

CYMRITE AND Ba RICH MICAS FROM THE PIREN ALTO MASSIVE SULFIDE OCCURRENCE IN SOUTH CENTRAL CHILE.

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Electron microprobe analysis in silicates from Piren Alto massive sulfide, Queule Area, Coastal Range of South Central Chile, put in evidence the presence of mica like muscovite with up to 10.3% wt. BaO, 1.5% wt. Cr₂O₃, 1.3% wt. V₂O₃, and an hydrate barium-aluminum silicate, the rare mineral cymrite. The Pirén Alto Fe-Cu-(Zn) massive sulfide is a minor ore manto type in restricted outcrops, intercalated in the Western Series of the Paleozoic Metamorphic Basement. This Series consists of low grade metasediments, metabasites and metacherts, locally containing high pressure - low temperature rocks, identified by glaucophane and an occurrence of zussmanite in the Queule Area. The ore minerals show some textures related to metamorphic deformation. The orebody is possibly sinsedimentary - premetamorphic and indicates an environment of hydrothermal - exhalative activity in the seafloor before regional metamorphism. Other natural occurrences and experimental studies indicate that cymrite can be stable in zeolite and prehnite-pumpellyite facies as well as in the blueschist facies and in the high pressure - low temperature region of the greenschist facies. These favourable metamorphic conditions were present in rocks from the Queule Area. Ba-(Cr-V) rich micas are similar to other Ba rich mica occurrences reported in the world, related to orebodies in metamorphic rocks with hydrothermal - sinsedimentary premetamorphic history. These micas could have formed contemporaneously to the diagenesis and/or to the regional metamorphism of hydrothermally altered clay minerals and sediments with Ba, Cr, and V rich minerals.