears vitreous luster and glassy fracture. Under microscope, fluid structure composed of cryptocrystalline apatite, magnesite mica and carbon material, with ellipsoid shape fumarole-amygdaloidal structure can be observed. Amygdaloidal is a completed dolomite or calcite crystal that is secondary mineral filling in fumarole. This part is also rich in SiO₂, TiO₂, FeO, MnO, K₂O, Na₂O, P₂O₅ and REE. The apatitic carbonatite grows with alkali-basaltic volcanic rocks and carbonatitic tuff. Therefore, its fluid structure maybe shows that the rock is a kind of lava.